

FOOD WASTE FROM FIELD TO TABLE

HEARING

BEFORE THE

COMMITTEE ON AGRICULTURE HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

MAY 25, 2016

Serial No. 114-52



Printed for the use of the Committee on Agriculture
agriculture.house.gov

U.S. GOVERNMENT PUBLISHING OFFICE

20-309 PDF

WASHINGTON : 2016

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
Fax: (202) 512-2104 Mail: Stop IDCC, Washington, DC 20402-0001

COMMITTEE ON AGRICULTURE

K. MICHAEL CONAWAY, Texas, *Chairman*

RANDY NEUGEBAUER, Texas,
Vice Chairman

BOB GOODLATTE, Virginia
FRANK D. LUCAS, Oklahoma
STEVE KING, Iowa
MIKE ROGERS, Alabama
GLENN THOMPSON, Pennsylvania
BOB GIBBS, Ohio
AUSTIN SCOTT, Georgia
ERIC A. "RICK" CRAWFORD, Arkansas
SCOTT DESJARLAIS, Tennessee
CHRISTOPHER P. GIBSON, New York
VICKY HARTZLER, Missouri
DAN BENISHEK, Michigan
JEFF DENHAM, California
DOUG LAMALFA, California
RODNEY DAVIS, Illinois
TED S. YOHO, Florida
JACKIE WALORSKI, Indiana
RICK W. ALLEN, Georgia
MIKE BOST, Illinois
DAVID ROUZER, North Carolina
RALPH LEE ABRAHAM, Louisiana
JOHN R. MOOLENAAR, Michigan
DAN NEWHOUSE, Washington
TRENT KELLY, Mississippi

COLLIN C. PETERSON, Minnesota, *Ranking
Minority Member*

DAVID SCOTT, Georgia
JIM COSTA, California
TIMOTHY J. WALZ, Minnesota
MARCIA L. FUDGE, Ohio
JAMES P. MCGOVERN, Massachusetts
SUZAN K. DELBENE, Washington
FILEMON VELA, Texas
MICHELLE LUJAN GRISHAM, New Mexico
ANN M. KUSTER, New Hampshire
RICHARD M. NOLAN, Minnesota
CHERI BUSTOS, Illinois
SEAN PATRICK MALONEY, New York
ANN KIRKPATRICK, Arizona
PETE AGUILAR, California
STACEY E. PLASKETT, Virgin Islands
ALMA S. ADAMS, North Carolina
GWEN GRAHAM, Florida
BRAD ASHFORD, Nebraska

SCOTT C. GRAVES, *Staff Director*
ROBERT L. LAREW, *Minority Staff Director*

CONTENTS

	Page
Conaway, Hon. K. Michael, a Representative in Congress from Texas, opening statement	1
Prepared statement	3
Peterson, Hon. Collin C., a Representative in Congress from Minnesota, opening statement	6
WITNESSES	
Pingree, Hon. Chellie, a Representative in Congress from Maine	7
Prepared statement	9
Gunders, Dana, Senior Scientist, Food and Agriculture Program, Natural Resources Defense Council, San Francisco, CA	10
Prepared statement	12
Fink, Jesse M., Managing Director, MissionPoint Partners LLC, Norwalk, CT; on behalf of ReFED: Rethink Food Waste Through Economics and Data	17
Prepared statement	19
Oxford, John, President and Chief Executive Officer, L&M Companies; Chairman-elect, Produce Marketing Association, Raleigh, NC	33
Prepared statement	35
Stasz, Meghan B., Senior Director, Sustainability, Grocery Manufacturers Association, Washington, D.C.; on behalf of Food Waste Reduction Alliance .	41
Prepared statement	43
Aviv, Diana, Chief Executive Officer, Feeding America, Chicago, IL	48
Prepared statement	50
Broad Leib, J.D., Emily M., Assistant Clinical Professor of Law and Director, Food Law and Policy Clinic, Harvard Law School, Jamaica Plain, MA	54
Prepared statement	56
Submitted question	156
SUBMITTED MATERIAL	
Budway, Robert, President, Can Manufacturers Institute, submitted letter	153
Vroom, Jay, President and Chief Executive Officer, CropLife America, submitted statement	154

FOOD WASTE FROM FIELD TO TABLE

WEDNESDAY, MAY 25, 2016

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Crawford, Gibson, Yoho, Rouzer, Abraham, Moolenaar, Kelly, Peterson, David Scott of Georgia, Walz, Fudge, McGovern, DelBene, Vela, Lujan Grisham, Kuster, Kirkpatrick, Plaskett, Adams, Graham, and Ashford.

Staff present: Haley Graves, Jodi Chapman, John Goldberg, Mary Nowak, Scott C. Graves, Faisal Siddiqui, John Konya, Anne Simmons, Lisa Shelton, Mary Knigge, Matthew MacKenzie, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. This hearing of the Committee on Agriculture entitled, *Food Waste from Field to Table*, will come to order.

I would ask David Scott to open us with a prayer. David.

Mr. DAVID SCOTT of Georgia. Dear Heavenly Father, we come before your throne of grace to first of all give thanks. We thank you for so many blessings you bestow upon us; blessings sometimes we do not even know. We thank you for your Holy Spirit that intercedes for us on our behalf. We thank you, dear Heavenly Father, for this hearing, for what could be more important than the food that we get on the table for needy people. And in this case, dear Heavenly Father, as we discuss the issue of food waste, we hope that you will implant within this Committee our resolve to do as much as we can to eliminate the food waste, to help our farmers be able to have the labor to get food out of the fields and into the hands and at the tables of those people who need it most. Dear Heavenly Father, we ask this in your name, and in the name of your son, Jesus Christ. Amen.

The CHAIRMAN. Amen. Thank you, David.

Well, good morning. Since I became Chairman of the House Agriculture at the beginning of last year, we have held more than 70 hearings and have invited a broad range of experts, including people in the field, to share their knowledge of everything from the futures markets to the farmers' markets.

The Committee doesn't agree all the time on every issue, but one of the reasons we are able to work in a bipartisan manner is that

we remember well-meaning people can have different ideas about how to achieve the same goal, whatever the issue may be. Because we have a different way of getting there doesn't mean one of us is wrong, and this is something we lose sight of in America today. Good public policy is not a zero-sum game. If advocates, Members, whoever it may be, are close-minded and unopened to compromise, it all but ensures retention of the *status quo* regardless of the issue.

An example of where we are engaging a variety of stakeholders is in this review of food waste. I commend my colleague from Maine, Chellie Pingree, for putting this on the Congressional radar. Today's hearing may be the first time the House Agriculture Committee is publicly engaging on this issue, but it will not be our last.

Forty percent of the food grown in the country is wasted. That amounts to 133 billion pounds of food wasted. That is billion with a B. Considering we have about 45 million people receiving assistance through SNAP, I believe this is a tremendous opportunity for us to take a closer look at our food chain, and figure out a way to ensure that food grown in this country reaches the dinner table and not the trashcan.

Speaking 2 weeks ago at a food waste summit, Secretary Vilsack commented that avoiding food waste loss could save U.S. families on average \$1,500 a year, and limiting food waste globally could help prevent hunger and malnourishment in the 825 to 850 million people worldwide who are not getting adequate food.

Tackling food waste in this country is, and should be a non-partisan issue that will be most successful by engaging everyone in the food chain, from the field to the table. It will take the collaboration of all stakeholders to be successful.

As we begin this review, we will undoubtedly identify issues that seem easy to resolve, yet are more complex than they appear. We will likewise identify other issues that have already been addressed, but simply require collaboration and what amounts to a public relations campaign to raise awareness.

Two such issues that Congress has acted upon that we should highlight today are the recently enacted permanent tax deduction for food donations and the Good Samaritan Food Donation Act. The permanent tax deduction for food donations was identified in recent legislation and was enacted as part of the last omnibus.

The second issue is one we hear an awful lot about, yet was addressed years ago by our former colleague and a Vice Chairman of the Committee, the late Bill Emerson. Many businesses, when given the opportunity to donate perfectly safe and wholesome food, are reluctant because of liability concerns. The Bill Emerson Good Samaritan Food Donation Act, enacted in 1996, fully addresses this concern. I wish to place into the record a Memorandum of Opinion drafted by the Department of Justice for USDA General Counsel that not only spells out the direct protection of the Emerson Act, but also describes the preemptive effect on state laws that may not provide the same level of protection.

When we began preparing for this hearing, we reached out to Representative Pingree, whom I am happy is here with us today and will shortly offer her introductory comments of her own. The witnesses that were invited represent a broad range of perspectives and expertise, but in no way represent the entirety of the commu-

nity that is addressing this challenge. While this hearing is just one element of our review, we will also invite Members and staff, as well as other interested stakeholders, to attend an event later this afternoon here in this hearing room on the balcony to see what some of the organizations are doing to address food waste. That event will begin at approximately 1:30 today.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN
CONGRESS FROM TEXAS

Since I became Chairman of the House Agriculture Committee at the beginning of last year, we've held more than 70 hearings and have invited a broad range of experts, including people in the field, to share their knowledge on everything from the futures markets to farmers' markets.

The Committee doesn't agree all the time on every issue, but one of the reasons we're able to work in a bipartisan manner is that we remember well-meaning people can have different ideas about how to achieve the same goal, whatever the issue may be. Because we have a different way of getting there doesn't mean one of us is wrong—and this is something we're losing sight of in America today. **Good public policy is not a zero-sum game.** If advocates, Members, whoever it may be are close-minded and unopened to compromise, it all but ensures retention of the *status quo* regardless of the issue.

An example of where we are engaging a variety of stakeholders is in this review of food waste. I commend my colleague from Maine, Chellie Pingree, for putting this on the Congressional radar. Today's hearing may be the first time the House Agriculture Committee is publicly engaging on this issue, but it will not be the last.

Forty percent of the food grown in this country is wasted. That amounts to 133 billion pounds of food being wasted. That is billion with a B! Considering we have 45 million people currently receiving food assistance through SNAP, I believe this is a tremendous opportunity for us to take a closer look at our food chain and figure out a way to ensure that food grown in this country reaches the dinner table, not the trashcan.

Speaking 2 weeks ago at a food waste summit, Secretary Vilsack commented that avoiding food waste loss could save U.S. families on average \$1,500 a year, and limiting food waste globally could help prevent hunger and malnourishment in the 825 million to 850 million people worldwide who are not getting adequate food.

Tackling food waste in this country is, and should be a nonpartisan issue that will be most successful by engaging everyone in the food chain, from field to table. It will take the collaboration of all stakeholders to be successful.

As we begin this review, we will undoubtedly identify issues that seem easy to resolve, yet are more complex than they appear. We will likewise identify other issues that have already been addressed, but simply require collaboration and what amounts to a public relations campaign to raise awareness.

Two such issues that Congress has acted upon that we should highlight today are the recently enacted permanent tax deduction for food donations and the Good Samaritan Food Donation Act. The permanent tax deduction for food donations was identified in recent legislation and was enacted as part of the last omnibus.

The second issue is one we hear an awful lot about, yet was addressed years ago by our former colleague and a Vice Chairman of this Committee, the late Bill Emerson. Many businesses, when given the opportunity to donate perfectly safe and wholesome food, are reluctant because of liability concerns. The Bill Emerson Good Samaritan Food Donation Act, enacted in 1996 fully addresses this concern. I wish to place into the record a Memorandum Opinion drafted by the Department of Justice for the USDA General Counsel that not only spells out the direct protection of the Emerson Act, but also describes the preemptive effect on state laws that may not provide the same level of protection.

When we began preparing for this hearing, we reached out to Representative Pingree whom I am happy is here with us today and will shortly offer some introductory comments of her own.

The witnesses that were invited represent a broad range of perspectives and expertise, but in no way represent the entirety of the community that is addressing this challenge. While this hearing is just one element of our review, we will also invite Members and staff, as well as other interested stakeholders to attend an event later this afternoon here in this hearing room on the balcony to see firsthand

what some organizations are doing to address food waste. That event will begin at approximately 1:30 this afternoon.

I will now recognize our Ranking Member, Rep. Peterson, for his opening remarks.

ATTACHMENT

Preemptive Effect of the Bill Emerson Good Samaritan Food Donation Act

The Bill Emerson Good Samaritan Food Donation Act ("Act") preempts state "good Samaritan" statutes that provide less protection than the Act from civil and criminal liability arising from food donated in good faith for distribution to the needy than the Act provides.

March 10, 1997

Memorandum Opinion for General Counsel, Department of Agriculture

You have requested our views on the question whether the Bill Emerson Good Samaritan Food Donation Act (the "Act"), Pub. L. No. 104-210, 110 Stat. 3011 (1996) codified as amended at 42 U.S.C. § 1791 (Supp. II 1996), preempts state statutes that provide less protection from civil and criminal liability arising from food donated in good faith for distribution to the needy. We believe that Congress intended to establish a minimum level of immunity for those engaged in food donation and distribution. Accordingly, we believe that Congress intended to preempt state "good Samaritan" statutes that provide less liability protection than the Act.

I.

In order to "encourage the donation of food and grocery products to nonprofit organizations for distribution to needy individuals," the Bill Emerson Good Samaritan Food Donation Act precludes civil and criminal liability arising from food donated in good faith, except in cases of gross negligence or intentional misconduct. 42 U.S.C. § 1791 [Pub. L. No. 104-210, 110 Stat. at 3011]. It amended and converted to affirmative law the Model Good Samaritan Food Donation Act (the "Model Act"), 42 U.S.C. §§ 12671-12673 (1994), which has been enacted in 1990 to provide states with model language for revising their existing good Samaritan laws.¹ The current Act provides:

(1) **LIABILITY OF PERSON OR GLEANER.**—A person or gleaner shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the person or gleaner donates in good faith to a nonprofit organization for ultimate distribution to needy individuals.

(2) **LIABILITY OF NONPROFIT ORGANIZATION.**—A nonprofit organization shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the nonprofit organization received as a donation in good faith from a person or gleaner for ultimate distribution to needy individuals.

(3) **EXCEPTION.**—Paragraphs (1) and (2) shall not apply to an injury to or death of an ultimate user or recipient of the food or grocery product that results from an act or omission of the person, gleaner, or nonprofit organization, as applicable, constituting gross negligence or intentional misconduct.

42 U.S.C. § 1791(c) [110 Stat. at 3011-12].²

II.

As the Supreme Court has observed, preemption is fundamentally a question of Congressional intent. *See Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 [116 S. Ct.

¹ Every state and the District of Columbia prior to 1990 had enacted some form of statutory protection from liability for food donation and distribution. *See* H.R. Rep. No. 104-661, at 2-3 (1996) (citing "Summary of Good Samaritan Food Donation Statutes" prepared by Winthrop, Stimson, Putnam and Roberts in 1992 for "Share Our Strength," a nonprofit hunger relief organization). These statutes are exceptions to the common law or statutory rule of strict liability for distributing food or any other defective product, the defective aspect of which causes injury. *Id.* The statutes vary considerably, however. Some provide liability only for gross negligence or intentional acts, while others impose liability for negligence. Still others limit liability if the donor reasonably inspects the food at the time of donation and has no actual or constructive knowledge of any defective condition. Only one state has adopted the language in the Model Act. *Id.*

² The Act defines a "gleaner" as "a person who harvests for free distribution to the needy, or for donation to a nonprofit organization for ultimate distribution to the needy, an agricultural crop that has been donated by the owner." 42 U.S.C. § 1791(b)(5) [§ 12672(b)(5)].

2240, 2250] (1996) (“[t]he purpose of Congress is the ultimate touchstone in every pre-emption case”) (quoting *Retail Clerks Int’l Ass’n v. Schermerhorn*, 375 U.S. 96, 103 (1963)). In assessing Congressional intent, the Court has “long presumed that Congress does not cavalierly pre-empt state-law causes of action.” *Id.* In cases where “Congress has ‘legislated . . . in a field which the states have traditionally occupied,’” the Court “start[s] with the assumption that the historic police powers of the states were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress.” *Id.* (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947)). It is with this admonition in mind that we examine the preemptive effect of the Act.

The Supreme Court has identified three ways in which a Federal law may preempt state law.³ First, Congress may preempt state law explicitly in the text of its statute. See *English v. General Elec. Co.*, 496 U.S. 72, 78 (1990).⁴ Second, Congress may preempt state laws implicitly by demonstrating an intent to occupy the field exclusively with Federal regulation. See *Rice*, 331 U.S. at 230. Finally, even where Congress permits concurrent state regulation in a field, such regulation is preempted to the extent it actually conflicts with Federal law. The Supreme Court has found an actual conflict where “compliance with both Federal and state regulations is a physical impossibility for one engaged in interstate commerce,” *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 142–43 (1962), or where state law “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.” *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941).

Although the Act contains no express preemption clause, its purpose is to supersede, at least to a certain extent, state good Samaritan statutes. Thus, the question is to what extent it supersedes those statutes. We believe the Act clearly preempts state good Samaritan statutes to the extent they provide less liability protection than Federal law—for example, to the extent they permit liability based on evidence of negligence—because such laws literally would “stand[] as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.” *Hines*, 312 U.S. at 67. As stated above, the express purpose of the Act is to “encourage the donation of food and grocery products to nonprofit organizations for distribution to needy individuals” by limiting liability for such activities. Unless potential donors and distributors are assured that the Act sets an absolute liability ceiling, they will continue to be deterred by the threat of liability under state law and will not be encouraged by the Act to donate food. Thus, to have any effect at all, the Act must preempt state statutes that provide less liability protection.

The legislative history of the Act confirms this interpretation. As Representative Danner explained when introducing the bill in the House,

the current patchwork of state laws has been cited by many potential donors as the principal reason so much food is thrown away rather than given to food banks and food pantries for distribution to the hungry. . . .

Simply put, we need a reasonable nationwide law that eliminates confusion and forges a stronger alliance between the public and private sectors in this nation. That is exactly what this bill delivers. The [Act] will establish a uniform national law to protect organizations and individuals when they donate food in good faith.

A business should not have to hire a legal team to interpret numerous state laws so that it feels comfortable in contributing food to the hungry.

142 Cong. Rec. 17,066 (1996) [H7479 (daily ed. July 12, 1996)].

The remarks of other Members of Congress also demonstrated an intent to preempt those state good Samaritan statutes that conflict with the Federal standard. See e.g., H.R. Rep. No. 104–661, at 7 (1996) (“The bill would preempt civil and crimi-

³ See generally *Freightliner Corp. v. Myrick*, 514 U.S. 280, 287 [115 S. Ct. 1483, 1487] (1995); *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 516–17 (1992).

⁴ For example, to expressly preempt state regulation on a particular subject, Congress may provide that “[n]o state or political subdivision of a state may establish or continue in effect . . . any requirement—(1) which is different from or in addition to, any requirement applicable under [Federal law] . . . and (2) which relates . . . to any other matter included in a requirement applicable . . . under [Federal law].” 21 U.S.C. § 360k(a) (1994) (Federal Food, Drug, and Cosmetic Act, as amended by the Medical Device Amendments); see also 29 U.S.C. § 1144(a) (1994) (provision in ERISA preempting “any and all state laws insofar as they may now or hereafter relate to any employee benefit plan”). Congress instead may limit the extent to which states may regulate, by providing for example that “[a] state may adopt or continue in force any law, rule, regulation, order, or standard relating to railroad safety until such time as the Secretary has adopted a rule, regulation, order, or standard covering the subject matter of such state requirement.” Federal Railroad Safety Act 45 U.S.C. § 434, repealed by Act of July 5, 1994, Pub. L. No. 103–272 § 7(b), 108 Stat. 1379.

nal liability laws of state and local governments that deal with the donation of food and grocery products to nonprofit organizations.”); 142 Cong. Rec. 21,516 (1996) [S9532 (daily ed. Aug. 2, 1996)] (statement of Sen. Kennedy) (acknowledging that the Act would “diminish the protections afforded by the tort laws”). Indeed, Representative Conyers expressed concern about the intended preemptive effect of the Act:

Although I am supportive of the impetus behind the legislation—encouraging private entities to donate food to nonprofit organizations who distribute food to the needy—I question whether preempting traditional state law prerogatives in this area is desirable . . . [A]ll 50 states have enacted special statutory rights concerning food donations. Not surprisingly, the states have crafted a variety of liability rules—ranging from those who subject all negligent parties to liability, to those who limit liability only to grossly negligent or intentional acts.

Unfortunately, with the adoption of this bill, the House will be seeking to impose a one-size-fits-all legal standard for food donors . . .

142 Cong. Rec. 17,067 (1996) [H7480 (daily ed. July 12, 1996)].

President Clinton also apparently believed that the Act would preempt conflicting state laws. In his signing statement the President observed:

In working with various private sector donors and food banks . . . it has come to light that liability concerns are often an impediment to food recovery and donation efforts. Although many states have enacted their own “Good Samaritan” laws to support food recovery and donation efforts, many businesses have advised that these varying state statutes hinder food donations. This legislation will end the confusion regarding liability for food recovery and donation operations through uniform definitions in one national law.

2 Pub. Papers of William J. Clinton 1737, 1737–38 (1996) [32 Weekly Comp. Pres. Doc. 1943 (Oct. 1, 1996)].

We believe that the legislative history of the Act, together with its express purpose and the context in which it was enacted, indicate that Congress intended to establish a “uniform national law” that displaces conflicting state good Samaritan statutes—*i.e.*, those that provide less liability protection than Federal law. There is an argument that Congress intended to go even further, preempting not only less protective state statutes but all state good Samaritan laws. Although we acknowledge that some parts of the legislative history could be read to support this argument, we find insufficient evidence that Congress intended to preempt the field. “Field preemption” does not seem necessary to achieve the Congressional goals underlying the Act. The Act should have the desired effect of encouraging food donation as long as it assures potential donors that they will not incur liability for conduct above a certain national level of culpability. The existence of state standards that provide even greater protection from liability should not deter food donation; indeed, they may further promote it. Furthermore, as noted above, the Supreme Court is reluctant to construe preemption broadly in areas traditionally regulated by the states.⁵ For these reasons, we decline to interpret the Act to preempt all state good Samaritan statutes. Rather, we construe the Act to preempt only those state good Samaritan statutes that furnish less liability protection than Federal law.

DAWN E. JOHNSEN,

Acting Assistant Attorney General, Office of Legal Counsel.

The CHAIRMAN. I will now recognize our Ranking Member, Mr. Peterson, for any opening remarks that he may have.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Thank you, Mr. Chairman. And welcome to today’s witnesses. And, Congresswoman Pingree, I appreciate your leadership on this issue. Welcome to the Committee.

I am probably not the only one who finds the terms *sell by* and *best by* confusing. This confusion leads to a lot of food waste that we see in this country, and I am glad that we are looking at this issue today.

⁵ See *Medtronic, Inc.*, 518 U.S. at 485 [116 S. Ct. at 2250]; *Rice*, 331 U.S. at 230.

American consumers are increasingly less connected to the farm and to where food comes from. And a lot of people no longer view food as valuable. When I was growing up, my mom used every part of the animal, but that is no longer the case, and food waste has increased.

Producers have done such a good job of creating an abundant food supply that a lot of folks don't think twice about tossing out food that may not look perfect, or has surpassed a best by or sell by date stamped on the box, whatever that means. This is a challenge, but I also think it presents a great opportunity for production agriculture. While many have no problem throwing food away, many Americans are still struggling to feed their families.

There is a role for farmers and ranchers to play in this, and they can and should step up to the plate and help meet these needs.

Again, I am happy that we are beginning to explore this issue, and look forward to a constructive conversation. This is an area that we can work across party lines and forge a diverse coalition to tackle food waste in this country. I look forward to the testimony. And I yield back.

The CHAIRMAN. I thank the gentleman.

The chair would request that other Members submit their opening statements for the record so that our witnesses may begin their testimony, and to ensure there is ample time for questions.

I would like to welcome our first panel to the witness table. The Honorable Chellie Pingree, Congresswoman from the great State of Maine. Ms. Pingree, you can begin when you are ready.

**STATEMENT OF HON. CHELLIE PINGREE, A REPRESENTATIVE
IN CONGRESS FROM MAINE**

Ms. PINGREE. Well, thank you very much, Chairman Conaway, and Ranking Member Peterson. I really appreciate that you are holding this hearing today and giving me the opportunity to say a few words about it. And I particularly appreciate that you remembered to call it the great State of Maine.

Obviously, this is an issue that people have been increasingly concerned about. And I have been very grateful to have a chance to work on it, and as all of you said, work across the aisle and with a whole diverse group of interests that are concerned about the fact that 40 percent of the food, as you mentioned, is wasted in this country. Particularly people on the Agriculture Committee know how much work goes into growing food, how much water is lost in the process of growing food, how long it has to be transported around the country, and just that gives you a sense of how much we are wasting, besides the food, in terms of energy and other resources in doing this.

The other big concern is that we do have 50 million people in this country going hungry. And when there is confusion around date labeling or how food can be disposed of, with the good Samaritan laws that we have talked about, it just makes it that much more difficult for restaurants and retail stores to find out how to make sure that uneaten food and beyond-the-label food gets to those food banks and to those people in need. So that is part of what we are proposing to look at in the bill that we submitted called the Food Recovery Act.

It is wonderful to see that the USDA and the EPA together have announced a food waste reduction goal. They did that last year. And their goal is to reduce food waste by 50 percent by the year 2030. So I have an ambitious goal, but also showing that there are great opportunities there.

I am fortunate enough to serve on the Agricultural Appropriations Subcommittee, so we have been looking for ways to work with them on funding areas that could make a difference in solving this problem, and also work on some of the same things with the FDA.

There is certainly no single way to go about solving this problem, and I know as you dig deeper into it today and you hear from the wonderful panel that you have chosen, you will start to hear that it is something we have to face on all fronts; from helping consumers to understand differently, giving opportunities to farmers who want to make sure food gets into the right hands, and helping retailers in particular and restaurant owners to reduce that waste, or to make sure it goes to the places that we want.

In my own state, we have a supermarket chain that is also committed to zero food waste, which means making sure everything gets sold in the store that possibly can, even if some of it looks a little ugly or misshapen, then making sure it gets to food banks and places where people are in need, and finally making sure that food that can't go anywhere else, either goes to a composting facility or an anaerobic digester, because that is another big issue here is most food waste ends up in municipal landfills. And for those of you who have served on municipal government, you know that is one of the increasing costs. It also produces methane gas which is much more toxic than many of the other gases that we already worry about. Whereas, if it is converted to compost or anaerobic digestion, we are either left with wonderful looking soil, or we are producing energy with that food waste.

Making sure that there are Federal funds available to municipalities who want to do that is another part of this, and something that can certainly be dealt with in a variety of committees.

Just in closing, I want to mention the one thing that Ranking Member Peterson and I were just talking about, and I am sure all of you on the Committee, and most of us have experienced this problem, perhaps in your own household, where you look at a package, it has a label on it, and think, okay, well, this is probably still good, we should eat it. Yet someone else in your household looks at it and says, "Oh, no, no, look at that date, we have to throw it away." We actually submitted a bill last week with Senator Blumenthal about date labeling to try to bring some sensibility into this. And because we hear so much about the domestic disagreements that go on, we thought we should call this the Domestic Harmony Bill, to reduce some of those issues that people face. But basically, manufacturers have joined us, we were endorsed in that bill by Campbell Soup and Nestlé, and a variety of other companies have already come forward because they find it confusing too.

Basically, those labels, for the most part, don't have a uniform or scientific basis. They may represent something to that individual company, but it really doesn't mean you can't eat that food. So our idea is to ask the USDA and the FDA to work together to create a label, one that says expires on, for those foods that really do have

a safety issue, and you should know when it is too late to eat it. And the other one would just say best if used by. So that tells you that that bag of crackers will be best if you eat it by a certain date, but nothing is going to happen to you if you eat it a month later, or maybe even the next season when you return to your summer cabin, or you find it in a box that you never unpacked. Chances are, that is going to be perfectly good food. So we would like to bring some sensibility to that. It would be great for manufacturers, it would take some of the stigma out of how that food gets donated. And, in fact, there are 20 states around the country that prohibit food donations if that date has passed. And if you think about it, we are keeping 20 states away from giving that food to people in need, and it is a completely arbitrary date.

So it seems like that is one of the ones that would be extremely cost-effective. It would create much less waste, something that most of us agree on, and you will find most of the manufacturers and others agree on it as well.

So thank you very much for giving me a moment to open this up today. Thank you for taking on this topic. I look forward to working with you in any way I can. And thank you for giving me a little bit of nostalgia to return to the Committee which I served on in my early days. I truly enjoyed working with all of you and being in this room.

[The prepared statement of Ms. Pingree follows:]

PREPARED STATEMENT OF HON. CHELLIE PINGREE, A REPRESENTATIVE IN CONGRESS
FROM MAINE

I would like to thank Chairman Conaway, Ranking Member Peterson, and Members of the House Committee on Agriculture for holding a hearing on food waste and for inviting me to speak today. As a former Member of the Committee, I am excited to kick off this food waste hearing and discuss why food waste is such a pressing issue.

On one hand, this is a problem that has been getting worse and worse, but has gone largely unnoticed. When I tell people that 40 percent of the food that is produced in this country is wasted, they are usually shocked. As Members of this Committee, you are all aware of the incredible amount of resources and hard work that food production requires. I think you'll agree it's unconscionable that so much food ends up in landfills.

But on the other hand, it's a problem that we've known about at some level for a long time. Doesn't everyone remember your grandmother telling you to clean your plate, and to not waste food?

When good food goes to waste on the farm, it means the resources used to grow that food—fuel, labor and water—are also wasted. When food goes to waste in a local restaurant, it means less revenue for the owner. And wherever and whenever food is wasted, it means less food for the 50 million Americans that are food-insecure.

Recognizing the extent of this problem, USDA and EPA announced the first food waste reduction goal last year—a 50 percent reduction by 2030. As a Member of the Agricultural Appropriations Subcommittee, I asked USDA and EPA leadership a lot of questions about food waste during appropriations hearings this year to see what they already have the authority to do. I look forward to continuing to work with these Federal agencies, as well as the Food and Drug Administration, to support a range of food waste reduction efforts.

There is no single solution to the problem of food waste. And not all of the solutions will be simple or easy. But many—if not most—of the solutions are common-sense proposals that should be things we can all agree on.

Take date labeling, for example. I bet most of you have gotten into an argument with someone at home about whether or not you should throw away some food because the date on the label has passed. It's pretty common. I think it must happen in almost every household in America.

And mostly those arguments come about because date labeling is confusing and inconsistent. I introduced a bill last week that has a pretty simple proposal: create two labels—one that says “expires on” for food that really is unsafe to eat after a certain date, and another that says “best if used by” for everything else. The bill would also make sure that no states or local health departments could ban the donation of perfectly good food, just because the date on the label has passed. This is just one way we can make sure food gets to those who need it most.

Today you will hear from an impressive group of witnesses. As I was getting ready to introduce a comprehensive food waste bill last year, and a food date labeling bill last week, I have relied heavily on the experts you are about to hear from. They have done the research and collected the data to illustrate the extent of food waste in America, and they have excellent proposals on the best ways to address these problems.

Tackling the costly problem of food waste is something that we really can work together on. I am thrilled about the momentum around food waste, both from the private-sector and now here on Capitol Hill. I want to again thank the Committee for helping to start this conversation.

The CHAIRMAN. Well, thank you, ma’am, for being here. I appreciate your comments this morning, and for your leadership and getting this initiative started. And we will look forward to pitching in with you, maybe we shouldn’t say pitching in, but nevertheless, helping with reduction of food waste. So thank you for—

Ms. PINGREE. Be careful about that baseball stuff.

The CHAIRMAN. I got you.

We will now transition to our second panel. Chellie, thank you very much for being with us today. I appreciate it.

I would like to welcome our second panel of witnesses to the table. We have Ms. Dana Gunders, Senior Scientist, Food and Agriculture Program, Natural Resources Defense Council, San Francisco, California. We have Mr. Jesse Fink who is the Managing Director of Mission Point in Norwalk, Connecticut. We have Mr. John Oxford, President and CEO, L&M Companies, Raleigh, North Carolina. We have Ms. Meghan Stasz, Senior Director, Sustainability, Grocery Manufacturers Association here in Washington, D.C. Ms. Diana Aviv, CEO, Feeding America, Chicago, Illinois. And Ms. Emily Broad Leib, the Director, Food Law Policy Clinic, Harvard Law School, Jamaica Plain, Massachusetts.

Everybody found their seats?

All right, Ms. Gunders, if you will begin when you are ready, ma’am.

STATEMENT OF DANA GUNDERS, SENIOR SCIENTIST, FOOD AND AGRICULTURE PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL, SAN FRANCISCO, CA

Ms. GUNDERS. Well thank you very much, Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for inviting me to testify today, and being willing to explore this issue.

My name is Dana Gunders. I am a senior scientist at the Natural Resources Defense Council. I am also the author of a widely cited report on food waste, and a book called the *Waste Free Kitchen Handbook*, which is a consumer guide to wasting less food.

So imagine walking out of the grocery store with five bags of groceries, dropping two in the parking lot, and not bothering to pick them up. It seems crazy, but that is essentially what we are doing today across the country where we are wasting 40 percent of all of our food. We are leaving entire fields unharvested, and eliminating

produce solely for its looks. We are serving massive portions, throwing out food just because it has passed its sell-by date, and eating out instead of what is in our fridge.

Now imagine a farm that covers $\frac{3}{4}$ of the State of California, and uses as much water as California, Ohio, and Texas combined. When you harvest that farm, it is enough food to fill a tractor trailer every 20 seconds, and then it drives all over the country, except instead of going to people to eat it, it goes straight to the landfill. That is essentially what we are doing today. In fact, food is the number one product entering our landfills today.

This is expensive. All told, America spends up to \$218 billion, or 1.3 percent of GDP, each year on wasted food. Beyond money, we are wasting nutrition. More than 1,250 calories per capita every day. That is three times the caloric requirements of the entire food-insecure population of the country.

And we have not always been so wasteful. In the U.S., we waste 50 percent more food per capita than we did in the 1970s. This means that there was once a time when we wasted far less, and, therefore, it gives me hope that we could get there again.

Wasting less food is to the food sector as energy efficiency is to the energy sector. The cheapest, easiest way to meet growing demand. The UN projects increased demand will lead to a 60 percent growth in food production by 2050, and almost $\frac{1}{4}$ of that projected demand could be offset by addressing food waste.

There are far too many causes of food waste to address in just a few short minutes, but it is important to note that wasting food happens to the best of us, as individuals and businesses. We have all had to toss moldy strawberries, or clean out that science experiment in the back of our fridge. And the good news is that unlike many of the thorny issues that I am sure you deal with, this one feels solvable. No one wants to waste food, and people strangely love diving into this topic. I have been amazed at the energy and enthusiasm that people have when they come up to me and tell me that they found a way to use their wrinkled tomatoes in a sauce, or something like that. And because there are direct savings to be had, this enthusiasm has extended to the business and the entrepreneurial communities as well. Even modest savings can make a difference.

I was asked to give an overview of the problem, but in my last minute I would like to suggest at least a few solutions. I would also like to note that the EPA has prioritized prevention solutions and food donation over things like animal feed and composting.

For solutions, first address consumer waste. From the limited information we do have, households appear to be the largest source of food waste. We recently launched a national media campaign with the Ad Council to address this, called Save the Food, with a goal of providing consumers both the inspiration and information to waste less in their homes. If the government were to embrace this campaign and provide additional funding, it could vastly extend the reach and the impact of the campaign.

Second, standardized food date labels, as we have already heard. Because they misinterpret date labels, consumers are unknowingly and unnecessarily tossing perfectly good food. And other witnesses will address this.

Third, reduce waste within Federal Government agencies. How much is the Federal Government spending to buy food that ultimately never gets eaten? Addressing this could both reduce agency costs, while also incubating model solutions that others could follow.

Fourth, address data needs. Right now, there are some very basic questions that we can't answer.

And last, support the Food Recovery Act, introduced by Representative Pingree. It tackles food waste from a variety of angles, and includes solutions for many of the issues discussed in my written testimony.

Wasting less food is something everyone can get behind, and in some cases, there is even money to be saved. I expect, should you pursue solutions to this problem, you will find there is a broad base of support behind you.

Thank you.

[The prepared statement of Ms. Gunders follows:]

PREPARED STATEMENT OF DANA GUNDERS, SENIOR SCIENTIST, FOOD AND AGRICULTURE PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL, SAN FRANCISCO, CA

Good morning, Chairman Conaway, Ranking Member Peterson, and Members of the Committee. Thank you for inviting me to testify today. My name is Dana Gunders, and I am a Senior Scientist at the Natural Resources Defense Council where I lead our work on reducing the amount of food that goes to waste across the country. I'm also the author of the widely-quoted report on food waste, *Wasted: How America is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill* as well as the *Waste Free Kitchen Handbook*, a consumer guide to wasting less food.

Imagine walking out of the grocery store with five bags, dropping two in the parking lot, and not bothering to pick them up. Seems crazy, but that is essentially what is happening across the country today—40 percent of food in the United States today goes uneaten.¹

We are leaving entire fields unharvested, eliminating produce solely for its cosmetics, throwing out food just because its past or even close to its "sell-by" date, inundating restaurant patrons with massive portions, and eating out instead of using what's in our fridge.

Per capita, America wastes more than 1,250 calories every day and 35 pounds of food every month.² As a country, this amounts to up to \$218 billion, or 1.3% of GDP,³ spent each year on wasted food. For a family of four, this means at least \$1500 spent annually on food they never eat.⁴

Beyond money, we are missing an opportunity to provide sustenance and nutrition—just 1/3 of the country's wasted food could provide the caloric equivalent of the

¹K.D. Hall, J. Guo, M. Dore, C.C. Chow, National Institute of Diabetes and Digestive and Kidney Diseases, "The Progressive Increase of Food Waste in America and Its Environmental Impact," *PLoS ONE* 4(11): e7940, 2009. The author confirmed his estimate in communication in 2015. USDA estimates 31%, but that includes only losses at retail and consumer levels. When the full supply chain is considered, the 31% number by USDA essentially corroborates the 40% estimate.

²Buzby, J., et al. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States" USDA Economic Research Service Economic Information Bulletin No. (EIB-121) 39 pp., February 2014 <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib121.aspx>.

³ReFED, "A Roadmap to Reduce U.S. Food Waste by 20 Percent." March 2016. www.refed.com. USDA estimates \$161 billion but does not include the full supply chain and uses 2010 food prices as opposed to 2015.

⁴Buzby, J., et al. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States" USDA Economic Research Service Economic Information Bulletin No. (EIB-121) 39 pp., February 2014 <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib121.aspx>. ReFED's analysis found it to be \$1,800 annually for a household of four.

entire diet for the 48 million food-insecure Americans, if only it could be distributed properly.⁵

Furthermore, we are investing tremendous amounts of resources on this uneaten food. If all of our country's wasted food was grown in one place, this mega-farm would cover roughly 80 million acres, over $\frac{3}{4}$ of the state of California. Growing the food on this wasteful farm would consume all the water used in California, Texas, and Ohio combined. The farm would harvest enough food to fill a 40 ton tractor trailer every 20 seconds. Many of those trailers would travel thousands of miles, distributing food to be kept cold in refrigerators and grocery stores for weeks. But instead of being purchased, prepared, and eaten, this perfectly good food would be loaded onto another line of trucks and hauled to a landfill, where it would emit a harmful stream of greenhouse gases as it decomposes.⁶

In fact, food is the number one contributor to landfills today, more than any other material.

Globally, if food waste were a country, it would use more water than any other country on the planet and rank third in greenhouse gas footprint after China and the U.S.⁷ In America alone, the greenhouse gas footprint is estimated to be equivalent to 33 million cars annually.

There's a clear parallel between wasting less food and energy efficiency. Both food and energy are resource intensive industries that face increasing global demand as a result of population growth and increasing standards of living. At some point, we realized the easiest, cheapest way to meet growing demand for energy was to reduce it in the first place. We are only now starting to realize the same approach is merited for food. Without taking waste reduction into account, the United Nations Food and Agriculture Organization projects that food production will grow 60 percent by 2050 in order to match projected demand.⁸ It's estimated almost $\frac{1}{4}$ of that projected demand could be offset through halving the amount of food that goes to waste.⁹

We have not always been so wasteful. In the U.S., we waste 50 percent more food per capita than we did in the 1970s.¹⁰ This means that there was once a time when we wasted far less, and therefore gives me hope we could waste less today.

To help evaluate solutions, the EPA has established a "food recovery hierarchy." It essentially echoes the traditional "reduce, reuse, recycle" ethic that first and foremost, we should prevent waste from happening in the first place. When that's not possible, we should aim to use surplus to feed those in need. After that animal feed is preferred, and then uses such as composting and anaerobic digestion.

⁵A. Coleman-Jensen, *et al.* "Household Food Security in the United States in 2013" USDA Economic Research Service, Economic Research Report No. (ERR-173) 41 pp, September 2014. This source states that just over 49 million individuals are food-insecure. It would take 32% of total losses and waste reported in Hall, *et al.*, to provide 2,500 kcal/day to that many people, which would equate to a total diet. Of course, distribution challenges would and quality of nutrition are not considered in this back of envelope calculation.

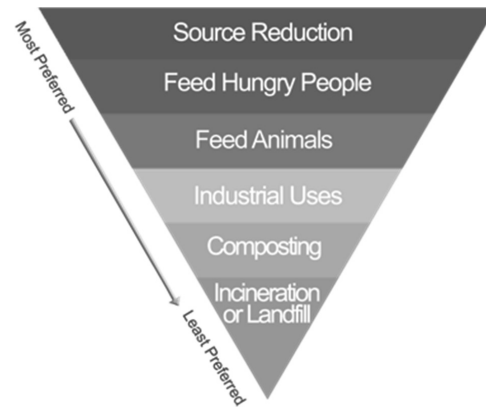
⁶ReFED, "A Roadmap to Reduce U.S. Food Waste by 20 Percent." March 2016. www.refed.com.

⁷United Nations Food and Agriculture Organization, "Food Wastage Footprint: Impacts on Natural Resources" 2013. <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>.

⁸United Nations Food and Agriculture Organization, "World Agriculture Towards 2030/2050, The 2012 Revision." 2012. <http://www.fao.org/docrep/016/ap106e/ap106e.pdf>.

⁹Lipinski, B., *et al.* "Reducing Food Loss and Waste" World Resources Institute. 2013. http://www.wri.org/sites/default/files/reducing_food_loss_and_waste.pdf. Estimate is 22% of projected demand could be offset through halving the amount of food lost or wasted.

¹⁰K.D. Hall, J. Guo, M. Dore, C.C. Chow, National Institute of Diabetes and Digestive and Kidney Diseases, "The Progressive Increase of Food Waste in America and Its Environmental Impact," *PLoS ONE* 4(11): e7940, 2009.

Figure 1: EPA's Food Recovery Hierarchy

Food waste is a complex problem with losses occurring throughout the supply chain from “farm to fork.” There are far too many reasons to cover in a few short minutes. But I expect that over the course of the next week, as you go about your lives, you will notice a few yourselves. Nevertheless, I will try to give you a sense of a few:

Crops are sometimes left unharvested because their appearance does not meet strict quality standards imposed by supermarkets, or because of damage caused by pests, disease, labor shortages, or weather. When market prices are too low, growers may leave some crops in the field if the price will not cover their costs to harvest, wash, sort, package and transport the product.

In catching seafood, there is enough bycatch discarded to provide total yearly protein for 1.6 to two million people.¹¹

Grocery stores are in the challenging position of having to carry a vast array of products at every hour of the day. This high level of inventory—the cost of consumer convenience—inevitably leads to waste.

At restaurants, large portions, large menus, and poor training for food handlers contribute to food waste. All-you-can-eat settings have a particularly egregious amount of waste between consumers taking too much and the challenge of donating excess product that’s been left out.

Last, from the limited data we have, it appears consumers represent the largest portion of food waste of any segment of the supply chain. Poor food management, lack of kitchen knowledge, and larger portions are key contributors there.

A detailed description of many drivers at each stage of the supply chain is included in the report *Wasted* * that is being submitted with this testimony.

Promising Examples

The good news is, unlike many of the thorny issues I’m sure you deal with, this one feels solvable. No one wants to waste food. And somehow, people strangely love diving into this topic. I’ve been amazed at how much energy and enthusiasm people have for telling me about the new way they found to use up wrinkled tomatoes, or the effort they made to wrap up the leftovers from their office lunch.

And because there are direct savings to be had, this enthusiasm has extended to the business and entrepreneurial communities as well. I know subsequent witnesses will cite several examples, but here are a few to consider:

- Still in its relatively early stages, a program by Compass Group called Imperfectly Delicious Produce has sourced almost a million pounds of off-grade product for use in over 24 states.¹²

¹¹D.C. Love, *et al.* “Wasted Seafood in the United States: From Net to Plate”. *Global Environmental Change* 35 (2015) 116–124.

*The report referred to is retained in Committee file. **Editor’s note:** the hyperlink to download the full report is: <https://www.nrdc.org/sites/default/files/wasted-food-IP.pdf>.

¹²Claire Cummings, Bon Appetit Management Company (Compass Subsidiary), e-mail correspondence, January 20, 2016.

- Founded in 1994, Alaska-based nonprofit SeaShare, redistributes bycatch and donations of first rate seafood to food banks. The group had donated more than 200 million seafood servings as of 2015.¹³
- LeanPath software helps cafeteria kitchen managers track waste and regularly sees reductions of over 50 percent in kitchen waste in the first 6 to 12 months of use.¹⁴
- In 2014, Wal-Mart changed its method of addressing egg cartons with single broken eggs and as a result saved over 37 million eggs in the first 8 months after the change.¹⁵
- In England, a 5 year public campaign from 2007–2012 to reduce food waste saw a 21 percent reduction in avoidable household food waste.¹⁶ While this coincided with the recession, they estimate about 60 percent of the reduction was due to the campaign itself.¹⁷

Addressing Data Needs

Right now, we can't answer some basic questions around food waste because we simply don't have the information. While we can infer, we don't have concrete answers to questions such as:

- How much food goes to waste on farms?
- How much food goes to waste in restaurants, particularly on people's plates?
- What is the biggest reason people waste food in their homes?

In fact, I can't even give you a pie chart that accurately breaks down the portions of food waste caused by each sector within the food industry. People have taken stabs at this—most notably, the ReFED report you'll hear about later and, for portions of the supply chain, the USDA—but there is no comprehensive study from farm to fork, and certainly not at the level of detail necessary to really highlight solutions.

There is a particular dearth of data at the farm level, where only a handful of small studies have been conducted, none of which are comprehensive or statistically significant. And yet, anecdotally, those studies are finding that anywhere from one to 30 percent of fresh produce is not leaving the farm or packing shed.

Other areas that are poorly understood are homes and restaurants. USDA conflates these two categories into one, which makes the data so broad that it is helpful in identifying solutions.

You can't manage what you don't measure. Good data enables baselines to be set, measures progress, and informs where programs and projects should be directed in order to have greatest impact. At the business level, data can inform specific changes that lead to less waste.

A key first step in addressing the issue, therefore, is to conduct further study and drive more data collection. Three methods to get started include:

- Direct research or target existing grant funds towards this type of research.
- Encourage measurement and reporting at the municipal levels by establishing a standard protocol for municipalities to follow and then aggregate municipal information at the Federal level. This will help identify the most appropriate Federal legislative solutions.
- A final method to improve data around food waste is to encourage corporate reporting of food waste. Establishing a culture of measurement and reporting among companies will facilitate benchmarking, encourage best practice, and allow leaders to be rewarded.

Addressing Consumer Waste

Engaging the public is critical because (1) much of the waste occurs in households and by consumers in restaurants, and addressing it will require a change in consumer behavior; (2) consumer expectations drive many of the business practices that lead to waste, so changing those expectations could allow social license for businesses to change those practices; and (3) engaging the public can also channel indi-

¹³ SeaShare website, About page: <https://www.seashare.org/about>.

¹⁴ Andrew Shakman, CEO, LeanPath, e-mail correspondence, May 21, 2016.

¹⁵ Anna Vinogradova, Senior Manager of Sustainability, Wal-Mart, e-mail correspondence, March 17, 2016.

¹⁶ WRAP UK, "Household Food and Drink in the UK 2012" <http://www.wrap.org.uk/content/household-food-and-drink-waste-uk-2012>.

¹⁷ Parry, Andrew, "Reduction in household food & drink waste—Estimating the influence of WRAP and its partners." 2011.

viduals to impact change through their work or other spheres of influence, be they restaurant workers or college educators.

The Ad Council and NRDC recently launched the Save the Food national public service campaign with a TV spot, out of home materials (billboards, bus shelters, *etc.*), printing, digital, and a website. However, additional funds could extend the reach of the campaign significantly—to children, to those who speak other languages, and to those who suffer from food insecurity, to name just a few examples. Providing this funding would truly catalyze a shift in the cultural paradigm around food waste. As noted above, a similar campaign in the UK saw avoidable household food waste reduced by 21% in just 5 years.

Educating children is another critical step in creating an engaged public. This can be done through cafeteria programs, curriculum materials, and farm-to-school and school garden programs. In addition, teaching basic cooking skills in schools (K–12 and university) would provide the critical kitchen skills necessary for wasting less food in one's home.

Standardizing food date labels is another opportunity to address consumer household waste.

Standardizing Food Date Labels

Up to 86 percent of consumers at least occasionally discard food prematurely because they misinterpret dates to mean the food is unsafe to eat.¹⁸ This confusion extends to businesses who also wind up discarding perfectly edible food. Refining and standardizing the system of date labeling on food offers one of the most concrete steps to quickly reducing the amount of edible food being thrown out both in households and businesses.

The recent Food Date Labeling Act introduced by Rep. Chellie Pingree (H.R. 5298) does just this. It establishes a nationwide standard for two types of dates—one to indicate the date relates to a product's quality and the other to indicate consuming food after the date may create a risk related to people's safety. Standard phrases and definitions should be established for both. Once created, sale of products after the quality date should be allowed without repercussion.

After this new system is established, a widespread consumer campaign should be conducted to educate consumers on the new standardized system/meaning.

Reducing Farm Losses

For fruits and vegetables, farms merit particular attention because they represent a significant portion of food losses and also an opportunity to provide more healthy food. A key step in this is supporting transportation and value-added processing of imperfect produce, surplus No. 1 product, and byproducts. This can be done through grant set asides, financing, or Federal loan guarantees for equipment.

Encourage Innovation

Encouraging creativity in the entrepreneurial space could add a suite of new solutions to reducing food waste. As this is a relatively new area of focus for the food sector, the timing is opportune. There is now a wonderful amount of energy and excitement to improve upon the current situation. Creating set asides for projects that target food waste reduction in current grant programs, such as USDA's Conservation Innovation Grants or Specialty Crop Block Grants, could help identify new, scalable solutions for the issue. Furthermore, technical assistance and low interest financing could help solutions scale.

Encouraging Diversion of Food Scraps

Directing food scraps to composting, anaerobic digestion, and other organics recycling options creates a number of environmental benefits, including reducing the amount of methane-generating material in landfills, while offering opportunities to create useful soil amendments, recycle nutrients, and extract energy. In addition to driving composting and other organics recycling, policies that disincentivize organics from going to landfills and incineration help drive prevention, partially because they increase awareness of just how much is being thrown out.

Massachusetts, Connecticut, Vermont, Rhode Island, and California currently have some level of ban or restriction on food scraps in landfills or incinerators. Providing infrastructure financing for composting and anaerobic digestion only to states with these types of restrictions or bans would encourage other states to follow suit, while also funding the infrastructure critical to making these bans work.

¹⁸Food Marketing Institute, "U.S. Grocery Shoppers Trends 2014", p. 135.

In Conclusion

Reducing food waste may feel complicated because it touches every part of the food system. However, there are a number of clear steps that can be taken immediately to make a real dent.

The Food Recovery Act introduced by Rep. Chellie Pingree (H.R. 4184) tackles food waste from a variety of angles and includes solutions for many of the issues discussed above. I urge you to consider that legislation as your discussions move forward.

Wasting less food is something everyone can get behind. No one wants to see good food going to waste and, in some cases, there is even money to be saved. I expect should you pursue solutions to this problem, you'll find there is a broad base of support behind you. Furthermore, every bit saved helps, so even some action can be considered successful.

Thank you for the opportunity to discuss this issue with you today.

The CHAIRMAN. Thank you, Ms. Gunders.

Mr. Fink, 5 minutes.

STATEMENT OF JESSE M. FINK, MANAGING DIRECTOR, MISSIONPOINT PARTNERS LLC, NORWALK, CT; ON BEHALF OF REFED: RETHINK FOOD WASTE THROUGH ECONOMICS AND DATA

Mr. FINK. Thank you, Chairman Conaway, Ranking Member Peterson, and the entire House Agriculture Committee, for the opportunity to testify today. I am honored.

My name is Jesse Fink, and I am here as a representative of the ReFED multi-stakeholder food waste initiative. I would like to dedicate my testimony to my wife, Betsy Fink, a farmer, like many Members of Congress who have committed their lives to growing food. I also would like to dedicate the testimony to the 50 million Americans who struggle with hunger. In a resource-endowed country like ours, we should be able to conquer hunger, conserve fresh water, and create new jobs through the new food waste innovation.

My journey to become a food waste evangelist has been long, and shaped by my career as an entrepreneur, a farmer, an investor, and a philanthropist. Twenty years ago, I helped co-found *Priceline.com*, a business model innovation powered by the Internet, linking perishable airline seats with consumers looking for cheaper tickets.

For the past decade, Betsy and I have learned firsthand how challenging and rewarding it is to be a farmer. Similar to Priceline, we see valuable perishable products going to waste.

Two years ago, we asked the team at Mission Point Partners to develop a strategy to address the food waste issue systematically, focusing on the most cost-effective and scalable solutions. The huge gap in data needed for solution identification was apparent. What resulted was the creation of ReFED, a nonprofit initiative that recently released a *Roadmap to Reduce U.S. Food Waste by 20%*, in conjunction with Deloitte Consulting and RRS. ReFED built an advisory council of over 30 leading organizations committed to solving food waste. This includes farmers, manufacturers, retailers, waste haulers, foundations, nonprofits, and government leaders, many who are represented here today.

Addressing food waste can help solve three of our nation's largest problems. First and foremost is hunger. Our research found that solutions feasible today could nearly double the amount of food donated from businesses to hunger relief organizations. Second is eco-

conomic development. Reducing food waste boosts the economy, with a conservative estimate of 15,000 jobs created from innovation. In addition, solutions available today can create \$100 billion of net economic value over the next decade. This includes \$6 billion in annual savings for consumers, \$2 billion in annual potential profit for businesses, and a reduced burden on taxpayers, including lower municipal disposal costs. Much of this economic development will go towards food recovery, composting, and anaerobic digestion infrastructure. Last, is the environment. Commonsense food waste solutions will conserve up to 1.5 percent of our country's fresh water, and this is lost on farms. In addition, reducing food waste will decrease methane emissions from landfills, and increase the health of our soils through composting.

Four crosscutting actions are needed to quickly cut 20 percent of waste, and put the U.S. on track to achieve the broader USDA/EPA goal of a 50 percent food waste reduction by 2030.

First, education. For consumers and for employees of food businesses. Second, innovation. ReFED has an innovation database of over 200 companies. Incubators, accelerators, and large companies are supporting entrepreneurs. There is also an opportunity for government mechanisms to support their ingenuity.

Right here in Washington, D.C., companies like Misfit Juicery, Fruitecycle, and Hungry Harvest are examples of startups that utilize produce that would typically go to waste.

Next is financing. The ReFED *Roadmap* highlights that we need the full spectrum of capital, including philanthropic grants, government incentives, and private investment to accelerate the transition to a low-waste economy. Financing innovation is required to galvanize the \$18 billion needed to achieve a 20 percent reduction in food waste nationwide. There are opportunities to explore public-private partnerships, innovative impact investing to support companies expanding local energy infrastructure or composting facilities, and government funding for research into early-stage technologies.

Last, is policy. Food waste is a complex issue, but three Federal policy priorities stand out as highly impactful and achievable today. First, make it easier for food businesses to donate food for the hungry. Second, standardize date labeling through legislation or voluntary industry action. And finally, strengthen incentives and procurement for food waste solutions at the local level, such as tax incentives for composting and anaerobic digestion.

I would like to close by emphasizing that there is a huge momentum and growing awareness around the issue of food waste. The time is now for our country to embrace this solvable problem, and by working together, turn it into an opportunity. We can take steps to alleviate hunger, boost our economy, and preserve our great natural resources.

I thank you for the opportunity to testify, and I look forward to your questions.

[The prepared statement of Mr. Fink follows:]

PREPARED STATEMENT OF JESSE M. FINK, MANAGING DIRECTOR, MISSIONPOINT PARTNERS LLC, NORWALK, CT; ON BEHALF OF REFED: RETHINK FOOD WASTE THROUGH ECONOMICS AND DATA

Thank you Chairman Conaway, Ranking Member Peterson, and the entire House Agriculture Committee for the opportunity to testify today, I am honored.

My name is Jesse Fink, and I am here as a representative of the ReFED multi-stakeholder food waste initiative. I would like to dedicate my testimony to my wife Betsy Fink, a farmer like many Members of Congress who have committed their lives to growing food. I also would like to dedicate this testimony to the 50 million Americans who struggle with hunger. In a resource endowed country like ours, we should be able to conquer hunger, conserve fresh water, and create new jobs through food waste innovation.

My journey to become a food waste evangelist has been long, and shaped by my career as an entrepreneur, a farmer, an investor, and a philanthropist. Twenty years ago I helped co-found *Priceline.com*, a business model innovation powered by the Internet linking perishable airline seats with consumers looking for cheaper tickets.

For the past decade, Betsy and I have learned first-hand how challenging and rewarding it is to be a farmer. Similar to Priceline, we see valuable, perishable products going to waste. Two years ago we asked the team at MissionPoint Partners to develop a strategy to address the food waste issue systematically, focusing on the most cost effective and scalable solutions. The huge gap in data needed for solution identification was apparent.

What resulted was the creation of ReFED, a nonprofit initiative that recently released a *Roadmap to Reduce U.S. Food Waste by 20%* in conjunction with Deloitte Consulting and RRS. ReFED built an advisory council of over 30 leading organizations committed to solving food waste. This includes farmers, manufacturers, retailers, waste haulers, foundations, nonprofits, and government leaders.

Addressing food waste can help solve three of our nation's largest problems.

- First, and foremost, is **Hunger**—Our research found that solutions feasible today could nearly double the amount of food donated from businesses to hunger relief organizations.
- Second is **Economic Development**—Reducing food waste boosts the economy, with a conservative estimate of over 15,000 jobs created from innovation. In addition, solutions available today can create \$100 billion of net economic value over the next decade. This includes \$6 billion in annual savings for consumers, \$2 billion in increased annual profit potential for businesses, and a reduced burden on taxpayers, including lower municipal disposal costs. Much of this economic development will go towards food recovery, composting, and anaerobic digestion infrastructure.
- Last is the **Environment**—Commonsense food waste solutions will conserve up to 1.5% of our country's freshwater use, or 1.6 trillion gallons per year currently lost on farms. In addition, reducing food waste will decrease methane emissions from landfills and increase the health of our soils through composting.

Four crosscutting actions are needed to quickly cut 20% of waste and put the U.S. on track to achieve the broader USDA/EPA goal of a 50% food waste reduction by 2030.

- First, **Education** for consumers, and employees of food businesses.
- Second, **Innovation**—ReFED has an innovation database of over 200 companies. Incubators, accelerators and large companies are supporting entrepreneurs. There is also an opportunity for government mechanisms to support their ingenuity. Right here in Washington, D.C., companies like Misfit Juicery, Fruitycycle, and Hungry Harvest are examples of start-ups that utilize produce that would typically go to waste.
- Next is, **Financing**—The ReFED *Roadmap* highlights that we need the full spectrum of capital, including philanthropic grants, government incentives, and private investment to accelerate the transition to a low waste economy. Financing innovation is required to galvanize the \$18 billion needed to achieve a 20% reduction in food waste nationwide. There are opportunities to explore public-private partnerships; innovative impact investing to support companies expanding local energy infrastructure or composting facilities; and government funding for research into early stage technologies.
- Last is, **Policy**—Food waste is a complex issue, but three Federal policy priorities stand out as highly impactful and achievable today. First, make it easier

for food businesses to donate food for the hungry. Second, standardize date labeling through legislation or voluntary industry action. Finally, strengthen incentives and procurement for food waste solutions at the local level, such as tax incentives for composting and anaerobic digestion projects to accelerate economic growth.

I would like to close by emphasizing that there is huge momentum and growing awareness around the issue of food waste. The time is now for our country to embrace this solvable problem and, by working together, turn it into an opportunity. We can take steps to alleviate hunger, boost our economy and preserve our great natural resources.

Thank you for the opportunity to testify. I look forward to your questions.

ATTACHMENT 1.

A Roadmap to Reduce U.S. Food Waste by 20 Percent*

ReFED: Rethink Food Waste Through Economics and Data, <http://www.refed.com/>.

ATTACHMENT 2

A Roadmap to Reduce U.S. Food Waste by 20 Percent—Executive Summary

2016

Foreword

The Journey Starts Now

By 2050, it is estimated that the Earth's population will top nine billion. This growing population will undeniably stress our food systems, natural resources, and ecosystems. But consider this: Currently, we waste up to 40% of our food globally. In the United States, this equals roughly 400 pounds annually for every American. Meanwhile, one in seven Americans are food-insecure.

We are grateful to everyone who contributed to the creation of ReFED and this *Roadmap*, especially our philanthropic co-funders and Advisory Council members. We would also like to strongly acknowledge the pioneers in food waste reduction who have dedicated time and great passion to this issue. Many have worked for years at the grassroots, national, and international levels to pave the way for this effort. And we'd like to thank you, the reader, for engaging in this issue. Together, with the steps laid out in this report, we can cut food waste by 20% with actions that are feasible today, which will set us on the path to meet the U.S. Government's target of a 50% reduction in food waste by 2030.

These stunning facts—partnered with seeing waste occur firsthand through our work with our operating farm and the restaurants and grocery stores it services—really brought this issue home for us. This prompted us as philanthropists and a family concerned about healthy communities and ecological sustainability to ask our team to explore the topic of wasted food.

Through our family foundation, we have been focused on solving large-scale environmental issues with market-based solutions since 2001. We started by looking at how funding solutions to climate change, both through grants and impact investments, can play an important role in transitioning our society to a low-carbon economy.

Over the past 15 years, we've seen how climate change and resource utilization are closely linked, and food is one of the most important resources in that equation. This puts food waste squarely at the center of many global challenges. Reducing food waste would have a game-changing impact on natural resources depletion and degradation, food insecurity, national security, and climate change. As one of the largest economies and agricultural producers in the world, we believe the United States has a major role to play in setting an example and contributing to significant food waste reduction.

Last year, we approached like-minded philanthropists to join us in launching ReFED: *"Rethinking Food Waste through Economics and Data: A Roadmap to Reduce Food Waste"* to map a path for action and solutions. We knew from the start that a multi-stakeholder approach was needed so we invited leading food businesses,

*The report referred to is retained in Committee file. **Editor's note:** the hyperlink to download the full report is: https://www.refed.com/downloads/ReFED_Report_2016.pdf.

environmental and hunger organizations, investors, policymakers, and innovators to join the effort.

The economic analysis and research we undertook revealed exciting news: Food waste is a solvable problem. But four priority actions are needed to reach significant reductions. **First**, we must galvanize hundreds of millions of dollars of new catalytic funding. **Second**, policymakers must make pragmatic changes to tax incentives, safety regulations, and permitting procedures to support healthy market solutions. **Third**, America must unleash its spirit of innovation to develop new technology and business-model innovations. **Finally**, a sweeping education and awareness campaign is needed to change behavior both among consumers and employees of food businesses.

This *Roadmap* report is a guide and a call to action for us to work together to solve this problem. Businesses can save money for themselves and their customers. Policymakers can unleash a new wave of local job creation. Foundations can take a major step in addressing environmental issues and hunger. And innovators across all sectors can launch new products, services, and business models. There will be no losers, only winners, as food finds its way to its highest and best use.

The *Roadmap* is just the beginning. In order to succeed, we need to crowdsource even more information and solutions. ReFED has welcomed input at every stage and encourages input now. After reading the *Roadmap*, we encourage you to visit refed.com, dig deeper into our analysis, and send us your ideas and feedback.

This is a defining moment for us all. Let's start the journey now.

Thank you,



BETSY and JESSE FINK,
Trustees,
The Fink Family Foundation.

About the *Roadmap*

The magnitude of the food waste problem is difficult to comprehend. The U.S. spends \$218 billion a year—1.3% of GDP—growing, processing, transporting, and disposing of food that is never eaten. The causes of food waste are diverse, ranging from crops that never get harvested, to food left on overfilled plates, to near-expired milk and stale bread.

ReFED is a coalition of over 30 business, nonprofit, foundation, and government leaders committed to building a different future, where food waste prevention, recovery, and recycling are recognized as an untapped opportunity to create jobs, alleviate hunger, and protect the environment—all while stimulating a new multi-billion dollar market opportunity. ReFED developed *A Roadmap to Reduce U.S. Food Waste* as a data-driven guide to collectively take action to reduce food waste at scale nationwide.

Key Benefits

The *Roadmap* outlines an actionable path to cutting U.S. food waste by over 20%—13 million tons annually—while generating \$100 billion of economic value over the next decade and creating 15,000 new jobs. The *Roadmap* is projected to generate the following benefits:



*Jobs and environmental benefits not included in \$100B calculation. Jobs created is a total number, not annual new jobs. Investment and Economic Value were calculated over a decade.

Call to Action

These benefits are achievable, feasible, and realistic today, but they will not be achieved without a concerted effort. Stakeholders must commit to four levers of action: new *financing* to scale proven solutions, commonsense *policy* change, adoption of emerging *innovations*, and consumer and employee education.

Overall the *Roadmap* will require nearly \$18 billion of new investment over a decade, amounting to less than $\frac{1}{10}$ of a penny for every pound of food waste diverted from landfill. To unlock this financing, \$100 to \$200 million of catalytic financing is needed annually to overcome bottlenecks through flexible grants, impact investments, and low-cost project finance.

The *Roadmap* shows how we can take steps today to cut food waste by 20%, putting the U.S. on a path to achieve the broader national target of a 50% reduction by 2030.

Key Stakeholder Actions

Reaching the goals outlined in the *Roadmap* will require a collaborative effort from organizations throughout the food value chain.



Farmers: Seek to reduce the 10 million tons of unharvested food lost each year by developing secondary markets for **Imperfect Produce** and further leveraging **Value-Added Processing**.



Manufacturers: Reduce inefficiencies in manufacturing processes while collaborating with retailers on **Packaging Adjustments** and **Standardized Date Labeling**.



Restaurants & Foodservice: Save up to \$1.6 billion in food purchasing costs by further adopting **Waste Tracking & Analytics** across all facilities, incorporating Imperfect Produce into menus, and integrating **Smaller Plates** and **Trayless Dining** in all-you-can-eat facilities.



Grocery Retailers: Market discounted **Imperfect Produce**, continue to adopt **Improved Inventory Management** systems and **Spoilage Prevention Packaging**, and collaborate to **Standardize Date Labeling** to benefit consumers.



Federal Government: Create jobs and alleviate hunger by retaining and expanding food **Donation Tax Incentives**, and consider national **Standardized Date Labeling** legislation.



State And Local Government: Continue to support landfill or commercial food waste bans, reduce permitting barriers for **Centralized Compost** and **Anaerobic Digestion (AD)**, and implement consistent rules for **Standardized Donation Regulation** across states.



Foundations & Nonprofits: Support major **Consumer Education Campaigns**, build multi-stakeholder efforts for **Standardized Date Labeling** and employee education on best practices, and fund food donation and recycling infrastructure.



Investors: Provide dedicated funds that offer flexible project finance for **Centralized Compost** and **AD** facilities, as well as early stage and growth equity to scale emerging innovations.

Food Waste Overview

Food waste occurs throughout the supply chain. Upstream, waste begins at farms and food manufacturing businesses, where it is typically left in fields to be tilled over or converted into animal feed.

Yet over 80% of waste occurs downstream within consumer-facing businesses—grocery stores, restaurants, and institutional foodservice—and homes, where current recovery and recycling rates are estimated to be only 10%.

Of the \$218 billion spent each year on food that is never eaten, roughly $\frac{2}{3}$ is spent by consumers. This is due to high volumes of uneaten food, the high cost to purchase food at retail, and the high value of meat—a popular family purchase item. Almost $\frac{4}{5}$ of food waste stems from perishables, primarily fruits and vegetables, because they are inexpensive and quickly go bad.

Key Definition

Food Waste—Any food that is grown and produced for human consumption but ultimately is not eaten.

Economic Analysis

The *Roadmap* analysis included a four-step process: Baseline Definition, Solutions Evaluation, Data Analysis, and Data Validation.

Baseline Definition

Prior estimates of food waste in the U.S. have ranged from 35 million tons (EPA) to 103 million tons (FAO) per year, depending on scope and methodology. ReFED collected one of the broadest sets of data to date to establish a map of where food is wasted.

ReFED determined that the baseline amount of U.S. food waste today is approximately 62.5 million tons annually: 52.4 million tons disposed annually in landfills and incinerators and 10.1 million tons of on-farm waste from unharvested crops and packhouses.

Solutions Evaluation

A wide list of food waste solutions was gathered from stakeholders and narrowed to 27 priority solutions that met criteria around data availability, cost-effectiveness, feasibility, and scalability. ReFED's analysis follows the EPA Food Recovery Hierarchy, which prioritizes prevention, recovery, and then recycling solutions to maximize benefits.

- Prevention keeps waste from occurring in the first place.
- Recovery uses donations from food businesses to feed the hungry.
- Recycling transforms food scraps into value-added products instead of landfilling.

Food Waste Solutions

Type	Category	Priority Food Waste Solutions
Prevention	1. Packaging, Product, and Portions	<ul style="list-style-type: none"> • Standardized Date Labeling • Produce Specifications (Imperfect Produce) • Packaging Adjustments • Spoilage Prevention Packaging • Smaller Plates • Trayless Dining
	2. Operational and Supply Chain Efficiency	<ul style="list-style-type: none"> • Waste Tracking & Analytics • Improved Inventory Management • Cold Chain Management • Manufacturing Line Optimization • Secondary Resellers
	3. Consumer Education	<ul style="list-style-type: none"> • Consumer Education Campaigns
Recovery	4. Donation Policy	<ul style="list-style-type: none"> • Donation Tax Incentives • Standardized Donation Regulation • Donation Liability Education
	5. Donation Infrastructure	<ul style="list-style-type: none"> • Donation Matching Software • Donation Storage & Handling • Donation Transportation • Value-Added Processing
Recycling	6. Agricultural Products	<ul style="list-style-type: none"> • Centralized Composting • Home Composting • Community Composting • Animal Feed
	7. On-site Business Processing	<ul style="list-style-type: none"> • In-Vessel Composting • Commercial Greywater
	8. Energy & Digestate	<ul style="list-style-type: none"> • Centralized Anaerobic Digestion (AD) • WRRF with AD

Data Analysis

The *Roadmap* includes three analyses of the 27 solutions: Marginal Food Waste Abatement Cost Curve, Business Profit Potential, and Non-Financial Impacts.

Marginal Food Waste Abatement Cost Curve (“Cost Curve”)

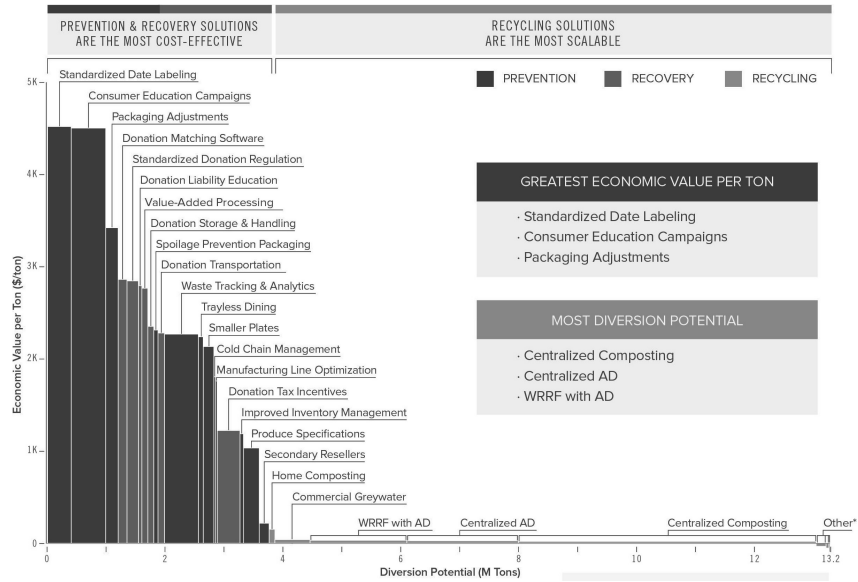
The Cost Curve illustrates an at-a-glance comparison of solutions based on the cost-effectiveness per ton of waste reduced and the scalability of the diversion potential. Cost-effectiveness is based on Economic Value—the annual aggregate financial benefit to society minus all investment and costs.

Implementing the 27 solutions would deliver \$10 billion of annual Economic Value to society. Prevention and recovery are generally magnitudes more cost-effective than recycling, while recycling offers significantly larger diversion potential.

Why is this?

- Prevention and recovery typically require low up-front investment for software upgrades or packaging tweaks, while recycling requires higher up-front investment for large processing and logistics infrastructure.
- Prevention and recovery capture the high value of edible food, while recycling captures inedible food scraps, which are ten to 50 times less valuable.
- Centralized recycling projects achieve scale through large municipal programs that coordinate policy, collection infrastructure, and processing facilities.
- Prevention and recovery solutions are harder to scale because they require more customization and collaboration for each type of food business facility.

Marginal Food Waste Abatement Cost Curve



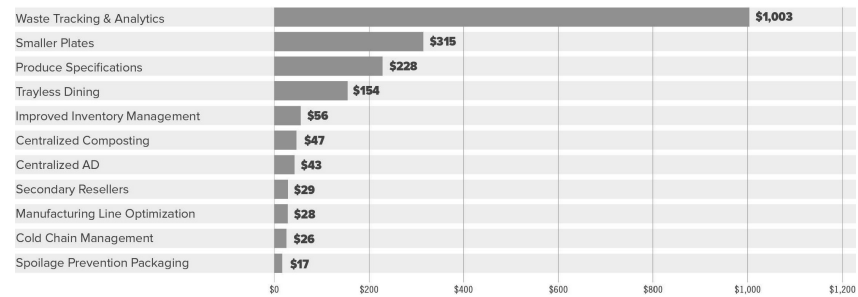
Business Profit Potential

The *Roadmap* estimates that \$1.9 billion of annual Business Profit Potential will come from the revenue and cost savings of implementing 11 of the analyzed solutions.

Restaurants and foodservice facilities can achieve the largest profit opportunity, \$1.6 billion annually. The majority of this profit comes from improved **Waste Tracking & Analytics**, reflecting the operational inefficiencies in food purchasing and kitchen prep. Retailers and recycling developers can capture additional profit by finding new markets for **Imperfect Produce**, integrating **Spoilage Prevention Packaging** into more products, and building out dozens of new **Centralized Composting** and **AD** facilities.

Restaurants and Foodservice Facilities Have The Largest Profit Opportunity—\$1.6 Billion Annually.

Annual Business Profit Potential (\$M)



Non-Financial Impacts

The *Roadmap* focused on four of the many additional benefits of food waste reduction: meals recovered, jobs created, greenhouse gas reductions, and water conservation.



Meals: *1.8 billion meals* can be recovered annually, doubling current donation levels of food at risk of being wasted, primarily through improved tax donation incentives and standardized safe handling regulation for donated food.



Jobs: *15,000 jobs* can be created primarily through processing and applying compost. Other job creation drivers include AD facilities as well as food donation transportation, storage, and handling.



GHGs: Nearly *18 million tons of GHG emissions* may be reduced annually by avoiding agricultural and livestock impacts and reducing methane emissions from scraps disposed in landfills. Solutions that prevent emissions associated with meat production have the largest impact per ton.



Water: *1.6 trillion gallons of water* annually may be able to be conserved—1.5% of annual U.S. freshwater withdrawals—primarily through the prevention of large amounts of water needed for agriculture.

The *Roadmap* would also increase the amount of compost available to enrich our soils, with potential benefits ranging from enhanced water retention to carbon sequestration.

Data Validation

Over 80 experts were interviewed, and all assumptions and methodology were refined by a multi-stakeholder Advisory Council of industry leaders. Future research that integrates system interdependencies can enhance and refine this economic analysis, going forward.

Key Definition

Business Profit Potential is defined as the expected annual profits that the private sector can earn by investing in solutions after adjusting for initial investment required, differentiated costs of capital, and benefits that accrue to nonbusiness stakeholders.

Prevention

Just as it is more cost-effective to prevent a disease than to treat it later, prevention is the most cost-effective strategy to reducing food waste. Prevention solutions have the highest cost-effectiveness and net environmental benefit and hold the potential to divert 2.6 million tons of annual waste.

Common barriers to prevention include misalignment of costs and benefits between stakeholders, lack of consumer demand for waste-saving activities, information gaps, and organizational silos within large food businesses.

Key Findings

- Prevention generally requires low levels of investment for behavior drivers such as packaging changes, software, and marketing.
- At retail, food is worth roughly \$2.50 per pound, magnitudes higher than the value of food as crops on farms or scraps for disposal.
- Prevention, by avoiding unnecessary fertilizer and fuel use on farms, has twice the lifecycle greenhouse gas benefit per ton of food waste diverted compared to recycling.

The three most scalable prevention solutions are:

- **Standardized Date Labeling**, which will help reduce the estimated 20% of consumer food waste caused by confusing “sell by,” “best by,” and “use by” labels that do little to indicate actual food safety risks.
- **Consumer Education Campaigns**, which will raise awareness and educate consumers about ways to save money and prevent waste.
- **Waste Tracking & Analytics** within more restaurants and commercial kitchens, which can track data on wasteful practices to inform behavioral and operational changes.

Recovery

Most people have seen perfectly good food thrown away at a restaurant or dinner party and wished there was a way to get it to people in need. Food recovery captures food donations from businesses and transports it to organizations that feed the hungry, such as food banks and soup kitchens. The *Roadmap* demonstrates that

food recovery can double nationwide, increasing by roughly 1.8 billion meals (1.1 million tons).

Common barriers to food recovery include liability concerns among food businesses, fragmented food safety regulations, a lack of transportation and storage infrastructure capacity, and the extra financial burden associated with food donations. Food recovery networks differ widely by region and geography. Rural communities often face higher transportation costs to reach people in need, while urban communities may lack food sourcing and procurement channels from farms and food manufacturers. California is more likely to have surpluses of fruits and vegetables, while Iowa and Texas are likely to have more grains and meat available.

Key Findings

- The food recovery ecosystem requires three pillars to scale: (1) enabling policy that financially incentivizes donations from businesses while providing standardized food safety regulations, (2) education for businesses on donor liability protections and safe food handling practices, and (3) logistics and infrastructure to transport, process, and distribute excess food.
- Over $\frac{1}{2}$ of the recovery opportunity requires tweaks to legislation regarding tax incentives for business donations and safety regulations for donated food handling.
- Nearly $\frac{1}{2}$ of new recovery potential comes from produce surpluses on farms and at packinghouses, a sector with lower levels of donations today than food retailers.

The three most scalable recovery solutions are:

- **Donation Tax Incentives** that are sustained and expanded to cover all types of food businesses
- **Standardized Donation Regulation** that standardizes enforcement among local and state health departments to provide a common set of rules for large businesses.
- **Donation Matching Software** that connects individual food donors with recipient organizations to reach smaller-scale and perishable food donations.

Recycling

Recycling offers the most scalable path to reducing food waste nationally, enabling 9.5 million tons of annual waste diversion—nearly $\frac{3}{4}$ of the total *Roadmap* potential. Recycling food waste through distributed or centralized processing diverts food scraps from landfills and transforms it into beneficial soil amendments, clean biogas, or animal feed.

Municipalities have increased interest in food waste recycling due to shrinking landfill capacity, improving economics, and greater awareness of positive environmental impacts. Many programs are driven by state and local policies, including landfill bans, renewable energy incentives, and direct economic incentives. Food waste is typically combined with other organics recycling programs such as lawn clippings and manure.

A municipal recycling program depends on three elements to remain healthy: homes and businesses that consistently put food scraps into separate bins, haulers that have enough economic incentive to pick up separate loads of food scraps and deliver them to recycling facilities, and processing facilities that remain profitable through sufficient access to feedstock material, financing, and end markets.

Key Findings

- The Northeast, Northwest, and Midwest generally show the most potential for Economic Value from recycling due to high disposal fees and high compost and energy market prices.
- Including the non-financial job and environmental benefits of large compost and AD projects into municipal cost-benefit analyses will help more projects to be built.
- The top three levers to scale recycling are an increase in landfill disposal costs, efficiencies in hauling and collection through closer siting to urban centers, and denser routes.
- Other key bottlenecks to overcome are high up-front project costs (particularly for AD facilities), low pricing for biogas and compost, assurance of material supply, packaging that contaminates the waste supply, and permitting and siting of processing facilities.

The three most scalable recycling solutions are:

- **Centralized Composting**, which can divert the most waste of any solution but will require an increase in compost demand for agricultural and environmental remediation to match the boost in supply.
- **Centralized Anaerobic Digestion (AD)** that harnesses the energy in food scraps for electricity or transportation and provides a digestate that can enhance soils.
- **Water Resource Recovery Facilities (WRRF) with AD** that utilize existing wastewater infrastructure to accept additional waste delivered by truck or through existing sink disposal pipes.

The Path Ahead

The *Roadmap* demonstrates that achieving a 20% reduction in food waste will generate a positive financial, social, and environmental return on investment. But it will not happen without a concerted effort to galvanize action across four areas: **financing, policy, innovation, and education**. This section outlines the resources needed to enable a 20% reduction, as well as the biggest opportunities to reach a broader 50% goal.

Financing

The *Roadmap* will require \$18 billion of investment to implement within a decade, or roughly \$2 billion per year, which costs less than $\frac{1}{10}$ of a penny per pound of food waste reduced. This one-time investment is projected to yield roughly \$100 billion in societal economic value over the same period. Key financial benefits include a reduction in consumer food bills, increased business profit, and a reduced tax burden for municipalities from lower landfill disposal fees.

Most of this funding will flow naturally from market forces or the extension of existing government programs. The \$18 billion can be broken out into private, philanthropic, and government sources.

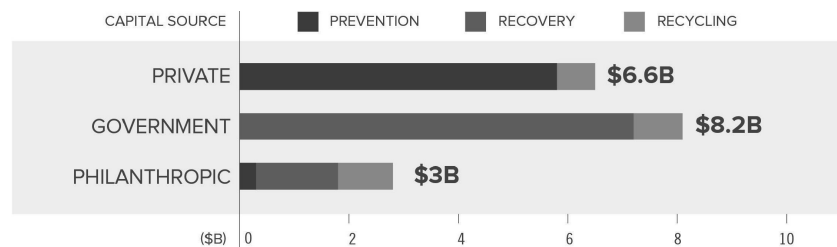
Private investment of \$6.6 billion is expected to flow to opportunities that offer a compelling risk-adjusted return. The largest portion is expected from internal corporate capital expenditures on solutions such as **Secondary Resellers, Packaging Adjustments**, or **Smaller Plates** in dining facilities. Additional private capital is needed for private venture and growth equity to fund and scale businesses that provide emerging solutions. Private project equity and debt will be needed mainly for large recycling facilities.

Government support of \$8.2 billion is expected mainly via existing legislation. Most of this funding consists of tax incentives over the next decades to incentivize food businesses to increase their rate of food donations. In addition, nearly a billion dollars of public project finance is needed to stimulate projects that have a strong social benefit, such as **WRRF with AD** and **Community Composting**.

Finally, philanthropic funding of roughly \$3 billion is needed to fund solutions that create public benefits or have costs and benefits that accrue to different organizations. Of this funding, nearly a billion dollars of impact investments, a major source of catalytic financing, is needed in the form of low-interest loans and high-risk equity investments. Catalytic financing will serve a critical role to overcoming system-level bottlenecks, derisking new innovations or novel projects, overcoming agency problems, and stimulating projects with marginal economics.

Big Financing Opportunity—Form new impact investment funds to galvanize investment in food waste reduction solutions while better incorporating social and environmental benefits into government budgeting.

Financing Needs for 20% Reduction in Food Waste Over a Decade



Policy

The *Roadmap* was framed to focus on solutions that can scale under existing policy or with only minor adjustments. The near-term priority should focus on three policies:

- **Donation Tax Incentives**—Maintain and build upon the recent expansion of permanent Federal food donation tax incentives for all farms and food businesses.
- **Food Donation Regulation**—Create a common standard of safe handling practice regulations among state and local health departments.
- **Recycling Best Practices**—Spread best practices to encourage recycling, such as streamlined permitting of processing facilities, improved enforcement of waste bans, and expanded incentives to encourage diversion of food waste from landfills.

Ten *Roadmap* solutions could be further enhanced through standardized policies at the Federal level.

Big Policy Opportunity—Pass comprehensive Federal food waste legislation that ties together nearly a dozen individual policies and signals a market shift to food businesses.

Innovation

At a high level, there are five priority categories of technology innovation that can drive the greatest impact on food waste reduction:

- Packaging and labeling.
- IT-enabled transportation and storage.
- Logistics software.
- Value-added compost products.
- Distributed recycling solutions

In addition to technology innovations, business-model innovations are needed to develop new ways to share risk across the supply chain in novel ways.

Incremental innovation will lower the cost and improve the performance of many *Roadmap* solutions. Advancements in materials will drive innovation around packaging, while new mobile apps will improve the effectiveness of **Consumer Education Campaigns** and **Donation Matching Software**. Numerous plant-level innovations around **Centralized Composting** and **AD** will drive down processing costs and improve the quality of outputs.

Over $\frac{1}{3}$ of *Roadmap* solutions have the potential for disruptive innovations that can further expand their potential beyond the projections in this report. The food technology innovation sector is growing rapidly, with new food incubators and investment funds emerging each month. By focusing this entrepreneurial energy to solve the biggest barriers inhibiting food waste reductions, top priority innovations can be accelerated into the market.

Big Innovation Opportunity—Build a network of food waste innovation incubators across the U.S. with dedicated funding, mentorship, and facilities to achieve technology and business-model breakthroughs across five priority innovation areas.

Education

The large number of *Roadmap* barriers that are behavioral in nature highlights the need for education, training, and capacity-building to enable change at scale. Behavior change is needed for two core groups: consumers and employees.

Consumer Education Campaigns is one of the most cost-effective and scalable *Roadmap* solutions because it directly influences food purchasing and eating behaviors. Consumer education is also critical to spurring consumer demand for smarter offerings at grocery retailers and restaurants, including **Standardized Date Labeling**, **Spoilage Prevention Packaging**, **Imperfect Produce**, and **Trayless Dining**.

In 2016, NRDC and the Ad Council will launch the first widespread public service campaign promoting food waste awareness, similar to a program launched in the UK in recent years. This campaign must be expanded, measured, and improved over time.

For food businesses, half of ReFED's solutions require hands-on employee involvement in day-to-day execution, which is challenging given high turnover rates in the sector. Training is needed to avoid the removal of product from shelves when it is still safe and edible, identify food that can be donated, and properly source-separate scraps to remove contaminants for recycling. The quickest path to widespread em-

ployee training would be to link a new Food Waste Certification to existing Food Safety Certification programs, as they are already mandatory in many food businesses and are a top priority for management teams.

Big Education Opportunity—Expand emerging efforts to achieve a national social-based marketing campaign that achieves widespread consumer awareness and behavior change in coordination with a national food waste employee certification effort.

How To Take Action

With this report, ReFED calls upon American businesses, nonprofits, government leaders, and investors to rise to the challenge and lead the way in transforming the management of food waste from a burden to a critical resource in solving society's biggest challenges.

*Ready to join the coalition?
Visit **ReFED.com** to download the full report and find more information about top priority opportunities to take action today.*

ATTACHMENT 3

A Roadmap to Reduce U.S. Food Waste by 20 Percent—Key Insights

2016

Key Insights

The *Roadmap to Reduce U.S. Food Waste by 20 Percent* was developed to identify the most cost-effective solutions to cut food waste at scale, to define research priorities, and to spur multi-stakeholder action. To download the full *Roadmap*, join this effort or learn more, go to refed.com.

The Problem

Today, the United States spends over \$218 billion—1.3% of GDP—growing, processing, transporting, and disposing of food that is never eaten.

- Each year, 52.4 million tons of food is sent to landfill, and an additional 10.1 million tons remains unharvested at farms, totaling roughly 63 million tons of annual waste.

The Roadmap

ReFED envisions a future where combating food waste is a core driver of business profits, job creation, hunger relief, and environmental protection.

- The *Roadmap* shows an achievable path to a 20% reduction of food waste within a decade through 27 cost-effective, feasible, and scalable solutions. These solutions would divert 13 million tons from landfills and on-farm losses.
- Implementing the *Roadmap* is projected to generate 15,000 new jobs, double recovered food donations to nonprofits (1.8 billion meals per year), reduce up to 1.5% of freshwater use (1.6 trillion gallons per year), and avoid nearly 18 million tons of greenhouse gas emissions annually.

Economic Value

The Roadmap will require an \$18 billion investment, less than 1/10 of a penny of investment per pound of food waste reduced, which will yield an expected \$100 billion in societal Economic Value over a decade.

- The estimated funding need is \$8 billion of government support via mostly existing legislation, \$7 billion of market-rate private investments, and \$3 billion of philanthropic grants and impact investments.
- Consumers will reap the biggest economic benefit, saving \$5.6 billion annually by cutting unnecessary spending on food that is never eaten.
- Restaurants and foodservice providers could gain the largest business profit improvement—over \$1.6 billion annually—by adopting **Waste Tracking & Analytics, Smaller Plates**, and other solutions.
- Prevention, which avoids unnecessary fertilizer and fuel use on farms, has twice the lifecycle greenhouse gas benefit per ton compared to food recycling. The prevention of unnecessary meat production offers the largest marginal environmental benefit of any category. Recycling reduces landfill methane emissions, while also offering the opportunity to return nutrients to large amounts of degraded soils.

Prevention

Solutions that prevent waste in businesses and homes have the greatest Economic Value per ton and net environmental benefit, diverting 2.6 million tons of annual waste.

- The top three solutions with the greatest Economic Value per ton all utilize prevention: **Standardized Date Labeling, Consumer Education Campaigns, and Packaging Adjustments.**
- Prevention solutions are generally capital-light; they involve changing behaviors through packaging changes, software, and marketing.
- At retail, food is worth roughly \$2.50 per pound, magnitudes higher than the value of food scraps for disposal, providing a large economic driver for prevention efforts.

Recovery

Food recovery can increase by 1.8 billion meals annually, nearly doubling the amount of meals rescued today and diverting 1.1 million tons of waste.

- The food recovery ecosystem requires three pillars to scale: business education, enabling policy, and available and efficient transportation and cold storage.
- Over $\frac{1}{2}$ of the opportunity requires legislation, including the maintenance and expansion of tax incentives for business donations and the standardization of food handling safety regulations.
- Nearly $\frac{1}{2}$ of new recovery potential comes from produce surpluses on farms and at packinghouses, a sector with lower levels of donations today than food retailers.

Recycling

Centralized Composting and Anaerobic Digestion (AD), as well as a smaller set of growing distributed solutions, will enable 9.5 million tons of waste diversion—nearly $\frac{3}{4}$ of the total potential.

- **Centralized Composting** diverts the most waste, adding over 2 million tons of compost annually to fuel growth in the sustainable farming and environmental remediation markets.
- The Northeast, Northwest, and Midwest can generally realize the most Economic Value from recycling due to high landfill disposal fees and high compost and energy market prices.
- Nearly \$3 billion of investment is needed for recycling infrastructure, mainly for compost and AD processing and collection.
- Municipalities can help build more large recycling projects by including non-financial job and environmental benefits into cost-benefit analyses.
- The top levers to scale recycling beyond the *Roadmap* targets are an increase in landfill disposal costs and efficiencies in hauling and collection through closer siting of organics processing to urban centers and optimized collection routes. Other key bottlenecks to overcome are the high cost of project capital, particularly for AD facilities, and low, unstable pricing for biogas and compost.

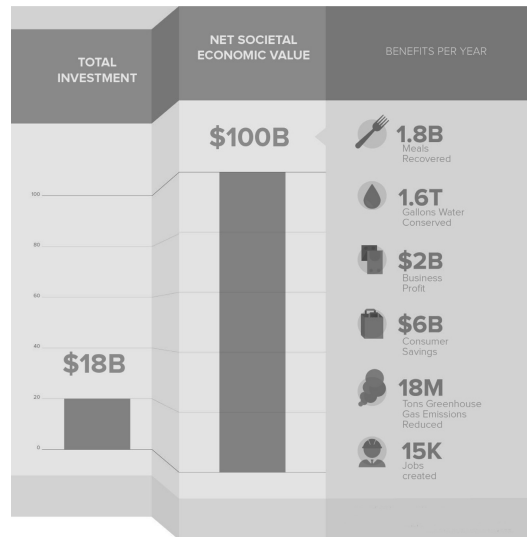
Tools for Action

Four crosscutting actions are needed to quickly cut 20% of waste and put the U.S. on track to achieve a broader 50% food waste reduction goal by 2030.

- **Financing**—To overcome the bottlenecks to unlocking \$18 billion in financing, \$100–\$200 million annually is needed in catalytic grants, innovation investments, and low-cost project finance. Today, few investors or foundations focus explicitly on food waste.
- **Policy**—Commonsense policy adjustments are needed to scale Federal food donation tax incentives, standardize safe handling regulations, and boost recycling infrastructure by expanding state and local incentives and reducing permitting barriers. The biggest lever to accelerate change is comprehensive Federal legislation.
- **Innovation**—Key technology and business-model innovations are needed around packaging and labeling, IT-enabled transportation and storage, logistics software, value-added compost products, and distributed recycling. These could be accelerated through a national network of food waste innovation incubators.
- **Education**—Launching a widespread training effort to change the behavior of food business employees is critical. In addition, campaigns to raise food waste

awareness among consumers need to attract additional funding and support to expand to the scale of anti-littering and anti-smoking efforts.

An \$18 Billion Investment in 27 Solutions To Reduce U.S. Food Waste by 20% Will Yield \$100 Billion in Societal Economic Value Over a Decade.



Jobs and environmental benefits not included in \$100b calculation.

*Jobs created is a total number, not annual new jobs.

Priority Stakeholder Actions At a Glance

These Actions offer the largest opportunities for each stakeholder to contribute to food waste reduction, both through new initiatives and by expanding existing efforts. They are described in more detail throughout the *Roadmap*.



Farmers Seek to reduce the ~10 million tons of cosmetically imperfect or unharvested food lost each year:

- Collaborate with food businesses to further develop a secondary market for **Imperfect Produce**.
- Leverage **Value-Added Processing**, both on farms and through partner organizations, to turn excess produce into soups or shelf-stable products for new profit- or donation-driven businesses.



Manufacturers Expand existing leadership in repurposing excess food through multi-stakeholder collaborations:

- Continue to increase efficiencies through **Manufacturing Line Optimization** to boost profits.
- Collaborate with retailers on **Packaging Adjustments**, **Spoilage Prevention Packaging**, and **Standardized Date Labeling**.



Restaurants & Foodservice Save up to \$1.6 billion in food purchasing costs:

- Further adopt **Waste Tracking & Analytics** across all facilities and incorporate **Imperfect Produce** into menus to reduce costs.
- Shift consumer behavior with **Smaller Plates** and **Trayless Dining** in all-you-can-eat facilities



Grocery Retailers*Increase profits while empowering customers to reduce waste:*

- Boost revenues by marketing discounted **Imperfect Produce**, and continue to reduce costs by adopting **Improved Inventory Management** systems and **Spoilage Prevention Packaging**.
- Collaborate with retailers and manufacturers to adopt **Standardized Date Labeling** to benefit consumers.



Federal Government*Cost-effectively create jobs and alleviate hunger through smart policies:*

- Retain and expand **Donation Tax Incentives** for businesses that donate food.
- Introduce national **Standardized Date Labeling** legislation (if industry does not make voluntary progress).



State And Local Governments*Pursue holistic approaches to waste reduction—incentivizing prevention, recovery, and recycling to reduce the tax burden and address food insecurity:*

- Continue to support organics diversion through use of mandates or landfill or commercial food waste bans, reduce permitting barriers for compost and AD, and enforce programs through incentives or fines.
- Implement **Standardized Donation Regulations** across states.



Foundations*Provide the ~\$300 million needed annually to protect the environment, alleviate hunger, and develop local economies:*

- Provide grant funding for major **Consumer Education Campaigns**, and support multi-stakeholder efforts to enact **Standardized Date Labeling** and educate employees and others on best practices.
- Make grants and impact investments to support food donation and recycling infrastructure, including trucks, cold storage, IT systems, and processing facilities



Investors*Generate returns from an untapped \$2 billion market opportunity:*

- Provide dedicated funds that offer flexible project finance for compost and AD facilities.
- Provide early-stage and growth equity to scale existing business software solutions and innovative technologies that reduce the cost of prevention, recovery, and recycling.

The CHAIRMAN. Thank you, Mr. Fink.
Mr. Oxford, 5 minutes.

STATEMENT OF JOHN OXFORD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, L&M COMPANIES; CHAIRMAN-ELECT, PRODUCE MARKETING ASSOCIATION, RALEIGH, NC

Mr. OXFORD. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify at today's hearing on food waste.

I am John Oxford, President and CEO of L&M Companies, based in Raleigh, North Carolina. Founded in 1964, we are a family agricultural business that grows, markets, and distributes fresh produce. Our products and our crops include a variety of vegetables, potatoes, onions, melons, apples, pears, and more.

In addition to my day job, I am Chairman-elect for the Produce Marketing Association, which is the largest trade association representing companies that market fresh fruits and vegetables. PMA represents more than 2,700 member companies in 45 countries. In the United States, our members throughout the supply chain, from growing, processing, manufacturing, distribution, wholesaling, retail, and food service, handle more than 90 percent of the fresh produce sold to consumers.

My testimony today comes from the perspective of a grower. Dealing with food waste is a complex issue that requires a suite of solutions. When fresh produce goes to waste, we lose the fruits or vegetables as well as the inputs, labor, energy, water, and fertilizer, and if the product has been harvested, cooled, and transported, we lose even more. Thus, the incentive for producers to innovate to minimize waste and loss is significant. Our first preference and our goal is that fresh produce reaches its highest and best use: feeding people.

At L&M, we employ a range of options for produce that is unmarketable as fresh to the consumer. We use several outlets for usable product that is not going to be sold through the intended channel. We regularly try to find alternative markets or uses, and in addition, L&M supplies hundreds of thousands of pounds of healthy, fresh produce every year to charities, including Farmers Feeding Florida, Feeding America, Operation Blessing, and a host of others.

In my role as Chairman-elect of PMA, I am excited about the innovative approaches some of my colleagues are taking to further reduce food waste. In fact, most of you probably have one of the earliest examples of innovation to reduce food waste in your refrigerator at home, and we have provided some at your desks this morning. Baby carrots were born from a concern over food waste. Misshapen carrots were cut and shaped into the now-common baby carrots. In fact, today, baby carrots represent 70 percent of all carrot sales, and according to a recent *Washington Post* article, this effort to reduce waste has actually now doubled carrot consumption.

Recently, Sysco's produce distributor, FreshPoint, introduced its Unusual But Usable program. Though FreshPoint is a food service distributor, it partners with produce growers, taking ugly or imperfect produce that might otherwise go to waste and finds consumers interested in utilizing it. This reduces the waste caused by cosmetic imperfections, and the customers get what they want, often at a more attractive price point.

Red Jacket Orchards in New York, like many apple and pear processors, takes the residual solids left after juicing and makes them into pomace cakes that can be used to feed livestock. This considerably reduces what goes to the landfill, and is an additional supply chain outlet for the grower. We have also supplied some samples of these cakes at your seats today.

In another example, Gill Onions, a California-based producer and processor, installed an advanced energy recovery system that converts 100 percent of its daily onion residuals, such as juice, into renewable energy and cattle feed. Instead of incurring the disposal cost for its more than 300,000 pounds of annual onion waste, Gill

Onions actually saves approximately \$700,000 per year on energy and disposal cost, and has significantly reduced its environmental footprint.

A final area I would like to address is the importance of a strong industry and government partnership to address food waste. Encouraging innovation such as new variety development through traditional modern breeding practices can bring us traits that enhance a crop's ability to withstand stresses due to climate and pests. Likewise, increasing fruits' and vegetables' shelf life, making them more durable for the transportation process, will reduce waste. We also need the Federal Government as a partner in the area of research. USDA's intra- and extramural research programs have done great things for our industry, and specialty crops in general. And last, but certainly not least, we need help on labor issues. Many growers across the U.S. find difficulty finding farm workers, and produce is too often left to rot in the field. I recognize this is a difficult issue to tackle politically, but we need Congress to take action.

Significantly reducing our nation's food waste is a challenging endeavor. L&M and the Produce Marketing Association stand ready to partner with you and my fellow witnesses here today to move us closer to a zero waste system.

Thank you again, Mr. Chairman, for holding this important hearing, and bringing the Committee's attention to these critical issues. [The prepared statement of Mr. Oxford follows:]

PREPARED STATEMENT OF JOHN OXFORD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, L&M COMPANIES; CHAIRMAN-ELECT, PRODUCE MARKETING ASSOCIATION, RALEIGH, NC

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify at today's hearing on food waste. I am John Oxford, President and CEO of L&M Companies founded in 1964 and based in Raleigh, N.C. As a fully integrated, year-round supplier of fresh fruits and vegetables, we grow our own crops and market crops for growers across the United States, Mexico, and Central America. With farms of various sizes across numerous geographies, we carefully map out the volume of product and diversity of our growing locations. This allows us to better control quality and consistency throughout our core product categories: a wide variety of vegetables, potatoes, onions, melons, apples, pears, and cherries. We offer locally grown products and manage locally grown programs as well. And we provide turnkey services for customers, including logistics solutions, consolidation facilities, quality control, food safety, marketing, and a centralized point of contact.

I joined L&M in 2001, and I am proudest of our product quality and service, the strength of our team and growers, and our commitment to our customers' needs.

In addition to my day job, I am Chairman-elect for the Produce Marketing Association, which is the largest trade association representing companies that market fresh fruits and vegetables. PMA represents more than 2,700 member companies in 45 countries. In the United States, our members operate throughout the supply chain from growing to shipping, processing/manufacturing, distribution, wholesaling, retail and foodservice. Collectively, in the United States, our members handle more than 90 percent of the fresh produce sold to domestic U.S. consumers.

Today I am here to talk about food waste, especially produce waste from the perspective of the grower. This is a complex issue that requires a suite of solutions as there is no silver bullet. Fresh produce is one of the top contributors to food waste—from the fields to stores and restaurants to our homes. When fresh produce goes to waste, we lose not only the fruits or vegetables, we also lose all the inputs: labor, energy, water, fertilizer, *etc.*, all the resources that went into producing it. If the product has been harvested, cooled and transported, we lose even more. Thus, the incentive for producers to innovate to minimize waste and loss is significant. Our

first preference, and our goal, is that fresh produce reach its highest and best use: feeding people.

The produce industry, undoubtedly, has a strong role to play, and there is no end point—this is a journey, not a destination. In general, produce waste happens closer to points of production in less-developed countries and closer to points of consumption in developed countries. This highlights the need for comprehensive solutions that include consumers. Our call is to recognize waste points and do what we can to reduce waste.

Almost 2 years ago (June 2013), the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA) launched the U.S. Food Waste Challenge, calling on producers, processors, manufacturers, retailers, communities, and other government agencies to join the effort to reduce, recover, and recycle food waste. The agencies noted that U.S. food waste is estimated at 30 to 40 percent of the food supply. In 2010, they said about 133 billion pounds of food from U.S. retail food stores, restaurants, and homes never made it into people's stomachs. For produce, the numbers are even bleaker with nearly half of the product being wasted worldwide according to a 2011 United Nations Food and Agriculture Organization (FAO) report.

This is not to suggest that producers are not continuously making efforts to reduce waste because we are. Reducing waste on the farm and at the packinghouses makes us better stewards of our land, our communities and better businessmen and women. At L&M we treat produce that is unmarketable as fresh to the consumer in a manner that fits along a continuum of options. These options range from our first choice for the unmarketable as fresh produce, which would be used for juicing or dehydration all the way down to discing crops under to avoid adding any further fixed costs that occur with harvesting and hopefully gaining some residual benefit from any plant mass that we return to the soil. To be clear, discing a crop is not what we want to see happen; as a grower, I hope every fruit, leaf, and stem makes its way to somebody's plate, but we also must be mindful of working efficiently to reduce our use of resources like fuel, labor, and electricity if we know the market opportunity for a crop is not present.

L&M uses several outlets for product that is not going to be sold through the intended channel. We try to find alternative markets/uses and we give it to charitable and food bank organizations. L&M donates hundreds of thousands of pounds of healthful fresh produce every year to charities, including Farmers Feeding Florida (Florida Association of Food Banks), Feeding America, Operation Blessing, and a host of others.

We also move the product into the livestock feed supply chain. And, we compost. All of this is very much in keeping with the EPA's Food Recovery Hierarchy, something we embrace at L&M. From the producer perspective, we typically have a number of options we can pursue well before something has to go to the landfill. But we can do more, and in my role as Chairman-elect for PMA I am excited about the innovative approaches some of my colleagues are taking to further reduce food waste.

In fact, most of you probably have one of the earliest examples of innovation to reduce food waste in your refrigerator at home. Baby carrots were born from a concern about waste. Misshapen carrots—not suitable for the fresh market—were cut and shaped into the now-common baby carrots. Baby carrots are 70% of all carrot sales, according to *The Washington Post*, which noted in a *January 13, 2016* article (<https://www.washingtonpost.com/news/wonk/wp/2016/01/13/no-one-understands-baby-carrots/>): "It also helped lift the industry out of a rut. In 1987 . . . carrot consumption jumped by almost 30 percent, according to data from the USDA. By 1997, the average American was eating roughly 14 pounds of carrots per year, 117 percent more than a decade earlier. The baby carrot doubled carrot consumption."

In another example from the production side, Gill Onions, an onion producer and processor, installed an Advanced Energy Recovery System (AERS) that converts 100% of its daily onion residuals, such as juice, into renewable energy and cattle feed. The 300,000 pounds of onion waste per year would have otherwise cost the company \$400,000 per year in disposal costs. Instead, Gill's Onions saves approximately \$700,000/year on energy costs, disposal costs, and has significantly reduced its environmental footprint.

Recently, FreshPoint (Sysco) introduced its "Unusual But Usable" (<http://www.freshpoint.com/ubu/>) (UBU™) program. Though FreshPoint is a foodservice distributor, it partners with produce growers, taking "ugly" or "imperfect" produce that might otherwise go to waste and finds customers interested in utilizing it. This reduces the waste caused by cosmetic imperfections and the customers get the products they want at a more attractive price point. Our company has also joined in this

growing movement to help reduce food waste by collaborating with a number of retail customers and providing them with misshapen and cosmetically flawed products.

Many apple and pear processors take the residual solids left after juicing and make them into pomace cakes that can be used to feed livestock. This results in a considerable reduction in what goes to the landfill and an additional supply chain outlet for the grower.

Of course, growers are continually looking for efficient and impactful opportunities to supply fruits and vegetables that are not destined for sale to charities. These efforts require significant coordination and collaboration. An exciting and relatively new effort is called "Brighter Bites." The program engages growers, retailers, foodservice distributors, and food banks to use fresh produce that otherwise would go to waste and bring it to school children and their families who might not otherwise be eating fresh produce regularly. This program boosts fruit and vegetable consumption well beyond the free deliveries. At school and during distributions, Brighter Bites teaches families how to make the most of their produce by supporting the implementation of in-class lessons for kids, providing nutrition education handbooks for their parents, and sharing weekly tip sheets and recipes for everyone to try at home together, in English and Spanish. However, whether it be Brighter Bites or other charity supply opportunities, all of this takes significant collaboration and coordination throughout the supply chain—beginning with the producer.

Another way to reduce food waste is by making advances that maintain the marketability of produce from the field to the retailer. Advances in new varieties through traditional and modern breeding practices can bring us traits that enhance a crop's ability to withstand stresses like excessive heat or cold, low water availability or too much water. New varieties can bring traits that increase fruits' and vegetables' shelf life or make them more durable for the bumps and scrapes that can happen during the transportation process. As USDA moves forward with its updates to the biotechnology and other regulations, we hope it considers all that these advances can bring to the food supply chain and refrain from creating barriers and regulatory burdens that could stifle innovation. Through biotech, we may be able to produce varieties with traits that would reduce waste (uniform size/shape, bruise resistance (like the biotech potato)) by having a higher percentage of the crop grown being marketable as fresh. The more we can market, the less we will waste.

Growers also need crop protection tools. Without the ability to defend our crops from pests and diseases, the volume of produce waste would quickly stack up. There has been much media attention to the concerns about pollinators and the potential role of pesticides. In the produce industry, we often require insect pollination for fruit production, we work closely with the beekeepers and want to do all we can to protect bees and other pollinators. At the same time, regulatory decisions that would limit or eliminate access to crop protection tools must balance risk and benefit and should be made on sound science rather than emotion or tangential agendas. As a producer, we are worried about some of the recent messaging from the EPA and the direction the agency has gone in some instances.

A final area I would like to address is the importance of strong industry and government partnership. We certainly need help on labor issues. Many growers in parts of the U.S. have difficulty in finding farm workers and produce is left to rot in the field. I recognize this is a difficult issue to tackle politically, but we need Congress to take action. We also need the Federal Government as a partner in the area of research. USDA's intra- and extra-mural research programs have done great things for our industry and specialty crops in general. Through the Specialty Crop Research Initiative (SCRI) there have been projects that deal with the development of mitigation strategies to specific pests and diseases. For example, the collaborative efforts through the SCRI, the National Institute of Food and Agriculture's Integrated Pest Management Program, and the Agricultural Research Service are helping producers of numerous fruits and vegetables address the significant damage that can be caused by stinkbugs. These insects cause cosmetic- and actual-damage to crops that often results in their diversion from their intended use or total loss. In another example, USDA funds are at work in North Carolina to eradicate Spotted Lanternfly right now. This pest threatens millions in damage to grape, stone fruit, and apple crops, among others. Mitigating pests and diseases reduces damage to crops that can lead unmarketable crops and waste.

Significantly reducing our nation's food waste is a challenging endeavor throughout the supply chain. Fortunately, we have options, and those options and opportunities continue to grow due to the innovating people working in agriculture and this country's entrepreneurial spirit. I am here to share with you that L&M and the Produce Marketing Association stand ready to partner with you and my fellow witnesses here today to move us closer to a zero waste system.

I would like to thank you for your attention today on these critical issues. Thank you again, Mr. Chairman, for holding this important hearing and this Committee's attention to these critical issues. I look forward to working with you in the future.

ATTACHMENT

Baby carrots are not baby carrots

WONKBLOG (<http://www.washingtonpost.com/news/wonk/>)

By Roberto A. Ferdman (<http://www.washingtonpost.com/people/roberto-ferdman>) January 13, 2016



(Source: Flickr/durera_toujours (https://www.flickr.com/photos/derera_toujours/))

Ten years ago, NPR opened a radio news segment with a few words about a man few knew. Mike Yurosek, a carrot farmer from California, had passed away earlier that year. The homage was short—it lasted no more than 30 seconds—but for many of those listening, it must have been eye-opening.

“He actually invented these things,” Stephen Miller, then an obituary writer with the New York Sun said, holding a bag of baby carrots. “Not many people know that baby carrots don’t grow this way.”

There are small carrots, which uppity restaurants serve as appetizers or alongside entrees, that sprout from the ground. But those look like miniature versions of the much larger vegetable. The smooth, snack-sized tubes that have come to define carrot consumption in the United States are something different. They’re milled, sculpted from the rough, soiled, mangled things we call carrots, and they serve as an example, though perhaps not a terribly grave one, of how disconnected we have all become from the production of our food.

“The majority of consumers have no clue what they’re eating or how it’s produced,” said David Just, a professor of behavioral economics at Cornell who studies consumer food choices. “There are so many people who honestly believe there are baby carrot farmers out there who grow these baby carrots that pop out of the ground and are perfectly convenient and smooth.”

It’s hard to overstate the ingenuity of the baby carrot, one of the simplest and yet most influential innovations in vegetable history. The little carrot sculptures (or baby cut carrots, as they’re sometimes called to clarify) not only revived a once-struggling carrot industry, but they also helped both curb waste on the farm and sell the Vitamin A-filled vegetables at the supermarkets.

How Different Fruits and Vegetables Used To Be



<http://www.washingtonpost.com/video/c/embed/3ab3e70c-1c3d-11e6-82c2-a7dcb313287d>.*

Humans have been genetically manipulating fruits and vegetables for thousands of years through selective cultivation. Once we started cultivating wild plants, fruits and vegetables got a lot more colorful. (Daron Taylor, Dani Johnson, Osman Malik/*The Washington Post*)

The Birth of the Baby Carrot

The baby carrot, like so many inventions before it, was birthed by necessity.

In the early 1980s, the carrot business was stagnant and wasteful. Growing seasons were long, and more than half of what farmers grew was ugly and unfit for grocery shelves. But in 1986, Yurosek, itching for a way to make use of all the misshapen carrots, tried something new. Instead of tossing them out, he carved them into something more palatable.

At first, Yurosek used a potato peeler, which didn't quite work because the process was too laborious. But then he bought an industrial green-bean cutter. The machine cut the carrots into uniform 2" pieces, the standard baby carrot size that persists today.

When Mike Yurosek & Sons, Yurosek's now-defunct California company, delivered his next batch to Vons, a local grocery chain, he included a bag of the new creation. He suspected he was on to something but hardly anticipated such an enthusiastic response.

"I said, 'I'm sending you some carrots to see what you think,'" Yurosek recounted in a 2004 interview with USA Today (http://usatoday30.usatoday.com/life/lifestyle/2004-08-11-baby-carrot_x.htm). "Next day they called and said, 'We only want those.'"

The Carrot Savior

Vons wasn't the only one impressed. Grocers, distributors, carrot buyers, and, most importantly, some of Yurosek's most formidable competition took notice. In the years that followed, baby carrots ballooned into big business, nudging the biggest carrot producers in the country to join in and feed the frenzy.

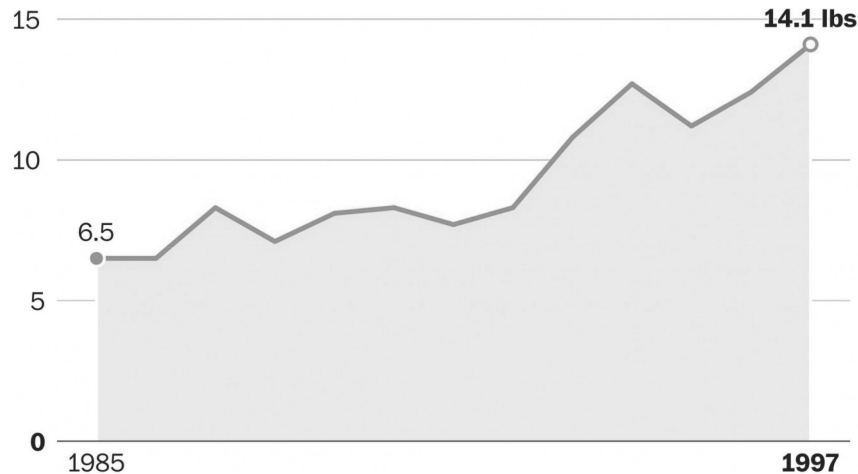
"When we realized this wasn't a fad, this was real, everybody jumped on the bandwagon," Tim McCorkle, director of sales for Bolthouse Farms, one of the nation's leading carrot producers, recalled in a 1998 interview with the *Chicago Sun-Times*. "This idea inverted the whole carrot-growing business."

It also helped lift the industry out of a rut. In 1987, the year after Yurosek's discovery, carrot consumption jumped by almost 30 percent, according to data from the USDA. By 1997, the average American was eating roughly 14 pounds of carrots per year, 117 percent more than a decade earlier. The baby carrot doubled carrot consumption.

* **Editor's note:** the video has been retained in Committee files.

The Baby Carrot Boom

Per Capita Consumption of Carrots in the 12 Years After the Baby Carrot Was Invented



Source: USDA.
WAPO.ST/WONKBLOG.

Today, baby carrots dominate the carrot industry. The packaged orange snacks are now responsible for almost 70 percent of all carrot sales.

A 2007 report (http://www.ers.usda.gov/media/198875/vgs31901_1_.pdf) by the USDA detailed many ways in which baby carrots have morphed the entire carrot landscape in the United States.

The development and rapid consumer acceptance of packaged fresh-cut carrot products during the 1990s has helped the carrot industry evolve from a supplier of low-value bulk products to marketer of relatively upscale value added products . . . fresh-cut carrot products have been the fastest growing segment of the carrot industry since the early 1990s. Within the \$1.3 billion fresh-cut vegetable category, carrots account for the largest share (about half) of supermarket sales, followed distantly by potatoes, celery, and others.

A Too Perfect Snack

Of all the reasons for the rise of America's favorite carrot, there is likely nothing that has propelled baby carrots quite like their convenience. The quality was important to Americans in the 1980s, and it's even more precious now.

As people have found themselves with less time to sit down at restaurants or *even cook at home*, (<http://www.washingtonpost.com/blogs/wonkblog/wp/2015/03/05/the-slow-death-of-the-home-cooked-meal/>) convenience has guided all sorts of decisions about food, especially when there is an option that requires little more than opening a packet.

"Baby carrots have transformed the way people think about carrots," said Just, the behavioral food economist. "The fact that you don't have to peel them, that it involves so little prep, is key."

"Baby carrots are also small enough to fit in your mouth," he added. "They're bite-sized and ready to be eaten. They're easy."

The fuzziness about the baby carrot's origins may have also helped their success.

Recent marketing efforts to further boost their popularity have positioned them as an alternative to junk food, rather than a different way to eat carrots. The packaging was changed to mirror that used for potato chips. "Eat 'Em Like Junk Food," the 2010 TV, print, and digital ads suggested, likening the vegetable vehicle to Doritos and other snack foods.

The campaign was a hit, *boosting sales by 13* (<https://hbr.org/2015/10/the-ceo-of-bolthouse-farms-on-making-carrots-cool>) percent, succeeding, at least in part, by further disassociating baby carrots from their parent.

"This is a common theme now," said Just. "We are more and more disconnected from what we eat."

The truth is that it probably doesn't matter all too much whether someone understands that the smooth little 2" carrot cut-outs they're devouring didn't grow in the ground. Just maintains that knowing this probably wouldn't change anyone's consumption patterns, save perhaps for a small group of hardcore naturalists, since the processing involved is comparatively minimal.

But that doesn't forgive the disconnect. Baby carrots, the ones that don't grow in the ground, have done more than simply boost the sales of carrot producers around the country—they have turned the carrot industry into a much more efficient and much less wasteful endeavor.

At a time when most ugly vegetables *go to waste in the United States*, (https://www.washingtonpost.com/opinions/eat-the-crooked-carrot-save-the-world/2015/03/13/d6899452-c7fb-11e4-a199-6cb5e63819d2_story.html) ugly carrots are carved and sold at a premium. What's more, moving the peeling process to the factory has allowed the carrot industry to make use of the scraps that used to end up in people's trash bins.

"It's something pretty amazing about baby carrots that I'm sure people don't appreciate," Just lamented. "The same people probably think selecting only for regular carrots is more environmentally friendly."

The CHAIRMAN. Thank you, Mr. Oxford.

Ms. Stasz, did I butcher your name badly?

Ms. STASZ. It's Stasz, like Daz.

The CHAIRMAN. Stasz. Stasz. Yes, ma'am. You are recognized for 5 minutes.

STATEMENT OF MEGHAN B. STASZ, SENIOR DIRECTOR, SUSTAINABILITY, GROCERY MANUFACTURERS ASSOCIATION, WASHINGTON, D.C.; ON BEHALF OF FOOD WASTE REDUCTION ALLIANCE

Ms. STASZ. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for giving me the opportunity to participate this morning on this important issue.

My name is Meghan Stasz, I am the Senior Director of Sustainability for the Grocery Manufacturers Association, representing the food, beverage and consumer products industry. Today I am speaking on behalf of the Food Waste Reduction Alliance, an initiative of 30 leading companies, formed in 2011 by GMA, the Food Marketing Institute, and the National Restaurant Association. FWRA commends the Committee for holding this hearing and for your interest in finding solutions.

I will make four key points today. First, we know that food waste is a very real problem, and we have a national goal of halving it by 2030. Everyone has a role to play to get there.

Second, the food industry has already stepped forward and made considerable process. FWRA brings together manufacturers, retailers, and food service companies around three goals: reduce food waste generated, increase food donated, and recycle unavoidable food waste. GMA's members have been working hard to minimize waste as well. In 2014, our companies recycled nearly 94 percent of the food waste from manufacturing, and in 2015, donated over 800 million pounds of food.

Third, we know that more needs to be done, and our industry is taking new steps. GMA and FMI are taking the lead on date labeling and reducing consumer confusion. Date labeling is important and we are addressing it.

But context is important, and that is my fourth point. Date labeling is not the solution to food waste. There is no silver bullet solution here. It needs to be tackled in a range of ways.

And industry can't solve this problem alone. Consumers, as we know, are responsible for 44 percent of the food waste in landfills. If we are going to make a serious dent, we need to help consumers. But reducing food waste is a priority. That is why we created FWRA. Co-chaired by ConAgra, Sodexo, and Wegman's, we have four areas of focus: assessment, best practices, communications, and policy. From this work, we have seen really tremendous innovations. ConAgra, who makes Marie Callender's potpies, found they could change the way they were placing pie dough in a pan, and reduce the amount that needed to be trimmed off the edge. This change saved ConAgra over 230 tons of pie dough in a year. That is food waste that never happened.

Retailers increased food donation by over a billion pounds in the last decade. Kroger is piloting an on-site digester to turn their food waste into energy. Restaurants are working to reduce waste. Yum! Brands alone donated over 184 million pounds of food since 1992.

But let me talk a little bit about date labeling. In January, GMA and FMI's boards resolved to work to address consumer confusion around date labeling, and a working group of 25 companies met here last week. A national standard is crucial to providing consumers with the clarity they need. Forty states have laws regulating date labeling. This patchwork of regulations on some products in some parts of the country is certainly contributing to confusion.

But more will need to be done beyond date labeling. Date labels can tackle only about eight percent of the total overall food waste that is going to landfill. This doesn't mean we should do nothing, but clearly, more solutions are needed.

And businesses are facing challenges to food waste. Supply chain challenges, for example. Food safety is paramount, so if a local food bank has maxed out its refrigeration or refrigerated truck space, often food winds up in a landfill. Similarly, diverting food waste away from landfills requires infrastructure that makes sense. Food waste is heavy, and it is wet, and it requires frequent pickup. If you then have to put that material in a diesel truck and drive it hundreds of miles to the nearest facility, you have lost your environmental benefit. It also has to make business sense. AD can cost millions to build and operate, and composting facilities can face permitting challenges. So even when a company thinks they have found a solution, the composting facility can be shut down, the AD can go out of business, and the business is back to square one.

We are also seeing conflicting regulations at the Federal, state, and municipal level. In some states, food waste is banned from landfill, yet permitting is so onerous that there is no infrastructure.

Finally, consumers: They are the single largest contributor of food waste to landfill. NRDC's terrific Save the Food Campaign is a great example of what we will need to see to really move the needle here.

So in closing, while challenges do exist, the opportunity is enormous, and we really look forward to working with the Committee, our industry partners, and others to reduce food waste all throughout the supply chain.

Thank you for your time.

[The prepared statement of Ms. Stasz follows:]

PREPARED STATEMENT OF MEGHAN B. STASZ, SENIOR DIRECTOR, SUSTAINABILITY,
GROCERY MANUFACTURERS ASSOCIATION, WASHINGTON, D.C.

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for giving me the opportunity to participate in this morning's hearing on this important issue. My name is Meghan Stasz, I am the Senior Director of Sustainability for the Grocery Manufacturers Association (GMA), which represents the food, beverage and consumer products industry. I am speaking today on behalf of the Food Waste Reduction Alliance (FWRA), an initiative of 30 leading companies formed in 2011 by the Grocery Manufacturers Association, the Food Marketing Institute (FMI) and the National Restaurant Association.

The Food Waste Reduction Alliance commends the Committee for holding this hearing and for your interest in finding solutions to this problem.

I would like to make four key points in my testimony today:

First, we know that food waste is a very real problem and the U.S. has announced a national goal of cutting food waste in half by 2030. Everyone has a role to play in reducing food waste and reaching this ambitious national goal.

Second, the food industry has already stepped forward and made considerable progress in reducing food waste. The founding of the Food Waste Reduction Alliance in 2011 brought together manufacturers, retailers, restaurants and food service companies. We work across sectors to identify sources of food waste, increase the amount of food sent to food banks and decrease what is sent to landfills, and help other food companies find ways they can make an impact.

GMA member companies have been working hard to minimize food waste by reducing the amount of waste being sent to landfills and donating food to those in need. In 2014, our companies recycled nearly 94 percent of the food waste generated from manufacturing and in 2015 donated over 800 million pounds of food to food banks.

Third, we know that more needs to be done, and our industry is taking new steps. GMA and FMI are taking the lead on date labeling and reducing consumer confusion that can lead to food waste. Date labeling is important, and we're addressing it.

But context is important, and that's my fourth point: Date labeling is not **The** solution to the food waste issue—in fact, it is estimated to account for some household food waste and therefore a small percentage of total food waste to landfill. There is no silver bullet solution for food waste. It needs to be tackled in a range of ways, and everyone has a role to play.

Industry cannot solve this problem alone. Consumers are responsible for 44% of food waste sent to landfills. If we're going to make a serious dent in food waste as a nation, we need to find ways to help consumers reduce waste.

About Food Waste

Food waste is the single largest category of material in U.S. landfills, according to the U.S. EPA. Experts estimate that as much as 30–40% of the food that's produced in this country is going to waste. This not only represents a waste of the natural resources used to grow and transport that food, but also a missed opportunity to address the challenge of food insecurity in America. Reducing food waste is good for the environment, businesses, and food-insecure Americans.

Food waste is a priority issue to the food industry. That's why we created the cross-industry Food Waste Reduction Alliance (FWRA) in 2011. FWRA is an initiative of GMA, the Food Marketing Institute (representing food retailers), and the National Restaurant Association (representing the foodservice industry) and brings together 30 leading companies from these sectors to address the challenge of food waste in the supply chain. Currently co-chaired by ConAgra Foods, Sodexo, and Wegman's Supermarkets, FWRA has three overall goals: reduce the amount of food waste being generated, recover food to donate to those in need, and recycle unavoidable food waste (such as plate waste or vegetable peels), keeping it out of landfills.

FWRA has four areas of focus: assessment, best practices, communications, and policy. Every other year the member companies of each association are surveyed to get a better understanding on food waste and food donation. The resulting data helps FWRA identify what is working for businesses, what companies are doing to reduce waste, and what barriers are impeding increased donation or diversion from landfill. These assessments help inform partnerships and innovations to reduce waste in this section of the supply chain.

To date, FWRA has released two best practices guides. The guides are written by companies for companies and identify clear methods to get started on a food waste or food donation program or take existing programs to the next level. The most re-

cent guide, released in the fall of 2015, includes over 30 case studies on companies' successes along EPA's food recovery hierarchy.

EPA Food Recovery Hierarchy



Source: U.S. EPA <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>.

Finally, FWRA looks at public policies that might help overcome existing barriers to the Alliance's goals. It works to understand where there are cost effective and environmentally feasible infrastructure options in the U.S. and what existing public policies are in place to have created such an environment. FWRA is also looking at the varying state and municipal regulations to understand the impact on business and to the overall goal of reducing the amount of material sent to landfill.

Let me take a moment to describe the work of each of the sectors in reducing food waste.

Manufacturers and Food Waste

The manufacturing sector is committed to reducing waste. Per the results of the most recent FWRA assessment, manufacturers already recycle nearly 94% of their food waste. Due to the volume and consistency of food waste from manufacturing operations, the vast majority of that waste goes to animal feed, a top-tier solution according to the food recovery hierarchy. For the waste that is left over, the most common barrier to keeping that material out of landfill was lack of infrastructure. Additionally, thanks to best practices and information sharing of the FWRA, manufacturers are partnering with other food businesses to share the cost and operation of solutions like anaerobic digestion (AD), which turns food waste into energy.

Manufacturers are a significant source of food donation. According to Feeding America, the largest network of food banks in the U.S., manufacturers donated 808 million pounds of food in 2015. Manufacturers and food banks are finding new and innovative ways to ensure safe, nutritious food gets to those in need, going beyond traditional donation strategies. For example, Campbell's Soup Company partnered with the Food Bank of South Jersey to turn excess peaches into peach salsa that was made available to food bank customers. ConAgra Foods found a way to rescue trimmed ends from their meat snacks, donating 3.1 million pounds of much needed protein to a local food bank since starting the program in June 2012. DelMonte Foods is partnering with Feeding America's Grocery Program to recover safe, edible and nutritious product. In just the past 3 years, the company converted 3.5 million pounds of what would have been unused food into a viable product for Feeding America. Additionally, food banks and manufacturers are working together to find ways to re-label mislabeled product or package bulk foods or ingredients into appropriate sizes, maintaining food safety and labeling protocols.

Retailers and Food Waste

The food retail industry has made enormous strides over the last decade in reducing the generation of food waste in stores and across the entire distribution chain. Using tools as high-tech as big data analytics and as low-tech as simply dumping out a garbage bin on a tarp and inventorying it, the industry has been able to develop and implement strategies that streamline the supply chain and significantly reduce the amount of waste being created.

Despite these improvements, the retail industry continues to take the issue of food waste very seriously. As it stands today, for every \$1,000 in revenue a store generates almost 10 pounds of food waste is created. Faced with this kind of challenge, the food retail industry is continuing to adopt new strategies for reducing waste and prides itself on approaching the issue pragmatically, with a focus on feeding families. As a case in point, one of the primary food recovery programs for food retailers focuses on donations to food banks. In 2006, food retailers donated 140 million pounds of food to food banks. While impressive, through improved collaborations with our friends at Feeding America, this past year, grocers donated more than 1.4 billion pounds of food. That's a dramatic improvement, but there still remains room for growth.

The food retail industry has also taken a number of steps to address food waste at the consumer level. For example, FMI has partnered with USDA and Cornell University to create the FoodKeeper (<http://www.fmi.org/industry-topics/consumer-affairs/food-keeper-food-storage-database>), an online database and app which began as a brief pamphlet in 1994. Today, FoodKeeper offers consumers guidance on how to safely store and handle thousands of food products to help maximize quality and freshness and minimize unnecessary waste.

Date Labeling

The GMA and FMI Boards of Directors resolved in January 2016 to work together and with other industry groups to reduce consumer confusion around date labeling, a commonly cited contributor to food waste.

I think everyone can agree that there is consumer confusion around date labels such as the "sell by," "use by" and "best by" phrases associated with a date on food or consumer products packaging. These dates and phrases are a communication from the manufacturer to the retailer regarding stocking or rotating products or to the consumer to convey information about the quality of the product. However, research shows that consumers misinterpret these dates and, as a result, may be disposing of food unnecessarily. It can also result in donated food being thrown away due to unintended consequences of state laws or confusion by food bank employees.

GMA and FMI believe a national date labeling standard is crucial in providing consumers with the clarity they need. According to the Harvard Food Law and Policy Clinic, there are currently forty U.S. states with existing laws regulating food date labeling. This patchwork of regulations on some products in some parts of the country certainly contributes to consumer confusion. Codex, the international labeling standards organization, is also working to address this issue and GMA supports a harmonized approach. We are committed to giving consumers the information they need to make informed decisions regarding the safety and quality of the products they purchase and consume.

More will need to be done to solve the food waste challenge beyond date labeling, however. It's estimated that consumers account for 44% of U.S. food waste to landfill. Studies by groups like the Harvard Law and Policy Clinic show that date label confusion is cause for a percentage of that household food waste. This means that date labels can tackle only some consumer waste and so potentially have a small impact on the total overall amount of food waste to landfill in the U.S. Clearly more solutions are needed and there are opportunities for everyone to help us reach the national 50% reduction goal by 2030.

Restaurant Industry and Food Waste

As a founding member of the FWRA and the leading business association for the restaurant and foodservice industry, the National Restaurant Association works to educate its members about the opportunity to protect the environment and help the communities they serve by reducing food waste in their operations.

For example, the NRA's Conserve program is an educational resource that provides operators the tools and information needed to divert food waste from landfills. The Conserve website offers practical advice such as how to start a composting program or how to inventory and track waste, which can lead to cost savings and improve a restaurant's environmental footprint.

Restaurants are also the cornerstones of their communities and have donated nutritious, wholesome food to charities and food banks for decades. For example, Yum!

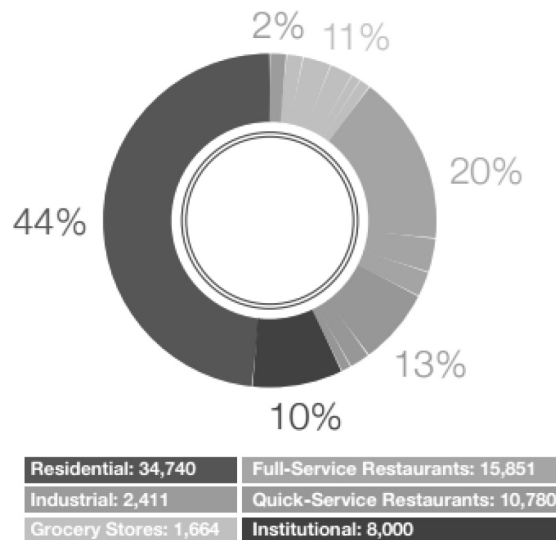
Brands, the parent company of KFC, Pizza Hut, and Taco Bell, has been donating food since 1992. Since that time, they have donated over 184 million pounds of food, estimated to be enough to feed 42,000 families of four, three meals a day, for an entire year. Likewise, Darden Restaurants, which operates brands such as Olive Garden and Longhorn Steakhouse, has donated more than 91 million pounds of food, totaling more than 75 million meals. Starbucks also recently set a goal to rescue 100 percent of food available to donate, including breakfast sandwiches, Paninis, Bistro Boxes and salads from all of their U.S. company-operated stores.

Restaurants are unique in a number of ways that create specific challenges for waste reduction. For example, small businesses dominate the industry with more than seven out of ten eating and drinking establishments being single-unit operations. In addition, the restaurant business model produces relatively low pre-tax profit margins of only four to six percent which means that even small increases in costs for efforts like waste reduction can often be burdensome to these small businesses and independent operators.

Challenges Remain To Reduce Waste

Collecting data is challenging, but experts agree that food waste happens all along the supply chain and for different reasons. A study conducted by the nonprofit BSR for FWRA finds the following breakdown of food waste to landfill in the U.S.: Households account for 44% of the waste, industrial sources like manufacturers is 2%, grocery stores is 11%, full service restaurants is 20%, quick service restaurants is 13%, and institutions such as hospitals and schools accounts for the final 10% of food waste to landfill domestically.

Sources of Food Waste to Landfill in the U.S.



Source: FWRA Tier 1 Assessment, 2012 www.foodwastealliance.org.

In light of these figures, the FWRA works to raise awareness of this issue in the food industry and find solutions that are in-line with the EPA's food recovery hierarchy.

Lack of Infrastructure

Food waste happens all along the supply chain. So there is no silver-bullet solution to this problem. Everyone has a role to play if we are to meet the nation's goal of a 50% reduction of food waste to landfill by 2030. The food industry is addressing food waste in our section of the supply chain via FWRA, contributing new data, sharing best practices, partnering with stakeholders, and identifying effective public policy.

Supply chain challenges are preventing companies from donating food and diverting food waste. FWRA's 2014 Assessment of food manufacturers, retailers, and restaurants found that transportation constraints is a top barrier to donation for 63% of manufacturers and 78% of both small and large restaurant operations.

Another barrier was storage and refrigeration at food banks, which was identified as a major barrier by 50% of manufacturers, 50% of retailers, 67% of small restaurants and 56% of large restaurants. Food safety is paramount and so if a local food bank does not have enough refrigeration space or properly equipped trucks for transporting donated food, that food often ends up discarded.

Similarly, successfully diverting unavoidable waste away from landfill requires infrastructure options that are geographically and operationally feasible. FWRA's 2014 Assessment found that 70% of manufacturers, 92% of retailers, 83% of small restaurants and 100% of large restaurants surveyed listed "insufficient recycling options" as their number one barrier to diverting food waste from landfill. Currently the lack of infrastructure options is a significant hurdle to keeping food waste out of landfill for businesses around the country.

The nearest composting facility or anaerobic digester may be several hundreds of miles away and/or charging significantly more per ton than landfills. Anaerobic digesters can cost millions of dollars to build and operate and composting facilities can face permitting challenges from municipal or state regulators. Also, securing a reliable waste hauler to transport the material, which is very heavy and wet, and pick up that waste can frequently be either cost prohibitive or simply unavailable. Even in places where commercial generators of waste are required by law to divert their food waste away from landfill, sufficient infrastructure options may not exist.

Finally, companies face challenges to food waste reduction that are specific to the type of food business operation. For example, restaurants are unique in a number of ways that create specific challenges for waste reduction. Management and building constraints often exist for restaurants. A restaurant might not own the building in which their restaurant is located and therefore, might not have control over their waste management options. Finally, waste management decisions are often local in nature and the franchisee model of many restaurant companies means that the parent company does not have control over their franchisees' local waste decisions.

Regulatory Challenges

Strengthening understanding of and support for existing regulations that facilitate donation, such as the Bill Emerson Good Samaritan Act, is critical to increasing donation from food businesses. The 2014 FWRA Assessment found that 50% of manufacturers and 67% of retailers and small and large restaurants cited liability concerns as a top reason for not donating more food. The Good Samaritan Act provides those liability protections, but more can be done to educate businesses and state and local stakeholders as to those protections.

Tax incentives for donation help increase donations further and more can be done here as well. We were pleased that Congress recently signed into law the PATH Act, which expands the food donation tax deduction that allows companies to take an enhanced deduction when donating food. This expanded provision will also encourage more businesses, especially small businesses, to donate to those in need by making the tax deduction permanently available for non-C corporations.

Conflicting regulations at the Federal, state, and municipal level hinders successful food waste reduction and donation. In the FWRA 2014 Assessment, 50% of manufacturers and 56% of small and large restaurant companies identified regulation as a top barrier to donating more food. These regulations can often have unintended consequences. For example, some U.S. states restrict the sale or donation of food after its quality date, which can result in safe, nutritious food being sent to landfill. In other states, food waste is banned from landfill, yet existing permitting at the county or municipal level for compost or anaerobic digestion facilities is so onerous that infrastructure does not exist.

Role of Consumers

Per the FWRA study by the nonprofit BSR, consumers account for 44% of the food waste sent to landfill in the U.S., making this group the single largest contributor. The food industry is dedicated to reducing waste in our operations and finding new opportunities for donation, but the challenge of in-home food waste remains. This is not a challenge industry can solve on its own. Efforts such as streamlining date labeling will help, but much more will need to be done to really address this category of waste. One of the challenges is lack of consumer data. What makes up consumer's food waste and what drives that group to dispose of food or how those behaviors might differ by household size, age, or geographic location (urban, suburban, rural) is unknown. More information is needed to identify the causes of household food waste and therefore the most effective solutions.

Questions to Consider

The food industry is a leader in reducing food waste sent to landfill and we take our role in working toward meeting the U.S.'s 50% reduction goal seriously. Based on this expertise, some common questions arise for the Committee to consider:

How do we better coordinate relevant agencies of jurisdiction?

The food supply chain is a complex system. The U.S. is a global leader in food safety and supply chain management, providing consumers with affordable, nutritious products at an incredible scale. This complex and successful system, however, means that many agencies and stakeholders are involved or have jurisdiction over the myriad parts of the supply chain where food waste or food donation occur. Better coordinating these agencies at the Federal, state, and local level will help develop even stronger donation programs and infrastructure options.

What policies are working?

FWRA is working to understand where in the U.S. there is a range of infrastructure options for commercial generators of food waste and the reasons for that infrastructure. Identifying what public policies are working at all levels of government will help all those involved in this effort support and replicate those policies in other parts of the country. As mentioned previously, there is no silver bullet and effective solutions vary even from business to business, but identifying what policies levers can be pulled to encourage innovation and find value in what was considered waste is a win for the environment, society, and business.

How do we improve infrastructure options?

For businesses, food waste often winds up in a landfill because there is no alternative or existing alternatives are environmentally or financially prohibitive. Encouraging entrepreneurs to find solutions to food waste or expand successful businesses addressing this challenge will benefit all actors in the food supply chain. At the FMI-GMA Global Sustainability Summit in 2015, the associations partnered with USDA to host a Food Waste Start Up Challenge. That event showcased six entrepreneurs, selected by a panel of experts, with businesses addressing waste via methods ranging from apps that suggest recipes for leftovers to new ways to sell "ugly" produce to composting innovations. As interest in and awareness of this issue grows, so will the power of innovation. We can work together to support these innovative solutions as well as traditional methods of diversion like composting and AD.

How do we educate consumers?

As referenced earlier, consumers are the single largest contributor of food waste to landfill in the U.S. Educating consumers about the issue of food waste, their role, and what they can do at home to reduce waste and save money will take cooperative and sustained efforts from a range of partners. The Natural Resource Defense Council's Save the Food campaign is an excellent example of an existing effort that can make a difference in consumer awareness and behavior. More efforts like these are needed to truly move the needle on household food waste.

While challenges do exist, the opportunity presented by food waste reduction to lessen our environmental footprint and help address hunger is enormous. We look forward to working with the Committee, our industry partners, and others to take advantage of that opportunity and work to reduce food waste throughout the food industry.

The CHAIRMAN. Thank you, Ms. Stasz.
Ms. Aviv, 5 minutes.

STATEMENT OF DIANA AVIV, CHIEF EXECUTIVE OFFICER, FEEDING AMERICA, CHICAGO, IL

Ms. AVIV. Mr. Chairman, Ranking Member Peterson, and Members of the Committee, I am honored to testify before you today.

Each year we waste 70 billion pounds of food suitable for donation. At the same time, people in every community across our nation struggle with food insecurity. To help end hunger, Feeding America works with 198 food banks, 60,000 local food agencies, and 148 corporate partners. Together, we provide 4.5 billion pounds of food to more than 46 million Americans each year, including 12 million children and seven million seniors.

Of the food we distribute, more than $\frac{1}{2}$ of it, which is about 2.6 billion pounds, would otherwise go to landfill. And yet this still does not meet the need. Significant gaps remain between the food low-income people need, and the resources that they have to buy it. Diverting excess food to donation provides a triple benefit. It reduces hunger, it protects our environment, and it helps businesses with sustainability.

But perishable food must move safely and quickly from the donor to the people who need it. Doing so requires innovative practices, technological knowhow, as well as costly physical infrastructure, like refrigerated trucks and cold storage capacity.

I want to share with you two examples of innovative platforms that we have developed to divert more excess food to donation. Produce Matchmaker is an online portal and ordering system that helps produce donors connect with food banks. It is available 24 hours a day, and it allows food banks to review offers and accept donations in real time, moving produce to hungry families more quickly. Food banks can order produce donations by the pallet, rather than the truckload. This saves transportation costs and allows cost-effective rescue of smaller amounts of produce. Produce Matchmaker is already being used by more than 150 food banks and state associations in Fiscal Year 2016, and connected 125 million pounds of produce with food banks across 40 states. It will help us recover and distribute significant amounts of produce that is currently wasted.

MealConnect is our new online platform to facilitate the easy, safe, and fast donation of fresh food from grocery and convenience stores and food service locations. Donors engage online when they have extra product to donate, and are matched to their local food bank. It is the only donation-matching software that fully vets both donors and recipients to ensure that proper food safety protocols are followed throughout the process. Using MealConnect on a smartphone or PC simplifies the logistics of matching excess food with a nearby pantry that can accept it. This is local food rescue in the sharing economy. MealConnect is enabling Starbucks to partner with Feeding America to launch FoodShare, which will provide an additional 50 million meals over the next 5 years as the program rolls out to 7,600 Starbucks stores across the U.S.

But Produce Matchmaker and MealConnect won't solve the problem alone. Additional investment in technology and physical infrastructure are needed.

The improvement to the enhanced tax deduction for donated food enacted last December will also have a significant impact on food recovery. By expanding the deduction to include farmers and growers, and making it permanent for all businesses, we expect that nearly one billion additional meals that would have been wasted, now will be donated. Thanks to you and your colleagues for passing this critical legislation. Without it, we would be worse off.

To continue increasing food recovery, additional investments to identify and scale promising program models are definitely required. Policy changes such as standardizing date labels on food, and providing USDA grants to small businesses and nonprofits to facilitate food recovery would also have a significant impact. As you examine this critical issue and begin preparing for the next farm

bill, we stand ready to work with you. I encourage you also to visit your local food bank to learn about food recovery within your district.

And thank you very much for the opportunity to testify.
[The prepared statement of Ms. Aviv follows:]

PREPARED STATEMENT OF DIANA AVIV, CHIEF EXECUTIVE OFFICER, FEEDING AMERICA, CHICAGO, IL

Mr. Chairman, Ranking Member Peterson, and Members of the Committee, it is an honor to be invited to testify before you today and submit testimony for the record on the issue of food waste. Food waste is a serious problem in America, with 70 billion pounds of food wasted each year across the food industry, a number that climbs to 133 billion pounds once consumer waste is included in that figure.¹ I commend the Committee for focusing on this important issue and am honored to discuss how the Feeding America network safely rescues over 2.6 billion pounds of food a year to feed those needing food assistance.

The amount of food wasted in America each year is staggering. At the same time 48 million Americans—one in seven people in across our country—are food-insecure.² Recovering excess food that would otherwise be wasted for donation is a national imperative. It is also provides a triple benefit reducing hunger, protecting our environment and helping businesses meet sustainability goals. Feeding America works with our network of 198 food bank members, their 60,000 local food agencies, and 148 national corporate partners to provide 4.5 billion pounds of food, or 3.7 billion meals each year, and food recovery is an essential part of our work. More than half of the food we distribute, over 2.6 billion pounds in 2015, would otherwise have gone to waste streams or landfill.

The food our network distributes comes from a variety of sources, including Federal nutrition programs like The Emergency Food Assistance Program (TEFAP) and the Commodity Supplemental Food Program (CSFP), as well as from food rescued from manufacturing, retail, food service, and farmers and growers.

In Feeding America's Fiscal Year 2015, the 4.5 billion pounds of food distributed by our network came from:

- 17% Federal Commodities (TEFAP and CSFP).
- 33% Retail Food Donations.
- 21% Manufacturing Donations.
- 16% Fresh Produce Donations and Purchases.
- 13% Other Purchased Food.

Increasing the amount of excess food diverted from waste to donation must be a national priority. The stakes could not be higher. According to research conducted by Feeding America, there is a significant meal gap, or difference between the food low-income people need and the resources they have to buy that food. *Map the Meal Gap 2016*³ shows that there are over eight billion meals missing from the tables of low income Americans per year. Juxtapose that need against the 70 billion pounds of food wasted each year from farm to consumer facing businesses like supermarkets and restaurants and it is clear that diverting food from waste to donation is both a national imperative and a critical resource in the fight against hunger that we need to fully utilize.

While one might assume that food insecurity is decreasing significantly as the economy continues to recover and national unemployment has decreased to about five percent, this is not the case and millions of families continue to struggle to get back on their feet in the wake of the recession. The Bureau of Labor Statistic's broader alternative measure of unemployment, the U-6, also includes people working part-time for economic reasons and those marginally attached to the workforce. It reflects a more comprehensive picture of the employment environment facing

¹Buzby, Jean C., Wells, Hodan F. and Hyman, Jeffrey. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States*. USDA Economic Research Service, February 2014.

²Jensen, A., Rabbitt, M., Gregory, C., Singh, A. *Household Food Insecurity in the United States in 2014*. USDA Economic Research Service, September 2015.

³*Map the Meal Gap* looks at food insecurity by county across America and the amount of meals missing from food-insecure Americans households.

many low-income workers and remains at about 9.7 percent.⁴ Many American workers are working part-time due to limited hours offered by employers, or due to health, dependent care, or other challenges that make full time employment difficult. Numerous others are working full-time but simply not earning a high enough wage to meet the needs of their family. As a result, for many people work does not provide protection from poverty and food insecurity. In fact, research shows⁵ that 40 percent of Americans will spend at least 1 year in poverty between the ages of 25 and 60. When those experiencing at least 1 year in near poverty, with incomes below 150 percent of the poverty line which is \$36, 450 for a family of four, are factored in, that number climbs to a shocking 54 percent. While conventional wisdom is that poverty impacts a small number of people who are impoverished for many years, the reality is that a majority of Americans experience poverty or near poverty over the course of their working lives, often due to circumstances such as job loss, inadequate hours, divorce or health issues.⁶

The people Feeding America serves consistently identify a lack of funds to meet basic household needs, including adequate amounts of nutritious food, which underscores how important it is to recovery more of the 40 percent of food wasted each year. Feeding America's quadrennial study of the people utilizing charitable food assistance, *Hunger in America 2014*, reveals that about $\frac{2}{3}$ of the people our food banks and their local agencies serve are making impossible trade-offs between paying for food and other necessities like rent, transportation, health care and utilities. According to the research, 69 percent of client households had to choose between food and utilities, 66 percent had to choose between food and medical care, and 57 percent had to choose between food and housing.⁷ These dilemmas can put households in the position of choosing between competing necessities making it challenging to meet urgent needs, much less get back on their feet and achieve financial stability.

Feeding America is committed to increasing the amount of food we safely rescue so that we can provide additional healthy meals to help struggling Americans fill the meal gap. When Feeding America began 37 years ago, its focus was on rescuing excess, shelf stable food from food manufacturers and retailers. Over the years, our rescue programs have expanded to include perishable food donated from retailers, restaurants and food service as well as from farmers and growers. In fact, more than $\frac{1}{2}$ —52 percent—of the food we distribute is perishable. While perishable food, which includes items like milk, eggs, protein, fruits and vegetables is highly sought after by our food banks and the people they serve, it also entails more challenges than shelf-stable food and is more expensive to handle. Considerable investment in physical infrastructure such as refrigerated trucks, cold-storage capacity and sophisticated logistics is required to ensure that it can be distributed quickly and safely.

Much of the food that is wasted every year is highly perishable food, including fresh produce that does not get harvested or make it to market, as well as food at retail and food service establishments that cannot be connected with people in need before it expires. Distributing perishable food is essentially a race against the clock to get the food from the donor to the people who need it. Unlike with shelf-stable goods, perishable foods have a more limited shelf life. Ensuring that donors can connect quickly with food banks and agencies who can safely distribute that food to the people who need it before it expires requires both innovation in new technology and processes to increase efficiencies, as well as investments in physical infrastructure and transportation. Thanks to the generosity of our corporate partners, Feeding America has invested extensively in strengthening our food banks' ability to recover and distribute perishable food, but we know that additional investment is needed, especially at the agency level.

To overcome some of these barriers and capture excess perishable food, Feeding America has partnered with the food industry to develop and implement innovative technology platforms and pilot programs. The pilots reinforced the need for funding and infrastructure to store and transport fresh produce and how a lack of funding can limit rescue opportunities. Several years ago, we partnered with Seneca Foods to capture sweet corn from fields in Minnesota that is not harvested. Several large food processing companies also assisted by providing equipment to harvest and cool the corn. The opportunity was significant—over half a million pounds of sweet corn.

⁴Bureau of Labor Statistics Alternative Measures of Labor Underutilization; <http://www.bls.gov/news.release/empst.t15.htm>.

⁵Rank, Mark Robert, Hirschl, Thomas A. and Foster, Kirk A. *Chasing the American Dream: Understanding What Shapes Our Fortunes*. Oxford University Press, 2016.

⁶*Ibid.*

⁷Weinfeld, N.S., Mills, G., Borger, C., Geaing, M., Macaluso, T., Montaquila, J., Zedlewski, S. (2014) *Hunger In America 2014*.

With support from donors to cover the cost of harvesting the corn, the cooling shed systems, the packing equipment and materials, and the transportation, we were able to harvest 600,000 pounds of corn and 800,000 in 2013 from Seneca and Del Monte. We distributed all of it across Minnesota and to 15 additional states. There was additional sweet corn but we lacked the funds to harvest, cool and distribute the corn within its 7 day shelf life. The operational challenges in the field and the cost of transportation to the food bank are only one set of hurdles; food banks and other charitable food providers also need additional cooling, storage and transportation capacity to take advantage of donation opportunities and be able to distribute perishable food to those in need before it expires.

In part from the lessons learned during this pilot, Feeding America designed and invested in innovative technology platforms to facilitate perishable donations.

Produce Matchmaker is an online portal and ordering system designed to help produce donors quickly connect with food banks when produce is available 24 hours a day. It allows food banks to review offers and accept donations in real time so that produce can be moved more quickly to hungry families and food banks can calculate their distribution costs and make cost-effective decisions.

The system also allows food banks to order produce donations by the pallet, rather than the truckload, to save transportation costs and rescue smaller amounts of produce. Currently in Phase One of two phases, Produce Matchmaker is already being used by more than 150 food banks and state associations.

Phase Two, which will be implemented this summer (2016), will add additional features such as enhanced data tracking, better long-term produce planning and collaboration between food banks to share costs. Ultimately, we expect the system will help us source, handle and distribute more of the billions of produce that is wasted each year.⁸

We also have launched MealConnect, an online platform to facilitate the easy, safe and fast donation of fresh food from grocery stores, convenience stores and foodservice locations by matching donors to their local Feeding America food bank. At no cost, donors and prospective donors can engage online with Feeding America member food banks when they have extra product to donate to their neighbors facing hunger. It is the only donation matching software that fully vets both the donor and the recipient to ensure proper food safety protocols are followed throughout the donation process.

When a donor posts surplus food on MealConnect, the member food bank is instantly alerted and their vetted food pantry is dispatched to collect the product at a prearranged time. Using MealConnect on a smartphone, tablet or PC simplifies the logistics of matching excess food with a nearby pantry who can accept it. This is local food rescue in the sharing economy.

MealConnect is the technology platform enabling Starbucks to partner with Feeding America to launch Food Share, which will ensure the donation of an additional 50 million meals over the next 5 years as the program is rolled out across our 198 food banks and to 7,600 Starbucks stores across the U.S. While MealConnect will help us capture an additional 50 million meals over the next 5 years from the Starbucks FoodShare program alone, it will not solve the entire problem. We need Congress to provide funding to invest in innovative platforms like this to enable additional meal recovery. Pilot programs take a significant amount of investment to identify what solutions work and can be scaled across multiple food banks, and a combined investment from the public and private sector would strengthen our ability to pursue additional innovative programs.

The expansions to the enhanced deduction for donated food, included in the Protecting Americans from Tax Hikes (PATH) Act enacted into law in December 2015, ensure that the enhanced deduction is available to businesses of all sizes who donate or wish to donate food to food banks and other qualified charities. According to estimates from the Joint Committee on Taxation, the changes are expected to result in nearly one billion additional meals over the next 10 years.⁹

Congress has long recognized the importance of tax incentives as a tool to facilitate donations of excess food. The Tax Reform Act of 1976 established an enhanced tax deduction for large companies donating food to a qualified 501(c)(3) nonprofit. Although this tax incentive helped spur the growth of the Feeding America network's food rescue efforts, the tax incentives did not apply to a large number of po-

⁸According to a study conducted for Feeding America by the Boston Consulting Group, 48 billion of the 70 billion pounds of food wasted each year is in the ag and agri-processing industry. Although Produce Matchmaker will help with accessing some of this, it is not the only solution.

⁹Joint Committee on Taxation, *Estimated Revenue Budget Effects Of Division Q Of Amendment #2 To The Senate Amendment To H.R. 2029* (Rules Committee Print 114-40), The "Protecting Americans From Tax Hikes Act of 2015", December 15, 2016.

tential food donors. Small businesses and farmers in particular were not able to take the enhanced tax deduction, meaning that in many cases it would cost a donor more to implement a food donation program than it would to send the food to the landfill or leave it in the field.

In 2015 thanks to the efforts of lawmakers on both sides of the aisle, the Protecting Americans from Tax Hikes (PATH) Act was enacted. It included an expansion of the food donation tax deduction to include all businesses, large and small, as well as farmers using cash basis accounting. The changes also make it easier for food industry donors to take the enhanced deduction for donated food that may not be intended for market. An example of that would be our partnership with a cereal manufacturer that is now donating cereal that does not have enough dried fruit added to it to meet their standards for retail sale. Before the passage of the PATH Act, it was more cost-effective for the donor to sell the cereal for animal feed than to donate the cereal to a food bank. With the PATH Act changes to allow the valuation of products that don't meet manufacturers' specifications, the donor can now take the enhanced tax deduction for donating the cereal to its local food bank. This incentive recognizes that donating excess food to struggling families should be the top priority for food waste reduction. The EPA hierarchy establishes a pyramid of landfill diversion strategies for food waste; those strategies, listed in importance, are source reduction, feed hungry people, feed animals, industrial uses, composting, and landfill/incineration.

Now that the legislation has become law, our focus is on educating our donors and potential donors across the food industry, particularly farmers and growers, about the expansion of the enhanced deduction for donated food and how they can leverage it. To do so, Feeding America has partnered with Deloitte Tax to produce specific information by food industry sector to detail the changes, how they impact that sector and how donors can utilize the enhanced tax deduction for donated food. We commend you and your colleagues in Congress for passing last year's PATH Act and taking this critical step in improving Federal policy to support food rescue.

Moving forward, there is a significant opportunity to partner with Congress, the Administration and elected officials at the Federal, state, and local level on policy and regulatory changes, as well as public education campaigns to reduce food waste and increase food donation. As you examine the scope of food rescue in America and begin preparing for the next farm bill, we urge you to make this issue a priority and look forward to working with you.

Standardizing date labels on food at the Federal level is one policy change that would have a significant impact on food waste at the consumer level and throughout the supply chain. Many of the date labels used in the food industry right now are a baffling mixture of "sell by" "best by" or "use by" that is not science-based and confuses consumers. In addition, providing a clear Federal standard about when food can be donated if it is past a quality date would enable increased food donations in the twenty states that currently have arbitrary restrictions on food donations past the sell by date.

There are also other changes that would have a significant impact on food rescue, including a thorough review of USDA administered grant and incentive programs to identify opportunities to ensure that food rescue is specifically included. Many grant programs, such as Specialty Crop Block Grants, the Local Food Promotion Program Grants and the Farmers Market Promotion Program Grants support activities that mirror aspects of the work food banks are doing to rescue food, but do not specifically mention food rescue in the authorizing language for the grants. Expanding the grants to encompass food rescue would make it easier for food banks to apply for funding to support food rescue, build innovative partnerships and fill the infrastructure and transportation funding gaps that exist today.

As you continue to examine this critical issue, we stand ready to partner with you. I encourage you to visit your local food bank to learn about the challenges and opportunities they face, as well as their work to capture more food that would otherwise be wasted. Thank you for the opportunity to testify and we look forward to discussing this further with you.

The CHAIRMAN. Well, I thank our witnesses for their testimony. The chair would remind Members they will be—

Mr. PETERSON. We have one more.

The CHAIRMAN. I am sorry, Ms. Broad Leib. I jumped over on the end. I am sorry, ma'am.

Ms. BROAD LEIB. That is okay.

The CHAIRMAN. Ms. Broad Leib for 5 minutes. Sorry about that.

Ms. BROAD LEIB. Did my time pass so fast?

The CHAIRMAN. You looked like—yes.

Ms. BROAD LEIB. Thank you.

The CHAIRMAN. My apologies. I am so sorry. Ms. Broad Leib, 5 minutes.

Ms. BROAD LEIB. That is okay.

STATEMENT OF EMILY M. BROAD LEIB, J.D., ASSISTANT CLINICAL PROFESSOR OF LAW AND DIRECTOR, FOOD LAW AND POLICY CLINIC, HARVARD LAW SCHOOL, JAMAICA PLAIN, MA

Ms. BROAD LEIB. Thank you, Chairman Conaway, Ranking Member Peterson, and the Members of the Committee for the opportunity to speak with you.

My name is Emily Broad Leib, and I direct the Harvard Law School Food Law and Policy Clinic.

We have worked on reducing food waste for several years, and through our work with various clients and partners, we have come to see intimately the challenges to food waste reduction and food recovery. And I want to highlight a few issues.

First, as you have heard from many of my colleagues, confusion over date labels is a major cause of food waste. The ReFED report found that standardizing date labels is the most cost-effective of 27 of the different solutions they examined to reduce food waste, and could divert 398 tons of food waste. We have identified two key challenges with date labels. First, in *The Dating Game*, which we published in 2013 with the NRDC, we showed that there is a dizzying array of state laws created to fill the void in Federal regulation on this issue. Forty-one states and D.C. regulate date labels, but no two states have the same law, which is evidence that these laws are not based in science or sound public policy. New York, for example, does not regulate dates on any food products, but its neighbor, Massachusetts, requires dates on all perishable and semi-perishable products, and then heavily restricts sale or donation after the date.

Second, we found that consumers are confused. On most foods, date labels are not intended to communicate safety. Instead, they signal a manufacturer's estimate of how long the food will be at its best taste. But consumers toss past-date food because of safety fears. In a national survey my clinic conducted this April with the National Consumers League and the Johns Hopkins Center for a Livable Future, we found that over $\frac{1}{3}$ of consumers always throw food away after the date, and 84 percent do so at least occasionally. Interestingly, $\frac{1}{3}$ of consumers also already believe the Federal Government regulates date labels.

Through our work on date labels, we have also learned that safety is a risk for certain food products, such as deli meats or unpasteurized dairy, if they are consumed after the date. That also isn't communicated clearly to consumers. Moving forward, we could align with what most other countries do, and as Representative Pingree discussed, require a standard quality label on foods where freshness is a concern, and a standard safety label on foods that actually carry a safety risk after the date. We have been excited to see support for standard date labels from companies like Wal-

Mart, General Mills, Nestlé, and Campbell's. Standardizing these labels could help consumers make better decisions, they could facilitate donation of safe, past-date food, and could also be a win for companies.

Moving on, I would like to talk about food donation. Several of my colleagues, and the Chairman, mentioned the fear of exposure to liability, which hampers food donation, but strong liability protections already exist. In 1996, Congress passed the Bill Emerson Good Samaritan Act which provides a very strong Federal floor of civil and criminal liability protection to both food donors and the nonprofit organizations that distribute food to needy individuals. These organizations are protected as long as they don't act with intentional misconduct or gross negligence. But 67 percent of manufacturers and 54 percent of retailers still say that the main reason they don't donate is because of fear of liability.

Food recovery organizations report that many donors don't know about this legislation, or that if they do know, they are concerned about the lack of authoritative interpretation of some of the key terms.

The Act has not been challenged in court, so there are no judicial interpretations of it, and it was never assigned to any agency, so there are no agencies that provide Federal guidance for filling these gaps, or provide education about the Act. Congress could call on an agency to provide guidance and raise awareness about the Act to help address these challenges.

Closely related to liability is the issue of food safety regulations. In our federalist system, regulations for grocery stores and restaurants takes place at the state level. State health codes vary, but they are mostly based on the FDA Food Code. However, the Food Code does not incorporate language around food donation, so states lack Federal guidance around safe food donation. Including food donations in the Food Code or other Federal guidance could help states clarify their safety laws and better prioritize food donation.

Last, I want to mention the opportunity for innovation. Organizations have begun to test different entrepreneurial approaches to food recovery. Several of our client organizations are testing technologies that connect donors and food recovery organizations, that convert nonconforming fruits and vegetables into new products, or apply retail models to provide surplus food at a low cost. As often happens, these innovations could not be predicted when the laws were first passed, so several existing laws like the Emerson Act actually posed barriers to the viability of some of these innovations. This Committee could address barriers like this, and create a friendlier climate for innovation.

In conclusion, despite strong laws, barriers persist. Addressing the challenges I mentioned, such as standardizing date labels, strengthening liability protections and food safety guidance, and supporting innovation can reduce the amount of food waste, and increase the amount of healthy, safe food recovered.

Thank you.

[The prepared statement of Ms. Broad Leib follows:]

PREPARED STATEMENT OF EMILY M. BROAD LEIB, J.D., ASSISTANT CLINICAL PROFESSOR OF LAW AND DIRECTOR, FOOD LAW AND POLICY CLINIC, HARVARD LAW SCHOOL, JAMAICA PLAIN, MA

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify on the laws and policies that can help reduce food waste from field to table. My name is Emily Broad Leib and I am an Assistant Clinical Professor of Law at Harvard Law School and the Director of the Harvard Food Law and Policy Clinic (FLPC), a division of the Center for Health Law and Policy Innovation. FLPC was established in 2010 to provide legal and policy guidance to a range of clients seeking to increase access to healthy foods, assist small and sustainable farmers in breaking into new commercial markets, and reduce waste of healthy, wholesome food, while educating law students about ways to use law and policy to impact the food system.

FLPC has been researching policies to reduce food waste for several years. In September 2013, we published a report with the Natural Resources Defense Council that analyzed the laws regarding expiration dates and explained how these unclear and unregulated labels contribute to an alarming amount of unnecessary food waste. Since the publication of that report, FLPC has continued to work on the challenge of confusing date labels, while also researching other policy opportunities to divert surplus food away from the landfills and into the homes of those in need. Through our work with a range of clients, we have seen intimately the challenges that inhibit food waste reduction and food recovery.

While there is an abundance of food produced in the U.S. every year,¹ a significant amount of this food ends up in business' dumpsters and consumers' trash cans, making its way to landfills instead of the plates of hungry families.² Forty percent of the food produced in the U.S. goes uneaten, resulting in 62.5 million tons of wasted food each year.³ Food waste in the U.S. has been on the rise for the past several decades, with per capita food loss increasing by 50 percent from 1974 to 2005.⁴ A number of Federal laws strive to reduce food waste or promote food recovery, yet several barriers limit their effectiveness.

Although the best outcome for the environment is to reduce food waste at the source, the next best outcome, according to the Environmental Protection Agency (EPA) Food Recovery Hierarchy, is ensuring that surplus or unused food is used to feed people.⁵ Fourteen percent of American households were food-insecure during 2014, meaning they lacked access to a sufficient amount of food to lead an active, healthy lifestyle at some point during the year.⁶ Since, according to the Food Recovery Hierarchy, the top two priorities are to reduce food waste and get surplus food to people in need, this testimony focuses on opportunities in these two categories. This testimony is divided into four segments which detail several key ways to realign Federal policies in order to overcome some of the hurdles that lead to unnecessary food waste or prevent the donation of surplus food.

I. Reducing Food Waste by Standardizing and Clarifying Date Labels

The growing, transporting, processing, and disposing of uneaten food costs the U.S. \$218 billion each year, and an estimated $\frac{2}{3}$ of this lost economic value occurs at the household level.⁷ Consumer confusion over date labels is a top driver of this waste.

No national uniform system for date labeling exists in the U.S., which allows companies to use a dizzying array of labels including "sell by," "use by," "best by," and

¹Mark Bittman, *How to Feed the World*, N.Y. TIMES, (Oct. 14, 2013), <http://www.nytimes.com/2013/10/15/opinion/how-to-feed-the-world.html?pagewanted=all&r=0>.

²ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 12 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

³ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 10 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

⁴Kevin D. Hall, et al., *The Progressive Increase of Food Waste in America and Its Environmental Impact*, 4 PLoS ONE 1, 2(2009), <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0007940#pone-0007940-g001>.

⁵The Food Recovery Hierarchy, U.S. Env'tl. Prot. Agency, <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy> (last updated March 31, 2016).

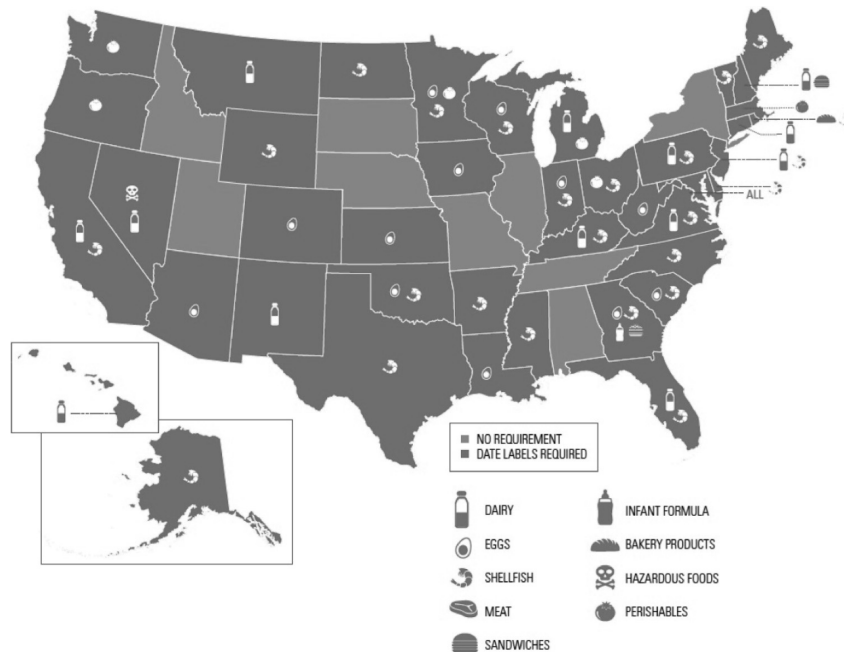
⁶Alisha Coleman-Jensen, et al., U.S. Dep't of Agric., Econ. Research Serv., *Household Food Security in the United States in 2014* 4 (2015), <http://www.ers.usda.gov/publications/err-economic-research-report/err194.aspx>.

⁷ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 12 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

“expires on.”⁸ These dates are generally not intended as safety indicators; instead, they signal a manufacturer’s estimate of how long food will taste its best. However, consumers mistakenly believe that these dates are indicators of safety, and many report throwing food away once the date passes, due to fear of safety risks. For the small set of foods that carry some risk if consumed after the date, this risk also is not communicated clearly to consumers. In our work over the past few years, we have identified two key challenges with date labels.

First, as we reported in *The Dating Game*, the absence of Federal law governing date labels has allowed states to regulate date labels, leading to a wide range of labeling laws in different states. No two states have the same law, evidence that they are not based in science or sound public policy. Forty-one states plus the District of Columbia require date labels on at least some food items, whereas nine states, including New York, do not require or regulate date labels on any food products (see *Figure 1*).⁹ The states that regulate date labels also vary greatly in their requirements.¹⁰ Some require the use of labels only on narrow categories of food. New Hampshire, for example, requires date labels only on containers of cream and pre-wrapped sandwiches.¹¹ Other states have much broader regulations: Massachusetts requires date labels on all prepackaged perishable and semi-perishable food products.¹²

Figure 1: State Requiring Date Labels on At Least Some Food Products
States Requiring Date Labels on At Least Some Food Products



⁸ Emily Broad Leib, Natural Res. Def. Council & Harvard Food Law & Policy Clinic, *The Dating Game: How Confusing Food Labels Lead to Food Waste in America* 9 (2013), <http://www.chlpi.org/wp-content/uploads/2013/12/dating-game-report.pdf>.

⁹ Emily Broad Leib, Natural Res. Def. Council & Harvard Food Law & Policy Clinic, *The Dating Game: How Confusing Food Labels Lead to Food Waste in America* app. B at 32 (2013), <http://www.chlpi.org/wp-content/uploads/2013/12/dating-game-report.pdf>.

¹⁰ Emily Broad Leib, Natural Res. Def. Council & Harvard Food Law & Policy Clinic, *The Dating Game: How Confusing Food Labels Lead to Food Waste in America* app. C at 35–54 (2013).

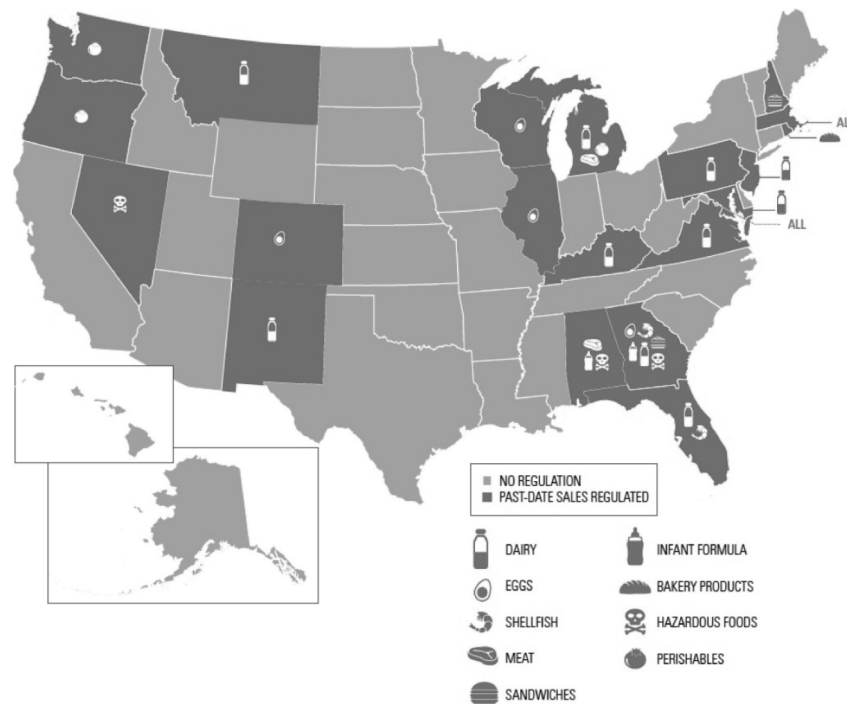
¹¹ See, e.g., N.H. Rev. Stat. Ann. § 184:30–g (2016); N.H. Code Admin. R. Agr. 1412.04 (2016).

¹² 105 Mass. Code Regs. 520.119 (2016).

Twenty states and the District of Columbia prohibit or restrict sale or donation of food products once the date has passed (see *Figure 2*).¹³ These state laws also vary widely. Massachusetts and Oregon allow past-date products to be sold, but impose restrictions on sales, such as requiring them to be clearly labeled as past-date and separated from pre-date products.¹⁴ Montana, which requires milk to bear a “sell by” date of 12 days after pasteurization, prohibits milk from being sold or “otherwise offered for public consumption” after the date.¹⁵

Figure 2: States Regulating Food Sales Past some Label Dates

States Regulating Food Sales Past Some Label Dates



Second, we have learned that consumers are confused. On most foods, date labels are not intended to communicate safety. Instead, manufacturers choose dates based on how long they estimate the food will taste its best. They use a variety of quality-based methods to determine these dates, including consumer taste tests, literature values, product turnover rates, or consumer complaints.¹⁶

But many consumers throw away food once the date passes because they mistakenly think the date is an indicator of safety. A representative national survey conducted in April 2016 by FLPC, the National Consumers League, and Johns Hopkins Center for Livable Future, found that consumers use date labels to make decisions about discarding food: over $\frac{1}{3}$ always discard food close to or past the date on the label, and 84% do so at least occasionally.¹⁷ A third of consumers also wrongly think

¹³ Emily Broad Leib, Natural Res. Def. Council & Harvard Food Law & Policy Clinic, *The Dating Game: How Confusing Food Labels Lead to Food Waste in America* 26 (2013), <http://www.chlpi.org/wp-content/uploads/2013/12/dating-game-report.pdf>.

¹⁴ See, e.g., 105 Mass. Code Regs. 520.119(f) (2016); Or. Rev. Stat. § 616.825 (2016).

¹⁵ Mont. Admin. R. 32.8.202 (2016).

¹⁶ Emily Broad Leib, Natural Res. Def. Council & Harvard Food Law & Policy Clinic, *The Dating Game: How Confusing Food Labels Lead to Food Waste in America* 17–18 (2013), <http://www.chlpi.org/wp-content/uploads/2013/12/dating-game-report.pdf>.

¹⁷ Emily Broad Leib, et al., *Consumer Perceptions of Date Labels: National Survey*, (2016), http://www.chlpi.org/wp-content/uploads/2013/12/Consumer-Perceptions-on-Date-Labels_May-2016.pdf.

that date labels are federally regulated.¹⁸ Wasted food costs the average American family of four \$1,365 to \$2,275 per year.¹⁹ Studies in the United Kingdom found that 20% of household waste is due to date label confusion.²⁰ When consumers misinterpret indicators of quality and freshness for indicators of a food's safety, this increases the amount of food that is unnecessarily discarded.

Consumers are also misled, and potentially put at risk, when they are not warned of foods that may be unsafe after the date. This is the case with certain ready-to-eat foods that are at risk of contamination with *Listeria monocytogenes*. *Listeria* can reproduce under refrigeration, and ready-to-eat foods are not cooked before they are consumed, so the *Listeria* remains on these products.²¹ A joint FDA/USDA study identified several foods in this category, including deli meats and unpasteurized dairy items.²² Clearer date labels could better serve consumers by identifying foods that may become unsafe after the date.

In addition to food waste by consumers, thousands of pounds of food are also needlessly trashed before they reach the consumer because the date has passed. A report sponsored by the Grocery Manufacturers Association and the Food Marketing Institute estimated that about \$900 million worth of inventory was removed from the supply chain in 2001 due to expiration dates.²³ Fifteen years later, this number has likely only increased.

Internationally, most date label regulations, including the standards in place throughout the European Union, utilize a dual label system that requires a standard quality label on foods where freshness is a concern and a standard safety label on foods that carry a safety risk past the date.²⁴ ReFED, a collaboration of business, nonprofit, foundation, and government leaders committed to reducing food waste, found in its *Roadmap to Reduce Food Waste by 20 Percent* that standardizing date labels was the most cost effective of 27 potential solutions. They report that standardizing date labels has the potential to divert 398,000 tons of food waste per year and provide \$1.8 billion per year in economic value.²⁵ Having one clear indicator on a food product to let consumers know if it is a quality label or a safety label could reduce food wasted due to consumer confusion and also keep consumers safe.

More education is needed to help ensure past-date food is not needlessly wasted. Standardizing date labels could make it easier for Federal agencies and other organizations to conduct such education. Indeed, education will be needed to ensure the success of standard date labels if such standards are created. In addition to reducing waste in consumers' homes, clarifying date labels also can ensure that more wholesome past-date food is donated. Many food businesses are unsure whether past-date food is safe, whether its donation is lawful, and whether they will receive liability protection. This makes them reluctant to donate past-date foods. Further, food bank recipients, like other consumers, are confused about date labels and hesitant to consume past-date foods. Standard date labels could make clear which foods could be safely donated and consumed after the date and which cannot, reducing waste at all levels of the supply chain.

¹⁸ Emily Broad Leib, et al., *Consumer Perceptions of Date Labels: National Survey*, (2016), http://www.chlpi.org/wp-content/uploads/2013/12/Consumer-Perceptions-on-Date-Labels_May-2016.pdf.

¹⁹ Jonathan Bloom, *American Wasteland* 187 (Da Capo Lifelong Books, 2011).

²⁰ *Consumer insight: date labels and storage guidance*, Waste & Resources Action Programme, May 2011, http://www.wrap.org.uk/sites/files/wrap/ES%20Technical%20report%20dates_0.pdf (assumes U.S. home behaviors are equivalent to those in U.K.).

²¹ Centers for Disease Control and Prevention, *Listeria* (Jan. 2, 2013), <http://www.cdc.gov/listeria/risk.html>.

²² Ctr. for Food Safety & Applied Nutrition, Food & Drug Admin. & Food Safety & Inspection Serv., U.S. Dep't of Agric., *Quantitative Assessment of Relative Risk to Public Health from Foodborne Listeria monocytogenes Among Selected Categories of Ready-to-Eat Foods* (2003).

²³ Raftery Resource Network, Inc., *Expired Product Project*, Developed for the Joint Industry Unsaleables Steering Committee of Grocery Manufacturers of America & Food Marketing Institute 2 (July 2003), <http://www.gmaonline.org/downloads/research-and-reports/expiredproducts.pdf>.

²⁴ Directive 2000/13/EC of the European Parliament and the Council on the approximation of the laws of the Member States, Art. 3 ("E.U. Food Labeling Directive"). The Directive is implemented in Great Britain by the Food Labelling Regulations 1996 (FLR). According to the FLR, "food ready for delivery to the ultimate consumer or to catering establishments must carry an 'appropriate durability indication,' in the form of either a 'best before' date or a 'use by' date. Great Britain Food Labelling Regulations 1996, 1996 No. 1499 (20)–(22).

²⁵ ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 33 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

II. Increasing Donations by Food Manufacturers, Retailers, and Restaurants

Great potential also exists to increase the amount of healthy, wholesome food that is donated. ReFED found that consumer-facing businesses, such as retailers and restaurants, generated 40 percent (25 million tons) of food waste and food manufacturers generated two percent (1 million tons).²⁶ Yet, according to a report jointly sponsored by the Grocery Manufacturers Association and the Food Marketing Institute, in 2011 only 1.6% of food deemed unsaleable by food manufacturers was recovered for human consumption; among food retailers and wholesalers only 17.9% was recovered.²⁷ The sheer amount of food being sent to the landfill instead of donated in these sectors is evidence that more can and should be done to mitigate food waste.

Food manufacturers and retailers make individual calculations when deciding whether or not to donate surplus foods, but two key elements generally play a role in such decisions: cost and liability. Fortunately, Congress helped to address the cost of donation with the recent Fiscal Year 2016 omnibus budget, which expanded opportunities to claim an enhanced tax deduction for food donation to all businesses and increased the cap on this deduction (some businesses like farms can still use extra help; see *Section IV* for more information).²⁸ Federal law also provides very strong liability protection for food donations, yet more can be done to strengthen these liability protections and help tip the scale in business decisions regarding whether to donate.

Liability Protections

Many food manufacturers, retailers, and wholesalers cite fear of liability as a primary deterrent to donating food.²⁹ A 2014 survey conducted by the Food Waste Reduction Alliance, a joint industry task force comprised of leading companies and trade associations in the food, beverage, food service, and food retail industries, found that 67% of food manufacturers and 54% of retailers and wholesalers cite liability as one of the main barriers to food donation.³⁰ However, strong Federal and state liability protections exist for the donation of food items.

In 1996, Congress passed the Bill Emerson Good Samaritan Food Donation Act (Emerson Act), which provides a Federal floor of civil and criminal liability protection to food donors and nonprofit organizations that distribute food.³¹ The Emerson Act protects a broad range of food donors, including individuals, businesses, nonprofit organizations, government entities, and gleaners—individual or entities that harvest and donate agricultural crops.³² The protection applies so long as they donate “apparently wholesome food” in “good faith” and do not act with intentional misconduct or gross negligence.³³ In addition to this Federal protection, all 50 states and Washington, D.C. have passed their own state-level Good Samaritan acts, but the protection provided and foods covered vary from state to state.³⁴

Despite this strong protection, why do so many potential food donors still decline to donate because of liability fears? Food recovery organizations report that many potential donors are unaware of liability protection or the Emerson Act, and it is difficult to spread the word to those who are not already donating.³⁵ Those that do know about the Act are concerned about the lack of authoritative interpretation of its key terms, including “needy individual” and “apparently wholesome food.” The Emerson Act has not been challenged court, so no judicial interpretations of it exist.³⁶ There is also no agency guidance interpreting the Act. Part of the reason

²⁶ ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 13 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

²⁷ BSR, *Analysis of U.S. Food Waste Among Food Manufacturers, Retailers, & Wholesalers* 9–10 (2013), http://www.foodwastealliance.org/wp-content/uploads/2013/06/FWRA_BSR_Tier2_FINAL.pdf.

²⁸ H.R. 2029, 114th Cong. § 113(a) (2015) (to be codified at I.R.C. § 170(e)(3)(C)).

²⁹ Food Waste Reduction Alliance, *Analysis of U.S. Food Waste Among Food Manufacturers, Retailers, and Restaurants*, 13, 16 (2014) http://www.foodwastealliance.org/wp-content/uploads/2014/11/FWRA_BSR_Tier3_FINAL.pdf.

³⁰ Food Waste Reduction Alliance, *Analysis of U.S. Food Waste Among Food Manufacturers, Retailers, and Restaurants*, 13, 16 (2014) http://www.foodwastealliance.org/wp-content/uploads/2014/11/FWRA_BSR_Tier3_FINAL.pdf.

³¹ 42 U.S.C.A. § 1791 (2016).

³² 42 U.S.C.A. § 1791(b)(9) (2016).

³³ 42 U.S.C.A. § 1791(c) (2016).

³⁴ H.R. Rep. No. 104–661, at 3. (1996); D.C. Code Ann. § 48–301 (West 2016).

³⁵ See, e.g., Telephone Interview with Emily Malina, Chief Product Officer, Spoiler Alert (Nov. 13, 2015).

³⁶ University of Arkansas, *Food Recovery: A Legal Guide* 3 (2013), <http://law.uark.edu/documents/2013/06/Legal-Guide-To-Food-Recovery.pdf>.

for the lack of interpretative guidance is that, unlike many statutes, which delegate power to an agency to interpret and enforce them, authority under the Emerson Act was never assigned to a particular Federal agency. Thus, no agency is required to provide Federal guidance or raise awareness of the Act. Potential donors have only the 1996 statutory language on which to base decisions regarding their coverage. One way to clarify the scope of the Emerson Act and promote public awareness is to assign authority to a specific executive agency to oversee and interpret this legislation.

In addition, the Emerson Act could be examined for further opportunities to increase food donation. For example, the Emerson Act only covers foods that comply with or are reconditioned to comply with all Federal, state, and local quality and labeling standards.³⁷ Federal law includes several labeling requirements, such as name of the food, manufacturer's address, net quantity of contents, an ingredient list (which includes allergen information) and nutrition facts panel.³⁸ Some of these labels are not necessary to ensure that donated food is safe. Ingredient lists or allergen warnings are important for safety, but the net weight is not. Fear of facing liability due to donating mislabeled food, even if the mislabeling is not pertinent to food safety, is a major impediment to food donation.³⁹ Often food goes to waste precisely because there is a deficiency in its labeling, so salvaging food that is mislabeled in a way not relevant to safety could help to prevent unnecessary waste. The Emerson Act also does not explicitly state that donations of past-date foods are protected from liability and, as a result, past-date food that is perfectly safe for consumption often winds up in landfills.

Despite the strong liability protection in the Emerson Act, many businesses still fail to donate because of liability concerns. The ReFED report found that educating potential food donors on donation liability laws has the potential to divert 57,000 tons of food waste from the landfill.⁴⁰ More can be done to put donors at ease about the protections, raise awareness of the Act, and strengthen its provisions.

Food Safety

Closely related to liability is the issue of compliance with food safety regulations. Even if they know they will be protected from liability, businesses are fearful of doing something that may run afoul of their health inspectors. Most food safety regulations that impact food donation are created at the state level, so businesses have to understand and comply with state regulations and their interpretations by state and local health departments. Yet these regulators and health inspectors often are not aware of the importance of food donations or the best practices for safely and economically donating food. Food donors and recovery organizations lament the lack of guidance on rules for food donation in their states, or the hesitation on the part of health inspectors to allow donation programs to proceed.

States have authority over food safety rules for foods that are sold within the state, but the FDA plays a key role in creating state regulations through dissemination of food safety knowledge through the FDA Food Code. The Food Code is a model code created with the help of the Conference for Food Protection (CFP), an organization made up of industry, government, and consumer groups who develop and promote food safety standards.⁴¹ The Food Code is released every 4 years and adopted by most states.⁴² However, the Food Code does not include model language regarding donation, meaning states lack guidance on incorporating food donation provisions into their laws.

In the late 1990s, USDA and FDA recognized the need for model guidance regarding food donation and, using the expertise of the CFP, created the Comprehensive

³⁷ 42 U.S.C.A. § 1791(e) (West 2015).

³⁸ U.S. Food and Drug Administration, *Guidance for Industry: A Food Labeling Guide*, <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm2006828.htm> (last visited Dec. 6, 2015).

³⁹ Food Waste Reduction Alliance, *Analysis of U.S. Food Waste Among Food Manufacturers, Retailers, and Restaurants*, 13 (2014), http://www.foodwastealliance.org/wp-content/uploads/2014/11/FWRA_BSR_Tier3_FINAL.pdf.

⁴⁰ ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 33 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

⁴¹ About the Conference, Conference for Food Protection, <http://www.foodprotect.org/about/> (last visited Apr. 26, 2016).

⁴² *FDA Food Code*, U.S. Dep't of Health & Human Servs., Food & Drug Admin., <http://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf> (last visited Apr. 28, 2016).

Guidelines for Food Recovery Programs.⁴³ The Guidelines provide information on maintaining a safe food recovery program (based on the Food Code); statistics on food waste and food recovery; food recovery activities undertaken by the government; and legal protections for food recovery.⁴⁴ The Guidelines serve as a useful resource; however, they target businesses rather than regulators. The Guidelines are only briefly summarized in the appendix of the Food Code.⁴⁵ Because of the ubiquity of the Food Code,⁴⁶ including food donation language in the Food Code, rather than just mentioning the Guidelines in an appendix, could ensure familiarity with best practices for food donation among state and local food safety officials, who are the ones making decisions about whether to allow regulated businesses to donate. Federal leadership can encourage states to make donation a priority; whether through the addition of language on food donation to the Food Code or otherwise disseminating best practices to state regulators.

In addition to the dissemination challenges, the Guidelines are not updated on a regular schedule. The Guidelines were last released in 2007, yet the FDA Food Code has been updated twice since then, leaving outdated food safety language and guidance in the Guidelines. In April 2016, CFP approved a new version of the Guidelines to be released shortly.⁴⁷ Although new Guidelines will be released this summer, they will soon become outdated if they are not updated regularly. Updating the Guidelines every 4 years, the same rate the FDA Food Code, could ensure that the Guidelines stay up to date.⁴⁸

Each year, food manufacturers, wholesalers, and retailers waste billions of pounds of food. Clarifying the language of the Emerson Act, removing some of the non-essential restrictions in the Emerson Act, and regularly providing food safety guidance that better targets state regulators can dispel some of the concerns with liability and help reduce the amount of food unnecessarily wasted each year.

III. Supporting Innovative Food Recovery Models

In recent years, organizations and individuals have begun to test entrepreneurial approaches to food recovery. Our clients and partners are testing technologies to connect donors and recovery organizations, converting nonconforming fruits and vegetables into new products, like juices and soups, or applying retail models to provide surplus food at a low cost.⁴⁹ As often happens, innovations could not be predicted when laws were created, and several existing laws pose barriers. This Committee could further research ways to support innovation.

As one example, some nonprofit organizations are following the model of “social supermarkets,” popularized in Europe, to sell surplus foods in a low-cost grocery.⁵⁰ These organizations can fill a need in communities where individuals are food-insecure or lack regular food access, but for various reasons are not willing or able to qualify for government assistance or use a food pantry or soup kitchen. They also offer the potential for a sustainable solution to food recovery, as they can use customer payments to offset the costs of labor, storage, and transportation of recovered food. ReFED’s *Roadmap* found that innovative retail models and secondary resellers

⁴³ Food Recovery Committee, Conference for Food Protection, *Comprehensive Guidelines for Food Recovery Programs* 6 (2000), <http://www.foodprotect.org/media/guide/food-recovery-final2007.pdf>.

⁴⁴ Food Recovery Committee, Conference for Food Protection, *Comprehensive Guidelines for Food Recovery Programs* 6 (2000), <http://www.foodprotect.org/media/guide/food-recovery-final2007.pdf>.

⁴⁵ U.S. Dep’t Health & Human Services, Food and Drug Administration, *Food Code* app. 2 at 321–22 (2013), <http://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>.

⁴⁶ As of 2012, all 50 states had adopted retail codes modeled after versions of the Food Code. The Food Code is intended as a model for government agencies at all levels that regulate restaurants, grocery stores, and other food service operations. See U.S. Dep’t Health & Human Services, Food and Drug Administration, *Introduction to the 2013 Food Code* (2013), <http://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>.

⁴⁷ *Committee Final Report*, Conference for Food Protection 1 (Jan. 29, 2016), http://www.foodprotect.org/issues/packets/2016Packet/attachments/I_011_content_a.pdf.

⁴⁸ *Real Progress in Food Code Adoption*, U.S. Food & Drug Administration 1 (Feb. 22, 2016),

⁴⁹ See, e.g., FAQs, Daily Table, <http://dailytable.org/faqs/> (last visited Jan. 19, 2016); Lorena Galliot, *This New Startup Wants to Sell You Ugly Fruit and Veggies*, GRIST (May 8, 2015), <http://grist.org/food/this-new-startup-wants-to-sell-you-ugly-fruit-and-veggies/>.

⁵⁰ Serri Grashie, *Social Supermarkets A ‘Win-Win-Win’ For Europe’s Poor*, NPR (Dec. 13, 2013); Rebecca Smithers, *UK’s first ‘social supermarket’ opens to help fight food poverty*, THE GUARDIAN (Dec. 8, 2013).

have the potential to divert 167,000 tons of food waste per year and provide \$36.4 million per year in economic value.⁵¹

But these models face several challenges to their success. For example, food donations to these organizations are not protected under the Emerson Act unless the ultimate recipient “does not have to give anything of monetary value.”⁵² The Act does not provide liability protection to the food donor when the ultimate recipient pays, even at a reduced rate, for the food. The protection under the Act does not need to be structured in this way. For example, Massachusetts provides liability protection to those who donate to a nonprofit that charges the final recipient for food at a level to “cover the cost of handling such food.”⁵³ Oregon provides liability protection to donors who give to a nonprofit that charges the final recipient based “on a scale reflecting ability to pay or only requiring a shared maintenance contribution.”⁵⁴ These examples show ways to offer liability protection to innovative nonprofit food recovery organizations and their donors. Notably, although these organizations are selling food instead of giving it away for free, they are still nonprofit organizations organized and operated solely “for religious, charitable, or educational purposes.”⁵⁵ The nonprofit requirement ensures that food and any profits will be used for a charitable purpose. Any revenue-generating activities of these organizations would be conducted in furtherance of the enterprise’s social mission, rather than for profit-maximizing purposes.

The Emerson Act was enacted to encourage food donations; however, the “no-charge” provision deters donors from donating to innovative nonprofit social supermarkets and discourages traditional food recovery organizations from testing out new models. Similarly, the Federal enhanced tax deduction for food donation limits the enhanced deduction to foods that are given away for free to needy individuals and not “in exchange for money, other property, or services,”⁵⁶ meaning donations made to organizations that sell the food are not eligible for the enhanced deduction. Food donors are less likely to donate to an innovative food recovery organization that is not covered by the Federal liability protection and cannot offer them an enhanced tax deduction when they could instead donate to an organization that provides liability protection and an enhanced deduction, hampering the development of these new organizations.

These provisions also constrain traditional food recovery organizations from broadening their offerings. According to a report by Feeding America, “Emergency food from pantries . . . are now a part of households’ long term strategies to supplement monthly shortfalls in food.”⁵⁷ As a result of this increasing demand, “[F]ood banks across the nation continue to be stretched thin in their efforts to meet sustained high need in the wake of the recession.”⁵⁸ Since these organizations rely on food donations, it would be counterproductive to do anything that prevents their donors from receiving the enhanced deduction or causes them to lose their liability protection, such as selling the donated food at a low cost. Food banks struggle to receive not only donations of wholesome, safe food, but also to receive monetary donations to help pay their labor, transportation, administrative, and other costs. Providing some of their food offerings for sale using a low-cost grocery model could help to bring in income and support their broader operations, while potentially serving a broader client base. Organizations like Goodwill and Salvation Army offer a model of using sales of certain items to raise money to support their free services. Allowing food banks to do the same would help to finance their ongoing work supporting individuals and families, while serving a broader population.

The lack of liability protections or eligibility for enhanced tax deductions for donors to nonprofit “social supermarkets” offer just a few examples of the types of barriers that exist to innovation in the field of food recovery. Other innovative new models are struggling with a variety of similar or diverse challenges. Federal leadership could help to catalogue these barriers and evaluate whether modifications could

⁵¹ ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 33 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

⁵² 42 U.S.C.A. § 1791(b)(3) (West 2016).

⁵³ Mass. Gen. Laws ANN. 94 § 328 (West 2016).

⁵⁴ Or. Rev. Stat. Ann. § 30.890 (West 2016).

⁵⁵ 42 U.S.C.A. § 1791(c)(1) (West 2015).

⁵⁶ I.R.C. § 170(e)(3)(A)(ii) (2016).

⁵⁷ Feeding America, *Food Banks: Hunger’s New Staple: Preliminary Findings* 3 (2011), <http://feedingamerica.org/hunger-in-america/hunger-studies/-/media/hunger-new-staple-exec-summ.ashx?pdf>.

⁵⁸ *\$5 Billion Cut To Food Stamp Program Will Strain Food Banks: Feeding America Braces for a Significant Increase in Need*, Feeding Am. (Oct. 25, 2013), <http://www.feedingamerica.org/hunger-in-america/news-and-updates/press-room/press-releases/5-billion-cut-to-food-stamp-program-will-strain-food-banks.html>.

create a friendlier climate for food recovery innovation while supporting the ultimate goals of food waste reduction, food safety, and food security.

IV. Improve Opportunities To Recover Wholesome, Fresh Food from the Farm

On farms, approximately 10.1 million tons of food remain unharvested each year, often because market conditions make harvest uneconomical, leaving edible produce to rot in the field.⁵⁹ Even more crops are wasted post-harvest because they do not meet quality or appearance criteria, thus rendering them unsaleable despite being edible and nutritious.⁶⁰ While farms have an abundance of food that could be donated, preparing, storing, and transporting this food for donation can be quite expensive.

Farmers have to pay additional labor costs to harvest the crops that would otherwise be left in the fields. The food needs to be stored, cooled, and packed until it is ready to be delivered to a food recovery organization.⁶¹ The cost of preparing the food for donation can be large—packing and cooling donated produce alone could cost thousands of dollars,⁶² and meat from surplus animals must be processed into edible food before it is donated, which could also be quite expensive.

This food must then be transported to a food recovery organization. Transporting donated food requires a vehicle (sometimes one with refrigeration), a driver, gas, and other vehicle maintenance and repair expenses. This can be quite costly: one food recovery organization that uses refrigerated trucks to rescue and deliver surplus food estimates that it spends \$9,900 a week to run, maintain, and repair its four trucks, pay its drivers, and cover additional operating costs.⁶³ Many farmers rely on volunteer groups or food recovery organizations to transport the food for them. But in the many cases where local food recovery organizations simply do not have the capacity to transport the food, would-be donors find it more cost-effective to let the food rot in the field instead of paying for transportation.⁶⁴

To help address some of the costs involved in donating food, the Federal Government (and several state governments) provides tax incentives. There are two types of Federal tax incentives available for food donors—a general deduction that applies to all charitable contributions and an enhanced tax deduction that applies to qualified food donations. In comparison to the general deduction (which only allows a business to deduct the basis value of the product), the enhanced deduction allows businesses to deduct almost twice as much as the general deduction. It allows businesses to deduct the smaller of (a) twice the basis of the donated food or (b) the basis of the donated food plus $\frac{1}{2}$ of the food's expected profit margin.⁶⁵

FLPC applauds Congress on the Fiscal Year 2016 omnibus budget, which expanded opportunities to claim the enhanced tax deduction to all qualifying businesses that donate food; in the past, the enhanced deduction was only available to C-corporations.⁶⁶ The 2016 omnibus budget also increased the overall cap for the enhanced deduction, strengthened and clarified the formula for calculating the deduction, and clarified the method for determining the FMV of unsaleable food products.⁶⁷ Congress has taken a significant step toward increasing food donations. Congress or an executive agency should monitor the effectiveness of the expansion of

⁵⁹ ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 33 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

⁶⁰ Dana Gunders, Nat. Res. Def. Council, *Wasted: How America Is Losing Up to 40% of Its Food from Farm to Fork to Landfill* 8 (2012).

⁶¹ See, e.g., Community Solutions Act of 2001: Hearing on H.R. 7 Before the Subcomm. on Human Res. & the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means, 107th Cong. 98, 100–01 (2001) (statement of Bill Reighard, President, Food Donation Connection).

⁶² See, e.g., 2012 *Cost Estimates of Establishing, Producing, and Packing Red Delicious Apples in Washington*, Wash. State Univ. Extension 3 (2012), <http://cru.cahe.wsu.edu/CEPublications/FS099E/FS099E.pdf> (noting that when a 25 acre orchard was in full production, it paid on average \$12,000 annually for packing costs).

⁶³ Telephone Interview with Lauren Palumbo, Chief Operating Officer, Lovin' Spoonfuls (Nov. 15, 2015) (noting that the costs of trucks, repairs and maintenance, gas, and the driver's salary cost this food recovery organization .33 a pound and Lovin' Spoonfuls recovers on average 30,000 pounds of food each week).

⁶⁴ See, e.g., Stacey H. Van Zuiden, *The Good Food Fight for Good Samaritans: The History of Alleviating Liability and Equalizing Tax Incentives for Food Donors*, 17 DRAKE J. AGRIC. L. 237, 250 (2012).

⁶⁵ I.R.C. § 170(e)(3)(B) (2015).

⁶⁶ H.R. 2029, 114th Cong. § 113(a) (2015) (to be codified at I.R.C. § 170(e)(3)(C)); Tax Reform Act of 1976, Pub. L. No. 94–455, § 2135, 90 Stat. 1525, 1928–29, (1976) (codified as amended at I.R.C. § 170(e)(3)).

⁶⁷ H.R. 2029, 114th Cong. § 113 (2015) (to be codified at I.R.C. § 170(e)(3)(C)).

the enhanced tax deduction over time to determine if further changes need to be made to encourage food donations.

Despite expansion of the availability of Federal tax incentives, the costs involved in donating food still pose challenges for farmers. One challenge is that farmers operate with very low profit margins.⁶⁸ Most U.S. farms are not profitable at all as ongoing businesses.⁶⁹ According to the U.S. Department of Agriculture (USDA), 69 percent of all U.S. farms were in the operating profit margin (OPM) “critical zone” in 2013.⁷⁰ Profit margins are even worse for smaller farms, which might not earn enough from the sale of farm produce and services to cover their expenses.⁷¹ Since many farmers operate on a low profit margin, it is difficult for them to benefit from a tax deduction because a deduction only reduces the amount of taxable income, meaning the value of the deduction is contingent on the amount of taxable income (which, for farms and especially small farms, might not be very large.)

Another challenge to donation by farmers or other low-profit-margin businesses is the lack of coverage for the ancillary costs of food donation. As outlined previously, farms face the steepest costs in getting food to food recovery organizations. Yet, the enhanced deduction does not explicitly provide coverage for the ancillary costs associated with food recovery.⁷² It is not in the financial interest of farmers to incur these costs when they are not offset by tax incentives, thus, much of this food continues to go to waste. California helps alleviate some of these costs by offering a tax credit that explicitly covers 50% of the costs incurred by the taxpayer in connection with the transportation of donated food.⁷³ Because many businesses cite the costs of transporting donated food items as a key barrier to donation, California’s model is worth analyzing for potential applicability nationally.

Because many farms operate on very low profit margins, any additional economic benefit they can receive for excess food that they grew but could not sell could increase their profit margins and keep them in business. At the same time, food straight from the farm is often some of the healthiest food available, so incentivizing the donation of this food can greatly benefit food-insecure Americans. A tax credit, which is not contingent on the size of a donor’s taxable income, could provide a larger incentive for farmers. To offset the specific costs that are most problematic for farmers, such a credit could also explicitly provide coverage for the ancillary costs associated with food donation, like transportation or storage. Other incentive models should also be examined for potential to address the unique challenges and costs faced by farmers attempting to recover healthy, wholesome food.

V. Conclusion

Forty percent of the food produced in the U.S. goes uneaten, resulting in 62.5 million tons of wasted food each year.⁷⁴ This waste results in the loss of natural resources, including the 25% of the U.S.’s fresh water and 300 million barrels of oil that are used to produce food that ends up in landfills.⁷⁵ Food waste presents a grave threat to our economy, our health, and our environment. It has been estimated that redistributing just 30 percent of all the food lost in the United States

⁶⁸ Robert Hoppe, *Profit Margin Increases with Farm Size*, (Feb. 2, 2015), U.S. Dep’t of Ag. Econ. Research Serv., <http://www.ers.usda.gov/amber-waves/2015-januaryfebruary/profit-margin-increases-with-farm-size.aspx#.VpU3B5MrLV0>.

⁶⁹ Robert Hoppe, *Profit Margin Increases with Farm Size*, (Feb. 2, 2015), U.S. Dep’t of Ag. Econ. Research Serv., <http://www.ers.usda.gov/amber-waves/2015-januaryfebruary/profit-margin-increases-with-farm-size.aspx#.VpU3B5MrLV0>.

⁷⁰ Robert Hoppe, *Profit Margin Increases with Farm Size*, (Feb. 2, 2015), U.S. Dep’t of Ag. Econ. Research Serv., <http://www.ers.usda.gov/amber-waves/2015-januaryfebruary/profit-margin-increases-with-farm-size.aspx#.VpU3B5MrLV0>.

⁷¹ Robert Hoppe, *Profit Margin Increases with Farm Size*, (Feb. 2, 2015), U.S. Dep’t of Ag. Econ. Research Serv., <http://www.ers.usda.gov/amber-waves/2015-januaryfebruary/profit-margin-increases-with-farm-size.aspx#.VpU3B5MrLV0>.

⁷² Community Solutions Act of 2001: Hearing on H.R. 7 Before the Subcomm. on Human Res. & the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means, 107th Cong. 98, 100–01 (2001) (statement of Bill Reighard, President, Food Donation Connection) (testifying businesses are losing money due to the costs associated with properly saving excess food); see also 42 U.S.C. § 1791 (2015) (requiring that donated food must meet all applicable state and local food quality and labeling standards in addition to Federal requirements); [I.R.C. § 170(e)(1) (2015); Charitable Contributions: For Use in Preparing 2014 Tax Returns, I.R.S., Dep’t of Treasury (Jan. 13, 2015), <http://www.irs.gov/pub/irs-pdf/p526.pdf>.

⁷³ Cal. Rev. & Tax. Code § 17053.12 (2015), <http://leginfo.ca.gov/faces/codes/displaySection.xhtml?lawCode=RTC§ionNum=17053.12>.

⁷⁴ ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent* 10 (2016), http://www.refed.com/downloads/ReFED_Report_2016.pdf.

⁷⁵ Kevin D. Hall, et al., *The Progressive Increase of Food Waste in America and Its Environmental Impact*, PLOS ONE 4(11): e7940, (2009), <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0007940>.

could feed every food-insecure American their total diet.⁷⁶ Despite several compelling policies, current laws still perpetuate barriers to food conservation and recovery. Addressing the barriers identified above can significantly reduce the amount of food waste and increase the amount of healthy, safe and wholesome food recovered across the food system.

ATTACHMENT 1

Consumer Perceptions of Date Labels: National Survey

Authors: EMILY BROAD LEIB, CHRISTINA RICE, RONI NEFF, MARIE SPIKER, ALI SCHKLAIR, SALLY GREENBERG.

Background & Methods

Each year, 40% of the United States food supply goes to waste.¹ The growing, transporting, processing, and disposing of this uneaten food costs us \$218 billion each year, and $\frac{2}{3}$ of this lost economic value is due to household food waste.² An important driver of household food waste is consumer confusion over date labels.³ Date labels are those dates that are applied to foods and accompanied by prefixes such as “sell by,” “best before,” and “use by,” among others. A U.K. study found that 20% of consumer waste occurs because of date label confusion.⁴

Because date labels are not federally regulated and state-level regulations, where they exist, are inconsistent, consumers face a dizzying array of unstandardized labels on their food products. Many people throw away food once the date passes because they mistakenly think the date is an indicator of safety, but in fact for most foods the date is a manufacturer’s best guess as to how long the product will be at its peak quality. With only a few exceptions, the majority of food products remain wholesome and safe to eat long past their expiration dates. When consumers misinterpret indicators of quality and freshness for indicators of a food’s safety, this increases the amount of food that is unnecessarily discarded. A recent report found that standardizing date labeling is the most cost-effective solution for reducing food waste, and could help to divert 398,000 tons of the food that is wasted each year.²

We conducted a survey to gain further insights into consumer perceptions of date labels. This survey was fielded online to a demographically representative sample of 1,029 adults from April 7–10, 2016. These questions were part of a CARAVAN® omnibus survey that is conducted twice a week by ORC International. The findings presented here are one piece of a larger analysis of consumer perceptions of date labels.

Take Home Messages

Our findings confirm that consumers use date labels to make decisions about discarding food: over $\frac{1}{3}$ always discard food close to or past the date on the label, and 84% do so at least occasionally. One-third of consumers wrongly think that date labels are federally regulated, and another 26% are unsure. The survey found that for future date label standardization, some labels would be particularly effective in communicating with consumers. “Best if used by” was most commonly seen as an indicator of food quality (70%) and only 12% viewed it as a food safety label. “Expires on” was most commonly seen as an indicator of food safety (54%), and relatively few respondents (23%) saw it as referring to quality. Because all six of the labels we tested are currently used as quality indicators, many foods with the “expires on” label are unnecessarily wasted. We can build on consumer perceptions of the meanings of different labels to help consumers better identify date labels that indicate safety *versus* those that are only intending to communicate peak quality.

Millennials were more likely to view date labels as indicators of food safety, more likely to think date labels are federally regulated, and more likely to discard food past the date on the label.

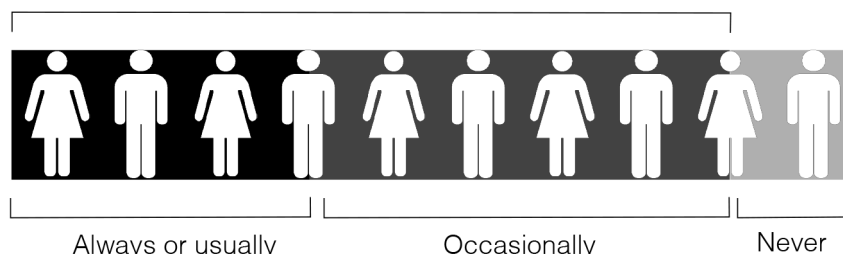
Detailed Findings

Consumers use date labels to make decisions about discarding food.

Over $\frac{1}{3}$ of the population (37%) says they always or usually throw away food because it is close to or past the date that appears on the package. 84% of consumers throw out food based on date labels at least occasionally. Notably, younger consumers (age 18–34) were most likely to discard food based on the date label, while older consumers (65+) were the least likely to do so.

⁷⁶ Dana Gunders, Natural Resources Def. Council, *Wasted: How America is Losing Up to 40% of its Food From Farm to Fork to Landfill* 4 (2012).

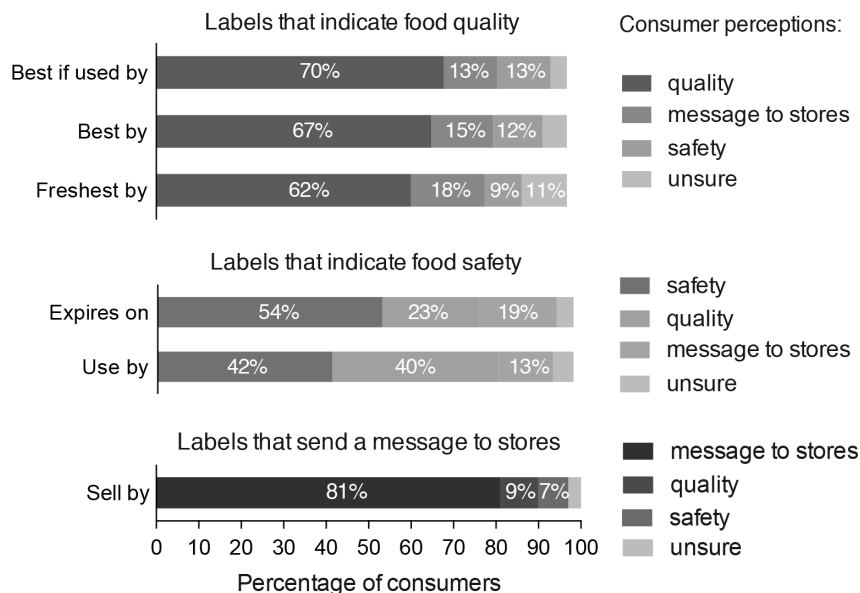
84% of Consumers At Least Occasionally Discard Food Close To Or Past the Date on Its Package



Consumers have misperceptions and uncertainty about what date labels actually mean.

We examined perceptions of six date labels: “best by,” “best if used by,” “expires on,” “freshest by,” “sell by,” and “use by.” The survey found a striking amount of diversity in interpretation of the meaning of these labels, suggesting a need to standardize labeling and better educate consumers. The labels most commonly perceived as indicators of **food quality** were “best if used by,” “best by,” and “freshest by,” which were perceived as indicators of quality by 70%, 67%, and 62% of consumers, respectively. Both “best if used by” and “best by” were also relatively unlikely to be misperceived as food safety labels. However, “freshest by” was more confusing to consumers, with 9% seeing it as a food safety label and 11% unsure of the meaning. About half the respondents saw “expires on” (54%) as an indicator of **food safety**. Many respondents also saw “use by” (42%) as an indicator of food safety; however, 40% of respondents perceived “use by” as a quality label. The majority of consumers correctly interpreted the “sell by” label as an **indicator to stores** about when to stop selling food (81%). Nonetheless, still 7% saw it as a safety label and 9% as a quality label. Younger consumers (age 18–34) were most likely to view all of these labels as food safety labels, while those aged 65+ were least likely to do so.

Consumer Confusion Over Date Labels



One-third of consumers wrongly think that date labels are federally regulated.

There was considerable uncertainty and misinformation about whether the Federal Government regulates date labels. 36% of the population wrongly answered that date labels are federally regulated, and 26% were unsure. Only 1% said they are federally regulated only for specific foods, which is technically the correct answer: the only food for which date labels are regulated federally is infant formula; all other foods are regulated at the state level or not at all, depending on the state. Those who were more likely to think that labels are federally regulated included younger consumers (18–34), African Americans, Hispanics, households of three or more, and households with children.

36% of Consumers Think Date Labels Are Federally Regulated

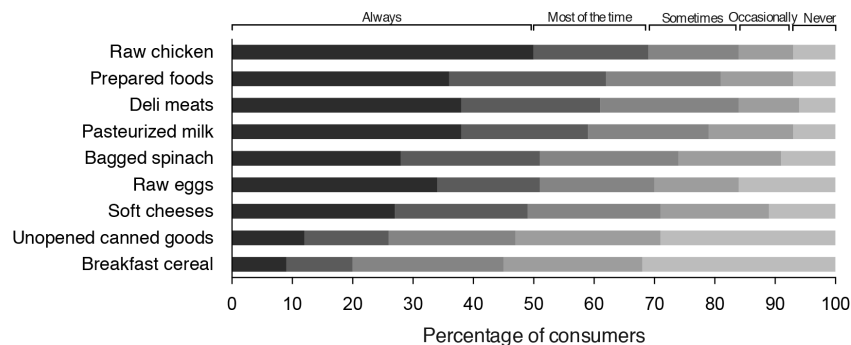


Consumers' willingness to throw away foods past the "use by" date depends on the food.

Consumers were also asked about their frequency of discarding food based on the "use by" label. We found that they were most cautious about raw chicken, with 50% of all respondents "always" throwing away raw chicken past the "use by" date. Consumers were least cautious about unopened canned goods and breakfast cereal. But even for these less perishable foods, 12% and 9% of consumers still reported that they "always" throw away canned goods and breakfast cereal, respectively, past the "use by" date. For those foods most likely to cause concern, consumer perceptions of the "use by" label may translate into large amounts of food wasted: raw chicken, pasteurized milk, and deli meats were thrown away "always" or "most of the time" by 69%, 59%, and 61% of consumers, respectively. Of those products, only deli meat has been shown to increase in risk after the date.⁵

Younger consumers (18–34) were more likely to "always" discard foods past the "use by" date. This was true for all foods except raw chicken and prepared foods, for which rates of discarding past the date were uniformly high across age groups. Households with children were more likely than households with no children to discard multiple foods. Household income did not affect willingness to throw away food past the date, by and large, but the lowest income category (less than \$35k/year) was more likely to "never" discard raw chicken and deli meats—more expensive items—past the "use by" date.

How often do consumers report discarding foods that have passed the "use by" date?



Conclusion

This survey aimed to understand the extent to which consumers are confused about date labels, learn about their perceptions regarding whether labels are federally regulated, and identify which labels most clearly communicate quality *versus* safety. This report confirms previous findings that consumers are confused by date labels. As a result, they unnecessarily discard food with a high frequency, which can be a significant contributor to the wasted food problem in the United States. In addition, as millennials were more likely to view date labels as indicators of food safety, more likely to think date labels are federally regulated, and more likely to discard food past the date on the label, survey findings show that work is needed to ensure that food waste does not continue to increase with future generations of consumers. Survey results also identified those date labels that most clearly communicate safety *versus* quality, which can be helpful as industry, nonprofit organizations, and policy-makers examine options to improve consumer awareness by standardizing date labels across the food supply.

Survey results indicate that standardizing date labels and increasing consumer education on the meaning of date labels can help to reduce the significant amount of food that consumers unnecessarily discard. Consumers discarding less food can help meet the U.S.'s national food waste reduction goal to halve the country's level of food waste by 2030, and it can decrease the amount of precious resources that are wasted producing food that unnecessarily ends up in the landfill instead of on consumer's plates.

References

1. Hall K.D., Guo J., Dore M., Chow C.C. *The progressive increase of food waste in America and its environmental impact*. PLOS ONE. 2009 Nov. 25;4(11): e7940.
2. ReFED. *A Roadmap to reduce consumer food waste by 20 percent*. 2016. www.refed.com.
3. Harvard Food Law and Policy Clinic and National Resources Defense Council. *The Dating Game: How confusing date labels lead to food waste in America*. 2013. <http://www.chlpi.org/wp-content/uploads/2013/12/dating-game-report.pdf>.
4. Waste & Resources Action Programme. *Consumer insight: date labels and storage guidance*. 2011. <http://www.wrap.org.uk/content/consumer-insight-date-labels-and-storage-guidance>.
5. United States Department of Agriculture. *Quantitative Assessment of Relative Risk to Public Health from Foodborne *Listeria monocytogenes* Among Selected Categories of Ready-to-Eat Foods*. 2003. <http://www.fda.gov/downloads/Food/FoodScienceResearch/UCM197330.pdf>.

ATTACHMENT 2

The Dating Game: How Confusing Food Date Labels Lead to Food Waste in America

September 2013
Report R:13-09-A
NRDC



Authors

This report was produced in partnership between the Harvard Food Law and Policy Clinic and the Natural Resources Defense Council.

The lead author of this report is Emily Broad Leib, Director of the Harvard Law School Food Law and Policy Clinic (a division of the Center for Health Law and Policy Innovation), with input, editing, and production support from Dana Gunders at the Natural Resources Defense Council.

Additional coauthors include: Juliana Ferro, Annika Nielsen, Grace Nosek, and Jason Qu.

Portions of this report are based on previous research and writing by Jacqueline Pierluisi, Lauren Sidner, and Nathan Rosenberg, students in the Harvard Food Law and Policy Clinic, with research assistance from Harvard Food Law Society members Amanda Ravich, Elizabeth Rosen, Erin Schwartz, Jane Wang Williams, and Margaret Wilson.

Acknowledgements

This report would not have been possible without the assistance and cooperation of Mitzi Baum, Kendra Bird, Jean Buzby, Erin Daly, Dr. Angela Fraser, Dr. Elise Golan, Wayne Melichar, Dr. Elliot Ryser, Alex Schmitt, and Jean Schwab.

We'd also like to thank the following people for reviewing this report. Reviewers do not necessarily concur with the paper's recommendations but have advised on portions of its content.

Jose Alvarez, Senior Lecturer, Harvard Business School; former CEO, Stop & Shop/Giant Landover

Jonathan Bloom, Author of *American Wasteland*

Sarah Klein, Senior Staff Attorney, Food Safety Program Center for Science in the Public Interest

Dr. Theodore Labuza, Professor of Food Science and Engineering, Univ. of Minnesota

Dr. Roni Neff, Program Director, Food System Sustainability and Public Health, Johns Hopkins Center for a Livable Future

Doug Rauch, Founder, Daily Table; former President, Trader Joe's

About the Harvard Law School Food Law and Policy Clinic

The Harvard Food Law and Policy Clinic, a division of the Center for Health Law and Policy Innovation, is an experiential teaching program of Harvard Law School that links law students with opportunities to serve clients and communities grappling with various food law and policy issues. The Clinic strives to increase access to healthy foods, prevent diet-related diseases, and assist small and sustainable farmers and producers in participating in local food markets. For more information,

visit <http://blogs.law.harvard.edu/foodpolicyinitiative/> or follow on Twitter @HarvardFLPC.

About NRDC

The Natural Resources Defense Council (NRDC) is an international nonprofit environmental organization with more than 1.3 million members and online activists. Since 1970, NRDC's lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Montana, and Beijing. Visit them at www.nrdc.org and follow them on Twitter @NRDC.

Table of Contents

- Executive Summary
- Introduction
- Chapter 1: History of U.S. Date Labeling: A Piecemeal Response to Consumer Interest in Date Labels
- Chapter 2: The Current Regulatory Regime
 - Federal Law
 - Federal Voluntary Guidance
 - State Law
 - Local Regulations
 - The Role of Industry
- Chapter 3: Shortcomings of the Current System
 - Inconsistent and Unreliable Wording and Methods of Determination
 - Consumer Confusion and Misinterpretation of Link to Food Safety
 - Consumer Food Waste
 - Economic Losses and Inefficiencies for Manufacturers, Distributors, and Retailers
 - Challenges for Food Recovery Initiatives and Anti-Hunger Organizations
- Chapter 4: Recommendations
 - Standardize and Clarify the Food Date Labeling System Across the United States
 - The Role of Industry, Government, and Consumers
- Appendix A: Congressional Delegation of Food Labeling Authority to Agencies
- Appendix B: State Requirements in Brief; Supporting Charts for *Figures 2* and *3*
- Appendix C: State Date Labeling Regulations in Full
- Endnotes

Executive Summary

The waste of edible food by consumers, retailers, and manufacturers poses a significant burden to the American food system. Wasted food costs consumers and industry money; squanders important natural resources that are used to grow, process, distribute, and store America's food supply; and represents a missed opportunity to feed the millions of food-insecure households in the United States that are struggling to access healthy, affordable food. Misinterpretation of the date labels on foods is a key factor leading to this waste.



Photo: www.foodwaste.movie.com.

Improving date labeling policies and practices can decrease consumer confusion, which will not only reduce food waste, but also improve food safety. Date labels on food come in a dizzying variety of forms including “use by,” “best before,” “sell by,” and “enjoy by” dates, yet these simple markers are both poorly understood and surprisingly under-regulated, such that their meanings and timeframes are generally not defined in law. Because regulators, industry players, and citizens have become accustomed to seeing date labels on many food products over time, policymakers have not asked important questions about the date labeling system, and there has been a dearth of rigorous policy analyses of how these labels affect consumers’ choices surrounding purchasing and discarding food products.

This policy brief examines the historical impetus for placing dates on food—namely a desire to indicate products’ freshness—and the ways in which the system has failed to meet this goal, while creating a range of ancillary problems. Relevant Federal laws and authorities are described along with a review of the legislative history on this topic, and a comparison of state laws related to food date labeling is provided. The paper then describes why and how date labels contribute to the waste of edible food in the United States and explains specifically how:

- The lack of binding Federal standards, and the resultant state and local variability in date labeling rules, has led to a proliferation of diverse and inconsistent date labeling practices in the food industry. Such inconsistency exists on multiple levels, including whether manufacturers affix a date label in the first place, how they choose which label phrase to apply, varying meanings for the same phrase, and the wide range of methods by which the date on a product is determined. The result is that consumers cannot rely on the dates on food to consistently have the same meaning.
- This convoluted system is not achieving what date labeling was historically designed to do—provide indicators of freshness. Rather, it creates confusion and leads many consumers to believe, mistakenly, that date labels are signals of a food’s microbial safety, which unduly downplays the importance of more pertinent food safety indicators.
- This confusion also leads to considerable amounts of avoidable food waste as the mistaken belief that past-date foods are categorically unsuitable for consumption causes consumers to discard food prematurely.
- Inconsistent date labeling policies and practices harm the interests of manufacturers and retailers by creating increased compliance burdens and food waste at the manufacturer/retail level.
- Date labeling practices hinder food recovery and redistribution efforts by making the handling of past-date foods administratively and legally complex.

After analyzing these five core problems with the contemporary date labeling regime, this report will introduce recommendations on how to begin to remedy the

food waste and food safety issues related to date labeling, by creating a system in which date labels more clearly communicate information. Recommendations are broken into two sections: the first section proposes key changes to the date labeling system across the United States, and the second section identifies relevant stakeholders and describes actions that each should take to address the issue.

In brief, the recommendations are as follows:

I. Standardize and Clarify the Food Date Labeling System Across the United States

1. **Make “sell by” dates invisible to the consumer:** “Sell by” dates generate confusion and offer consumers no useful guidance once they have brought their purchases home. Therefore, “sell by” and other date labels that are used for stock control by retailers should be made invisible to consumers. Products should only display dates that are intended to communicate to the consumer.
2. **Establish a reliable, coherent, and uniform consumer-facing dating system:** The following five recommendations on how to standardize and clarify date labels will help establish a more effective system of consumer-facing dates that consumers can understand and trust. The system should be consistent across products to the extent it makes sense.
 - **Establish standard, clear language for both quality-based and safety-based date labels:** The language used before dates on food products should be clarified and standardized to better inform consumers of the meaning of different dates. The words used should (1) be uniform for a particular meaning across the country and across products; (2) be unambiguous in the information they convey; and (3) clearly delineate between safety-based and quality-based dates.
 - **Include “freeze by” dates and freezing information where applicable:** Promote the use of “freeze by” dates on perishable food products to help raise consumer awareness of the benefits of freezing foods and the abundance of food products that can be successfully frozen in order to extend shelf life.
 - **Remove or replace quality-based dates on nonperishable, shelf-stable products:** Removing “best before” or other quality dates from shelf-stable, nonperishable foods for which safety is not a concern would reduce waste of these products and increase the weight given to labels placed on products that do have safety concerns. Some type of date may still be useful, such as an indication of shelf life after opening (*e.g.*, “Best within XX days of opening”) or the date on which the product was packed (*e.g.*, “Maximum quality XX months/years after pack date”).
 - **Ensure date labels are clearly and predictably located on packages:** Consumers should be able to easily locate and understand date labeling information on packages, perhaps through the use of a standard “safe handling” information box, akin to the Nutrition Facts panel.



- **Employ more transparent methods for selecting dates:** Create a set of best practices that manufacturers and retailers can use to determine date labels for products, and consumers can learn about if interested.

3. ***Increase the use of safe handling instructions and “smart labels”:*** Provide clear, pertinent food safety information alongside date labels. This could include additional phrases, QR codes that allow consumers to scan for more information, or “smart labels” like time-temperature indicators.

II. *The Role of Industry, Government and Consumers*

Collaboration amongst different stakeholders and entities is necessary to standardize and clarify the current date labeling regime. Each stakeholder has a role to play to improve the system. Three groups of stakeholders have been identified; solutions targeted at each group include:

1. ***Food Industry Actors:*** Industry actors can take meaningful steps to reduce date label confusion, reduce food waste, and improve consumer safety by:
 - **Converting** to a system which adopts the recommended changes above: making “sell by” information invisible to consumers; establishing a standardized, easily understandable consumer-facing dating system; and providing more safe handling information;
 - **selling** or donating near-expiration or expired products; and
 - **educating** consumers on the meaning of date labels and on safe food handling.
2. ***Government:*** Congress, Federal administrative agencies, state legislatures, and state agencies should work towards a system of date labeling that is more standardized, more easily understood by consumers, and less arbitrary. The Federal Food and Drug Administration and U.S. Department of Agriculture have existing authority to regulate misleading labels, and should use this authority to reduce confusion around date labeling. Otherwise, Congress can act to create overarching Federal legislation. Regardless of whether a Federal law is passed, existing Federal guidance should be strengthened and streamlined so that states following such guidance will begin to implement more similar state laws and regulations.
3. ***Consumers and Consumer-Facing Agencies and Organizations:*** Increased consumer education—covering everything from the meaning of date labels, to the importance of proper refrigeration temperature, to strategies on how to determine whether food is safe and wholesome to eat—will be crucial regardless of whether policymakers decide to implement changes to the current date labeling regime or to maintain the *status quo*. Federal, state, and local agencies and organizations can conduct consumer outreach and education to build awareness of proper food safety, handling, and storage, as well as the high rates of food waste due to date label confusion and the detrimental effects of such waste. Consumers can act now by educating themselves as well.

Revising the convoluted and ineffective system of date labels is one of the most straightforward ways we can address the rising rates wasted food, while providing a service to consumers by improving both food safety outcomes and economic impacts.

Introduction

America is fixated on food—we have television channels devoted to it, competitions revolving around it, and every manner of book, blog, and newspaper column revering it. For a country so obsessed with food, it is alarming how much of it Americans throw away, despite the serious ethical, environmental, and financial implications of this waste. An estimated 40 percent of food in the United States goes uneaten,¹ and according to even the most conservative estimates, Americans waste 160 billion pounds of food each year.² The rate of food loss in the United States far exceeds that of much of the rest of the world, with the average American consumer wasting ten times as much as food as the average consumer in Southeast Asia.³ One key contributor to wasting food is confusion around food expiration dates.

Despite the high rate of food waste, almost 15 percent of U.S. households were food-insecure at some point in 2011.⁴ It has been estimated that redistributing 30 percent of all the food lost in the United States could feed every food-insecure American their *total* diet.⁵

Wasted food has serious environmental consequences as well.⁶ When food is wasted, all of the resources used to produce, store, transport, and handle that food—including arable land, labor, energy, water, chemicals, and oil—are also wasted.⁷ A study by McKinsey & Company projected that roughly 100 million acres of cropland could be saved if developed countries reduced consumer food waste by 30 percent.⁸

It is estimated that approximately 25 percent of America's freshwater use goes into the production of wasted food.⁹

Compounding these environmental and ethical harms are the financial losses incurred by American families when enough food to fill the Rose Bowl is wasted each day in the United States.¹⁰ At the consumer level, according to one calculation, food waste costs the average American family of four \$1,365–\$2,275 per year.¹¹

Those studying the problem of food waste in the United States and abroad have identified confusion over food date labeling as a major contributing factor at both the industry and the consumer level.¹² Research from the United Kingdom support a connection between the misinterpretation of date labels and wasted food,¹³ and a study conducted by the Bio Intelligence Service for the European Commission identified the standardization of food date labeling as an important policy intervention to reduce food waste.¹⁴

This policy brief explores the relationship between food waste, food safety, and the regulatory systems that govern, or fail to govern, food date labeling practices in the United States. It will describe how the contemporary date labeling regime creates confusion among consumers, obstacles for food service providers, and inefficiencies in the food industry, ultimately contributing to and exacerbating the waste of edible food in this country.

The brief will begin by tracing the history of food date labeling in the United States and then proceed to analyze the current labeling landscape at the Federal, state, local, and industry levels. Drawing on the results of a comprehensive literature review, a 50 state study of current date labeling regulations, and data from interviews with experts in government, industry, and food science, this paper will outline key problems with the contemporary date labeling regime: its disorienting effects on consumers, its failure to convey important food safety information (despite the appearance of doing so), its negative economic impacts across the food sector, and its hindrance of food recovery initiatives. All of these factors lead directly to food waste in American homes and across the supply chain, throughout production, distribution, retail, food service, and home consumption.

Based on this analysis, the brief will conclude by outlining recommendations for how different stakeholders can take action to improve current practices and foster policy changes to begin to remedy the negative impacts of date labeling on food waste in the United States.

Chapter 1: History of U.S. Date Labeling: A Piecemeal Response To Consumer Interest in Date Labels

The urbanization of the United States divorced most consumers from the creation of their food—these consumers began purchasing the bulk of their food, rather than growing it themselves, and had little personal knowledge concerning the freshness and shelf life of their purchases.¹⁵ As Americans began to buy more processed or packaged foods, this knowledge deficit forced consumers to rely on assurances from retailers that the foods they were purchasing were fresh, yet these assurances often proved insufficient to fully dispel consumer fears.¹⁶

By the 1970's, consumer concern surrounding the freshness of food crystallized,¹⁷ and diverse stakeholders within the food industry, government, and public interest sector began to seriously explore what is known as open dating in response to consumer unease. Open dating uses a date label that includes a month, day, and year in a format clearly evident to the consumer.¹⁸ Out of a nationwide survey of 250,000 shoppers published in 1975, 89 percent of respondents favored this kind of dating system.¹⁹ According to another survey, 95 percent of respondents listed open dating as the “most useful” consumer service for addressing product freshness concerns.²⁰ “Open” dating differed from the long-established industry practice of “closed” dating, in which manufacturers and retailers used symbols or numerical codes that were undecipherable to consumers to manage their inventory and stock rotation,²¹ without any intention of relaying that information directly to consumers.²² Throughout the 1970s, many supermarkets voluntarily adopted open dating systems in response to mounting consumer interest.²³

Government actors also began to react to rising consumer demand for more objective, accessible indicators of product freshness and quality during this period. By 1973, ten state governments had adopted laws or regulations mandating open dating for certain classes of food products.²⁴ The Federal Government also began increasing its engagement with the issue of date labeling by supporting research on this topic. In 1975, the General Accounting Office (now the Government Accountability Office or GAO) issued a report to Congress focusing on “problems with stale or spoiled foods” and advocating a uniform date labeling system to address consumer concerns.²⁵ In 1979, the Office of Technology Assessment (OTA), which existed as an office of the U.S. Congress from 1972 to 1995, was assisted by a task

force of consumer representatives, retailers, processors, wholesalers, scientific experts, and government officials in publishing a comprehensive report for the Senate on open dating to address “[consumer] concern over the freshness of food.”²⁶ Critically, even in the 1970s supporters of open dating recognized that assuring the microbiological safety of food could not be achieved using date labels.²⁷ Indeed, the OTA report flatly stated that “there is little or no benefit derived from open dating in terms of improved microbiological safety.”²⁸ An analysis of the intersection between date labels and food safety will be discussed at length in the sections below.

Food labeling received the concerted attention of Congress during this time period, yet legislation on date labeling ultimately was not passed.²⁹ Congressional action could have regulated date labels across the country in a predictable, empirically-grounded way and would have standardized industry practices and preempted widespread variation in state regulations. Members of Congress recognized these benefits, and during the 1970s and 1980s introduced several legislative proposals to institute a uniform open code dating system on a nationwide scale, mostly via amendments to the Federal Food, Drug, and Cosmetic Act.³⁰ At least ten bills were introduced by the 93rd Congress (1973–1975) alone.³¹ The 1975 GAO report encouraged Congress to adopt one of these proposed amendments.³² The Food and Drug Administration (FDA) also welcomed the potential for an explicit statutory mandate over date labeling, even while maintaining that it already had authority to regulate date labeling under its existing powers to control adulteration and misbranding.³³ However, none of the Federal legislative efforts gained enough momentum to pass into law and create a uniform, nationwide system.³⁴

A variety of stakeholders shaped the debate about open dating legislation. In addition to the role consumers played in demanding more information about their products, various food industry actors also played a role. At first, supermarket chains opposed such regulation because they believed that “open dating would add to the price of the food, since shoppers would pick over the packages on the supermarket shelves, selecting only the newest,”³⁵ causing increased losses of outdated, but edible food, and thus forcing supermarkets to raise prices in order to account for the discarded products.³⁶ However, after this initial opposition, supermarkets began to use open dates voluntarily in response to consumer demand, and even advertised the new practice as a promotional strategy to attract customers.³⁷ Then, when Congress tried to pass legislation that would regulate open dating, spokespersons from the National Association of Food Chains argued before Congress that the industry was already voluntarily spending millions of dollars on food labeling and that the additional Federal requirements would simply impose higher costs and “deter [members of the food chains] from adopting further voluntary, progressive programs in the future.”³⁸

Policymakers were also discouraged from coming up with a standard Federal model because of the difficulties of trying to harmonize the “differences in views on type of date, explanation of date, and foods covered.”³⁹ Further, food lawyers—even those advocating for a uniform date labeling system—questioned whether Congress was “willing to pass a strong preemption provision” that would invalidate all state laws, and thus successfully achieve a uniform national date labeling regime consistently applied in all states.⁴⁰

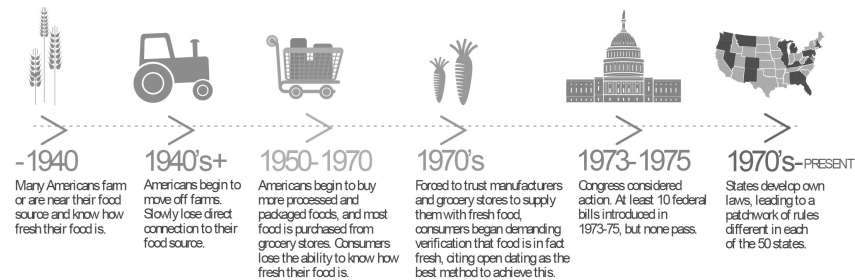
Due to the lack of success of open dating legislation, the 1970s saw the uneven and piecemeal creation of an American date labeling regime, as state governments and industry actors responded to consumers’ interest in fresh, unspoiled food in a range of ways, but with no unifying strategy at the Federal level.⁴¹ The resulting inconsistencies across state and local laws quickly began to create consumer confusion⁴² and industry distress⁴³ which did not go unnoticed, even by early observers. Food lawyers recognized that the proliferation of inconsistent state laws could affect interstate commerce, and hinted at the idea that it could inflate the price of food, reiterating the initial concern raised by supermarket chains that open labeling would lead to food waste and higher food prices.⁴⁴ For example, costs would go up if food companies needed to use separate packaging lines for products entering each jurisdiction in order to comply with divergent state laws.⁴⁵

Streamlining open dating laws across the nation, so that the food industry could adapt to a single legal regime instead of trying to comply with the proliferation of inconsistent state laws, provided then and continues to provide a strong rationale for Congress to pass legislation that can improve productivity and efficiency in the food industry. This would also ensure that consumers are provided consistent and coherent messages from the dates they are seeing.⁴⁶ The GAO concluded its discussion of open code dating in 1975 by warning that failure to implement a national system would “add to confusion, because as open dating is used on more products, it would continue letting each manufacturer, retailer, or state choose its own dating system.”⁴⁷ Nevertheless, no Federal legislation has been passed for more than 40

years and this lack of uniformity persists today, leading to wasteful food practices within the American food system.

After a more than 2 decade lapse in Federal consideration of these issues, the next move towards a Federal date labeling requirement occurred in the late 1990s. In 1999, Congressman Frank Pallone (D-NJ) introduced the National Uniform Food Safety Labeling Act of 1999, which would have required food to bear a date after which the food should no longer be sold “because of diminution of quality, nutrient availability, or safety,” preceded by the words “use by.”⁴⁸ The bill was stalled at the House Energy and Commerce Committee and did not pass.

Similarly, in 1999, Congresswoman Nita Lowey (D-NY) introduced the Food Freshness Disclosure Act and reintroduced similar bills in 2001, 2003, 2005, 2007, and 2009.⁴⁹ All the bills were referred to the House Energy and Commerce Committee, but none passed out of Committee. The bills proposed to amend the Food, Drug, and Cosmetic Act by adding the requirement of applying uniform freshness dates on food. Uniformity would be achieved by requiring that all freshness dates be preceded by the phrase “best if used by.”⁵⁰ Foods identified under 21 CFR § 101.9(j) as exempt from the nutritional labeling requirements of the Nutritional Labeling and Education Act (including food products served at restaurants or schools, raw fruits and vegetables, and certain ready-to-eat foods, such as foods sold at bakeries) would also be exempt from this legislation.⁵¹ The bill would require the “manufacturer, packer, or distributor of the food” to select the freshness date based on tests that demonstrate that when consumed, the nutrient quality of the food would still be the same as indicated by the nutrition facts panel.⁵³ If passed into law, this legislation would be a positive step towards achieving a uniform Federal date labeling system, but it could be strengthened in several ways, as detailed by the recommendations included in this report. For example, the new regulation could require affixing a safety-based date with a different standardized term such as “safe if used by” on products that are empirically proven to cause food safety risks rather than requiring a “best if used by” date on all food products.



Chapter 2: The Current Regulatory Regime

To understand how the food date labeling system contributes to America's food waste problem, it is essential to review the different legislative and regulatory systems that currently govern date labeling. As discussed above, despite occasional Federal interest, no legislation has been passed, and thus Federal law generally does not require or regulate the use of date labels.⁵⁴ This lack of coordinated action at the Federal level increases the complexity of the food labeling regime by causing a regulatory void that states and localities have attempted to fill in various ways, resulting in a tremendously varied set of state and local laws regarding the use of date labels. Industry has also attempted to provide direction, with some food trade associations that don't necessarily help to improve public health creating voluntary guidance on date labeling practices for specific commodities. Because none of these approaches are comprehensive, individual manufacturers and retailers are often left to decide how date labels are actually implemented.⁵⁵



The lack of formal definitions or standardization across date labeling policies and practices is a problem because it gives unreliable signals to consumers. Such inconsistency exists on multiple levels, including *whether* manufacturers affix a date label in the first place, how they choose which label *category* to apply, internal inconsistency *within* each label category due to the lack of formal legal definitions, and variability surrounding *how* the date used on a product is determined. The result is that consumers cannot rely on the dates on food to consistently have the same meaning.

This section analyzes the ways in which these regulatory and industry forces operate and interact with each other. Ironically, despite the original intention of increasing consumer knowledge about their food, date labeling has become a largely incoherent signaling device for consumers. Instead of offering the type of clear and unambiguous information that consumers seek, date labels can and do confuse and mislead them.

Federal Law

The scope of Federal laws governing food labeling is broad, but does not currently address date labeling with any specificity or consistency. Congress clearly has the power to regulate date labels under the Commerce Clause in the U.S. Constitution, which gives Congress power to regulate products sold in interstate commerce.⁵⁶ Using this power, Congress has passed a number of Federal statutes that govern labeling of different types of food, with two agencies having the clearest delegation from Congress of authority over food labeling: FDA and the U.S. Department of Agriculture (USDA). However, as described in the previous section, because Congress has not successfully passed national date labeling legislation to date, no agencies have been given explicit authority to regulate in this realm. The statutes and the provisions that are most relevant to food labeling are discussed below, with excerpts of language from each Federal law included in *Appendix A*.



Congress clearly has the power to regulate date labels under the Commerce Clause in the U.S. Constitution, which gives Congress power to regulate products sold in interstate commerce.

Agency Authority to Regulate

Food Labeling and Existing Laws Congress has never mandated that FDA or USDA implement a national date labeling regime;⁵⁷ however, it has delegated general authority to both agencies to ensure food safety and protect consumers from de-

ceptive or misleading food package information.⁵⁸ Both FDA and USDA have the power to regulate food labeling for the foods that fall under their respective purviews. FDA has statutory authority to regulate the safety of all foods with the exception of meat, poultry, and some fish, under the Food, Drug, and Cosmetic Act of 1938, the Nutritional Labeling and Education Act of 1990, the Fair Packaging and Labeling Act of 1966, the Infant Formula Act of 1980, and the Food Safety Modernization Act of 2011.⁵⁹ On the other hand, USDA has jurisdiction to regulate meat, poultry, and certain egg products, under the Poultry Products Inspection Act of 1957, the Federal Meat Inspection Act of 1906, the Egg Products Inspection Act of 1970, the Perishable Agricultural Commodities Act of 1930, and the Agricultural Marketing Act of 1946.⁶⁰ FDA and USDA share jurisdiction over certain products including eggs⁶¹ and fruits and vegetables.⁶²

FDA receives broad food labeling authority under several of the Acts mentioned above, with its powers to regulate misbranded foods and misleading labels under the Food, Drug, and Cosmetic Act being the most robust.⁶³ Since one of the purposes of the Food, Drug, and Cosmetic Act is to protect the interest of consumers, the Act prohibits the “adulteration or misbranding of any food.”⁶⁴ Food under FDA’s jurisdiction may be considered misbranded if the food’s label is false or misleading “in any particular.”⁶⁵ USDA also has the power to regulate misleading labels for all products under its purview, and has vested the Food Safety and Inspection Service (FSIS), an enforcement agency within USDA, with this authority.⁶⁶ Under the Acts mentioned above, USDA has broad authority to promulgate regulations to protect consumers and ensure that products specifically regulated under each Act are not misbranded.⁶⁷ Similar to the Food, Drug, and Cosmetic Act, under the provisions of these statutes, labels are considered misbranded if they are false or misleading “in any particular.”⁶⁸ As explained throughout the report, the current date label system leads to consumer confusion and the waste of edible food.

If FDA and/or USDA agree that date labels are “misleading,” they could make a case that their existing authority should be interpreted to allow them to regulate date labeling as a form of misbranding of food items, without any additional action on the part of Congress.

Importantly, these laws also require that FDA and USDA work together in promulgating consistent regulations. For example, under both the Poultry Products Inspection Act and the Federal Meat Inspection Act, USDA must prescribe regulations for labels that are consistent with the Food, Drug, and Cosmetic Act labeling standards.⁶⁹ Further, the Egg Products Inspection Act provides that the two agencies must cooperate with one another in order to decrease the burden on interstate commerce in labeling of eggs, because packages that are not properly labeled could “be sold at lower prices and compete unfairly with the wholesome, not adulterated, and properly labeled and packaged products.”⁷⁰ In the past, FDA and USDA have issued joint notices about the regulation of eggs, specifically requesting comments on whether the varying practices for placing expiration dates on egg products would violate the misbranding provisions of the Food, Drug, and Cosmetic Act and “be misleading to consumers given their expectations.”⁷¹ These are some examples of how the two agencies interact with each other and share responsibility to ensure consistency across their respective regulations. FDA and USDA should similarly work together to promulgate regulations that address the misleading impact of date labels by ensuring that date labels are standardized across food products.

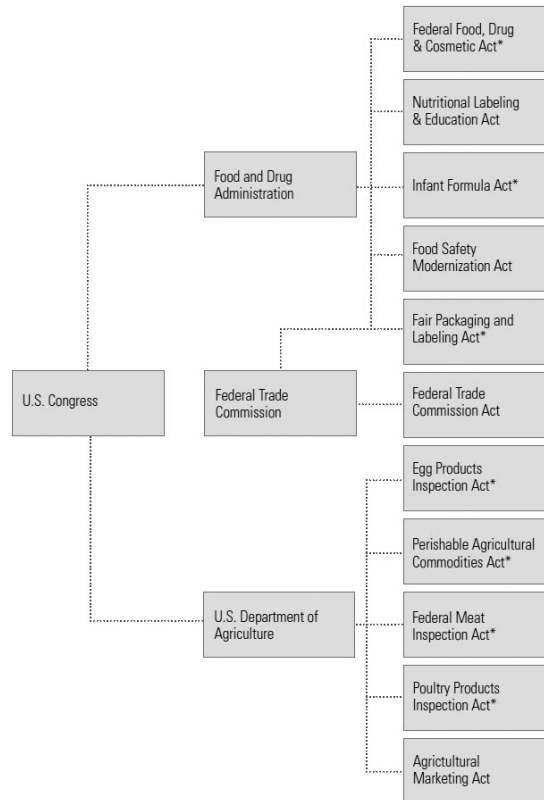
Other government agencies also share the role of protecting the interest of consumers from deceptive practices. In particular, the Federal Trade Commission (FTC) has food labeling authority under the Federal Trade Commission Act of 1914 if action is needed to prevent “unfair methods of competition” or “unfair or deceptive acts or practices in or affecting commerce.”⁷² Further, FDA and FTC have joint authority under the Fair Packaging and Labeling Act to create regulations “necessary to prevent the deception of consumers” for any consumer commodities, including food.⁷³ In response to their shared authority under Fair Packaging and Labeling Act, FDA and FTC created a memorandum of understanding that gives FDA the authority to regulate food labeling and FTC the authority to regulate food advertising in order to prevent misleading information from reaching the consumer.⁷⁴

If FDA and/or USDA agree that date labels are “misleading,” they could make a case that their existing authority should be interpreted to allow them to regulate date labeling as a form of misbranding of food items, without any additional action on the part of Congress.

Similar to any coordinated response by FDA and USDA, the shared responsibility already utilized by FDA and FTC could be a model for a joint response to date labeling regulation, showcasing a way for agencies to work together to streamline date labeling practices across different foods.

Figure 1 below includes an illustration of the Federal agencies and Acts that govern food labeling.

Figure 1: Congressional and Agency Authority in the Federal Food Labeling System**



* Acts which give authority pertaining to date labeling on foods.

** Note that FDA may have additional enforcement authority shared with other agencies with regard to food safety, but this chart focuses on primary authority over labeling for certain food types.

The Current Federal Labeling Regime—How FDA and USDA Use Their Legal Authority

While FDA could interpret its existing statutory authority to enable it to regulate date labeling practices for the foods under its purview,⁷⁵ the agency has not done so. According to FDA, it “does not require food firms to place ‘expired by’, ‘use by’ or ‘best before’ dates on food products”; instead, “this information is entirely at the discretion of the manufacturer.”⁷⁶ The only exception is infant formula, which is subject to explicit FDA date labeling requirements.⁷⁷ In response to scandals resulting from recalls of infant formula products that were causing illnesses among children because the products lacked sufficient nutrients,⁷⁸ and due to findings that industry had too much discretion to decide the appropriate nutritional content of these products,⁷⁹ Congress passed the Infant Formula Act of 1980, mandating that FDA set uniform standards for the nutritional content of these products.⁸⁰ However, unlike the arguments around freshness discussed in the History Section, the Infant Formula Act focused only on the nutritional content of infant formula products. Under this Act, FDA established a range of regulations impacting infant formula, including a requirement that its labels include “use by” dates.⁸¹ The regulations mandate that determinations used to assign such dates to infant formula must be

based on tests that prove the concentration of nutrients is adequate for the health of children up to the marked date.⁸²

When compared to FDA, USDA more explicitly addresses date labeling for food products under its authority. With a few exceptions, such as requiring a “pack date” for poultry products⁸³ and a lot number or “pack date” for egg products certified by USDA,⁸⁴ USDA also does not generally require date labels on regulated products.⁸⁵ However, the agency does have technical requirements addressing how dates should be displayed on USDA-regulated food products if they are employed voluntarily or according to state law. Under these rules, a calendar date “may” be applied to USDA-regulated products so long as it includes a day and a month, and possibly a year in the case of frozen or shelf-stable products.⁸⁶ USDA also requires calendar dates to be preceded by “a phrase explaining the meaning of such date, in terms of ‘packing’ date, ‘sell by’ date, or ‘use before’ date,” and notes that such dates can be implemented “with or without a further qualifying phrase, *e.g.*, ‘For Maximum Freshness’ or ‘For Best Quality,’ and such phrases shall be approved by the Administrator [pursuant to procedures outlined in 9 CFR §317.4].”⁸⁷ This latter rule is arguably the most robust Federal regulation that exists, but it is limited in three respects: (1) it applies only to USDA-regulated foods (poultry, meat, certain egg products); (2) the three explanatory phrases that are allowed (“packing,” “sell by,” and “use before”) are undefined by the regulation and are allowed to be used interchangeably, which highlights their lack of meaning and inability to communicate significance to consumers; and (3) the rule makes the use of “further qualifying phrases,” which could help correct ambiguity, totally optional.

Federal Voluntary Guidance

Instead of actively regulating date labeling practices in a uniform manner, the Federal Government has provided mostly voluntary guidance on this subject. One example of voluntary guidance is the “Uniform Open Dating Regulation,”⁸⁸ a product of the National Institute of Standards and Technology (NIST), a research and advisory body within the U.S. Department of Commerce, in partnership with the National Conference on Weights and Measures (NCWM), a not-for-profit corporation committed to creating uniform national standards for various units of measurement.⁸⁹ Recognizing that the “lack of uniformity between jurisdictions could impede the orderly flow of commerce,”⁹⁰ the NCWM has promulgated model regulations on open dating which they hope will be adopted by all state and local jurisdictions.⁹¹ NCWM’s model regulations, which are published in NIST Handbook 130,⁹² set “sell by” as the label date that jurisdictions should require for pre-packaged perishable foods and “best if used by” as the date that should be required for semi-perishable or long-shelf-life foods.⁹³ The model regulations allow all foods to be sold after their label dates, provided that they are of good quality and that perishable foods are clearly marked as being past-date.⁹⁴ NIST Handbook 130 also includes guidance for properly calculating the label date⁹⁵ and for expressing the date on packaging.⁹⁶

Thus far, according to the 2013 edition of NIST Handbook 130, five states (Arkansas, Connecticut, Nevada, Oklahoma, and West Virginia) have regulations in place that automatically adopt the most recent NCWM Uniform Open Dating Regulation published in NIST Handbook 130.⁹⁷ Three more states, (Michigan, South Dakota, and Washington) and the U.S. Virgin Islands have adopted an earlier version of NIST Handbook 130 in whole or in part.⁹⁸ In sum, while Federal guidance on the topic of date labels does exist, only a minority of states have implemented this voluntary guidance. Even though widespread adoption of the most current edition of the guidance would create uniformity and standardization across all states that adopt its open dating provisions, the guidance in NIST Handbook 130 has flaws. For example, as discussed in later sections, utilizing “sell by” dates increases confusion and food waste, and thus these dates are not as effective at communicating their significance to consumers. Suggestions on how date labeling guidance can be strengthened to effectively decrease consumer confusion, improve food safety, and reduce food waste will be discussed below in the Recommendations section of the report.

Another example of Federal voluntary guidance is the FDA Food Code.⁹⁹ The FDA Food Code is a reference document issued by FDA that provides model regulations for state and local governments on food safety laws.¹⁰⁰ Like NIST Handbook 130, adoption of the code is voluntary. However, many states have chosen to adopt it because the FDA Food Code reflects the expertise of dozens of food safety experts. Importantly, the Code itself is not law; it only becomes binding when states adopt it by statute or regulation, and states typically add their own modifications. A new version of the FDA Food Code was published every 2 years until 2001 and is now published every 4 years, with the most recent version published in 2009.¹⁰¹

In sum, while Federal guidance on the topic of date labels does exist, only a minority of states have implemented this voluntary guidance.

The FDA Food Code addresses date labeling requirements in three different areas: shellfish;¹⁰² refrigerated, ready-to-eat potentially hazardous food;¹⁰³ and reduced oxygen packaging.¹⁰⁴ For example, for shellfish, the FDA Food Code suggests a date labeling requirement for shellfish¹⁰⁵ that has been adopted by many states. For refrigerated, ready-to-eat potentially hazardous foods “prepared and held in a food establishment for more than 24 hours,” the FDA Food Code requires that they “be clearly marked to indicate the date or day by which the food shall be consumed on the premises, sold, or discarded based on [specified] temperature and time combinations.”¹⁰⁶ The FDA Food Code does provide some guidance, but it only applies date labeling language to a limited number of food items.¹⁰⁷ As mentioned above, states adopt language of the FDA Food Code in their own legislation or regulations; for example 13 states have adopted almost the exact same language as the shellfish date labeling provision in the FDA Food Code.¹⁰⁸

State Law

The Supremacy Clause of the Constitution provides that when state and Federal laws conflict, the conflicting state law will be invalidated.¹⁰⁹ Thus, state statutes are not preempted by Federal law if they do not directly conflict with existing Federal legislation.¹¹⁰ Because Federal regulation of date labels is so limited, states consequently have vast discretion to regulate date labels in almost any way they see fit. Certain states have used that discretion enthusiastically, creating a system of stringent requirements for date labels, while others have not regulated date labels at all. The result is an inconsistent state regulatory scheme that is not necessarily improving public health. One possible reason for such wide variation is that depending on the state, date labels fall under the purview of different state government departments, including Department of Health, Department of Agriculture, Department of Weights and Measures, Department of Commerce, or others.¹¹¹

Furthermore, state law is not static; state legislatures are constantly updating and amending the date labeling requirements. Several states passed new date labeling laws within the past year. For example, Georgia amended its date labeling rules in 2012 by adding a definition for the term “expiration date,” (now defined as being “synonymous with Pull Date, Best-By Date, Best Before Date, Use-By Date, and Sell-By Date,” and meaning “the last date on which the following FOOD products can be sold at retail or wholesale”)¹¹² and preventing sale after the expiration date of prepackaged sandwiches, eggs, infant formula, shucked oysters, milk, and potentially hazardous food labeled as “keep refrigerated.”¹¹³

Certain states have used that discretion enthusiastically, creating a system of stringent requirements for date labels, while others have not regulated date labels at all. The result is an inconsistent state regulatory scheme that is not necessarily improving public health.

This section explores some of the patterns across state date label regulations that emerged from our 50 state research; it also highlights the extreme variations among these regulations to illuminate how our current food labeling system creates confusion for consumers and does not necessarily improve food safety. Although the most defining feature of the state-level regulation of date labels is its sheer variability,¹¹⁴ there are several discernible patterns among the regulations. States can be roughly grouped into four categories:

1. Those that regulate the presence of date labels on certain foods but do not regulate sales after those dates;
2. Those that do not regulate the presence of date labels but broadly regulate sales after such dates if date labels are voluntarily applied;
3. Those that regulate both the presence of date labels and, broadly, the sale of products after those dates; and
4. Those that do not require or regulate date labels at all.

According to our 50 state research, 41 states plus the District of Columbia require date labels on at least some food items, whereas nine states do not require them on any foods (see *Figure 2*, below).¹¹⁵ For example, New York does not require date labels to be applied to any products, while all six of its neighboring states—New Jersey, Pennsylvania, Connecticut, Massachusetts, Vermont, and Rhode Island—have such requirements. Twenty states plus the District of Columbia also regulate the sale of food products after some label dates, while 30 states have no such restrictions (see *Figure 3*, below). Massachusetts’s regulations are an example of the kind of restrictions states can impose on sales after the label date. In Massachusetts,

“food can only be sold past its ‘sell by’ or ‘best if used by’ date if: (1) it is wholesome and its sensory physical qualities have not significantly diminished; (2) it is segregated from the food products which are not past date; and (3) it is clearly marked as being past date.”¹¹⁶ As with this example, even when regulations exist around the use of date labels, very few states define what the words should mean and virtually none delineate the process for determining the dates (see *Appendix C*).

States also differ in the kinds of food they require to bear date labels (see *Figure 4*, below) as well as the kind of date labels that are required. Most states that require date labels or regulate the sale of past-date products apply their regulations to specific foods, such as shellfish, dairy/milk, or eggs. A handful of states regulate perishable foods more generally.¹¹⁷ For example, Maryland requires only that Grade A milk bear a “sell by” date¹¹⁸ and does not require a date label on any other products; Minnesota, on the other hand, requires “quality assurance” dates on perishable foods¹¹⁹ and eggs,¹²⁰ and “sell by” dates on shellfish.¹²¹ The most common food product that requires date labeling is shellfish, for which such labeling is specifically regulated in 24 states and the District of Columbia. Further, as previously mentioned, eight states have adopted the NCWM Uniform Open Dating Regulation in whole or in part, meaning that those states are more similar to one another in terms of their regulations.¹²²

Figure 2: States Requiring Date Labels on At Least Some Food Products¹²⁷

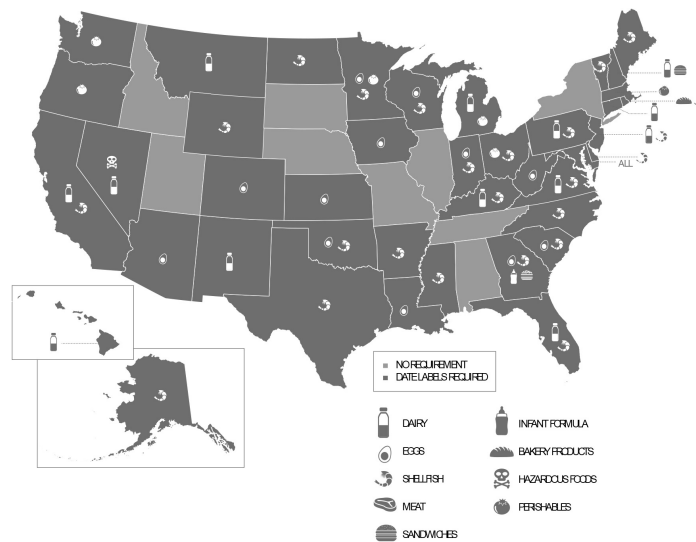
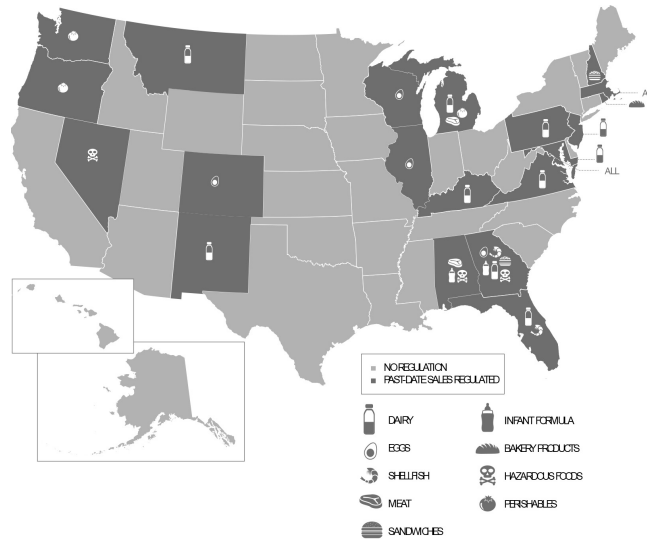


Figure 3: States Regulating Food Sales Past Some Label Dates ^{128–129}**Figure 4: States Regulating Date Labeling** ¹³⁰

State	Perishable Foods ¹³¹	Potentially Hazardous Foods ¹³²	Milk/Dairy	Meat/Poultry	Shellfish	Eggs	Other
Alabama		X		X			
Alaska							
Arizona					X	X	
Arkansas					X		
California			X		X	X	
Colorado							
Connecticut			X			X	
Delaware			X		X	X	
Florida		X	X		X	X	X
Georgia		X	X		X	X	
Hawaii			X		X		
Idaho						X	
Illinois						X	
Indiana					X	X	
Iowa						X	
Kansas						X	
Kentucky			X		X		
Louisiana						X	
Maine					X		
Maryland			X				
Massachusetts	X						
Michigan	X		X	X		X	
Minnesota					X		
Mississippi					X		
Missouri							
Montana			X				
Nebraska							
Nevada		X	X				
New Hampshire			X				
New Jersey			X		X		X
New Mexico			X				
New York							
North Carolina					X		
North Dakota					X		
Ohio	X				X		
Oklahoma					X	X	
Oregon	X						
Pennsylvania			X		X		
Rhode Island					X		X
South Carolina					X	X	
South Dakota							
Tennessee							
Texas					X		
Utah							
Vermont					X		
Virginia			X		X		
Washington	X						
Washington, D.C.	X	X	X	X	X	X	X
West Virginia						X	
Wisconsin					X	X	
Wyoming					X		

The details of each state's individual regulations also vary dramatically. The following examples only brush the surface of this variation, but illustrate how widely

states have departed from one another in creating their open dating regulatory regimes:

- In Michigan, packaged perishable foods must include a date that may be displayed with or without explanatory terms such as “sell by” or “best before,” but if such terms are used, only particular phrases may be used.¹²³
- Rhode Island requires that packaged bakery products contain pull dates.¹²⁴
- New Hampshire and Georgia are the only states to explicitly single out pre-wrapped sandwiches for regulation.¹²⁵
- In contrast with many other states, Minnesota and Ohio explicitly preempt local ordinances on food labeling, reserving all power in this arena to the state.¹²⁶
- New York is one of nine states that have no regulations regarding food date labeling according to the qualifications assessed in this report.

The figures on the preceding pages provide a broad overview of both the patterns and the variations in state-level regulation of date labels. A full list of state regulations can be found in *Appendix C*.

Local Regulations

Date labeling can also be regulated at the local level. The City of Baltimore, for example, prohibits the sale of any perishable food past its expiration date, whereas the State of Maryland does not.¹³³ In cases where cities have more stringent date labeling regulations than the state in which they are located, inconsistency in the regulations could lead to even greater consumer confusion, and could also stand in the way of voluntary industry adoption of a more standardized dating system. Repealing or amending such city ordinances that do not improve public health and safety could allow for more consistency. For example, New York City used to require “expiration dates” on milk cartons even though the state of New York imposes no date labeling requirements on any foods.¹³⁴ In September 2010, the city repealed its date labeling requirement and fell in line with the state-level approach.¹³⁵ The city recognized that its own rule for open dates was not necessary to protect public health because if milk is “handled properly,” it will still be safe to consume even after the expiration date passes.¹³⁶ The City also noted that New York State had not reported any “adverse public health effects, poor milk quality or a decrease in milk demand” arising from not requiring a “sell by” date at the state level.¹³⁷

The Role of Industry

The inconsistent regulation of date labels at the Federal, state, and local levels means manufacturers and other industry actors often must decide the form and content of date labels.

Where no regulations exist, as is the case in many states and for many categories of food, manufacturers are free to decide for themselves which foods will display an open date and which will not. Even when regulations mandate the presence of date labels on specific foods, they almost never dictate the criteria that industry should use to arrive at the date on the label, thus leaving the decision entirely to industry discretion.

Some food trade organizations have responded to the lack of uniform regulations by creating their own voluntary guidance for open date labeling,¹³⁸ but this guidance is not always consistent from one organization to the next.¹³⁹

Because of the lack of standardization, some retailers have even taken it upon themselves to create date labeling practices for products sold in their stores. For instance, in 2004 Wal-Mart started to require its suppliers to place a “best if used by” date on all food products in an effort to ensure consumers of the products’ freshness.¹⁴⁰



The inconsistent regulation of date labels at the Federal, state, and local levels means manufacturers and other industry actors often must decide the form and content of date labels.

While this policy was created with the best of intentions and helped to standardize labels, this change may have in fact led to increased shelf-stable inventory that would have previously been sold without a date label now risks being wasted when the date labels expire.¹⁴¹

With increased expectations for the food industry to address social and environmental concerns,¹⁴² improving the date labeling regime actually provides an opportunity for the food industry to better serve consumer interests while simultaneously creating positive environmental and social change. Food companies may be able to benefit financially by developing creative “cause-related marketing” strategies designed for consumers interested in reducing food waste and willing to purchase food items close to the expiration date.¹⁴³

Figure 5: Summary of Voluntary Guidelines and Informal Recommendations by Food Trade Organizations on Open Date Labeling of Food Products

Association of Food Industries:	Informally recommend open dating of olive oil.
Food Marketing Institute:	Support a voluntary “sell by” date accompanied by “best if used by” information.
International Dairy-Deli-Bakery Association:	Informally recommends manufacturers’ guidelines (sell by/pull by) for foods that are put on display in the supermarket, such as deli meats.
National Food Processors Association:	For refrigerated and frozen foods, indicates that manufacturers are in the most knowledgeable position to establish the shelf life and consequently the specific date labeling information that is most useful to the consumer. To harmonize date labeling among food products, supports a month/day/year (MMDDYY) format, either alphanumeric or numeric.
Specialty Coffee Association of America:	Encourages members to put a “born-on” date on their products.

Source: Eastern Research Grp., Inc., *Current State of Food Product Open Dates in the U.S.* 1–13 (2003).

Chapter 3: Shortcomings of the Current System

Inconsistent and Unreliable Wording and Methods of Determination

The lack of binding Federal standards, and the resultant state and local regulatory variability in date labeling rules, has led to a proliferation of diverse and inconsistent date labeling practices in the food industry. Open dates can come in a dizzying variety of forms, none of which are strictly defined or regulated at the Federal level. This haphazard system is not serving its purpose well.

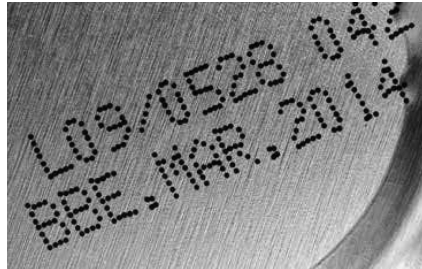
Though it is impossible to provide actual definitions as meanings can vary by state and phrases are not legally defined, the following terms can loosely be interpreted as: (1) the “production” or “pack” date, which provides the date on which the food product was manufactured or placed in its final packaging; (2) the “sell by” date, which provides information to retailers for stock control leaving a reasonable amount of shelf life for the consumer after purchase; (3) the “best if used by” date, which typically provides an estimate of a date after which food will no longer be at its highest quality; (4) the “use by” date, which also typically is a manufacturer’s indication of the “last date recommended for the use of the product while at peak quality”; (5) the “freeze by” date, which is a reminder that quality can be maintained much longer by freezing product; and (6) even the “enjoy by” date used by some manufacturers, and not clearly defined in a way that is useful to consumers. It is important to note that the meaning of these terms may vary from product to product and among manufacturers of the same products because there is no industry consensus surrounding which date label prefix should be applied to different categories of food products.¹⁴⁴

In addition to discretion over which label to use, industry actors vary in their decisions about when to include a label on a product at all. In a 2003 report prepared for the FDA, six manufacturers were interviewed and asked to describe their processes for deciding when to include an open date on one of their products, and their answers varied widely.¹⁴⁵

Most manufacturers agreed on certain important factors, including the perishability of a product,¹⁴⁶ but beyond that there was a wide range of different responses, illustrating the broad level of discretion left to manufacturers. For instance, some made their decision based on space constraints on packaging while others con-

sidered the decision as part of their marketing strategy.¹⁴⁷ Industry guidelines, likewise, do not typically influence manufacturers' decisions to include date labels and do not usually identify which shelf stable foods should bear open dates.¹⁴⁸

Manufacturers are left to decide for themselves not only when to use a date label and what label term to use, but, importantly, how this date will be determined.¹⁴⁹ According *Chapter 3: Shortcomings of the Current System* to the 2003 report prepared for FDA, a key motivating force behind a manufacturer's decision to open date is the protection of the consumer's experience of a product,¹⁵⁰ in order to safeguard that product's reputation.¹⁵¹



Manufacturers and retailers accomplish this goal by focusing on the product's shelf-life-typically conceptualized as "the end of consumer quality determined by the percentage of consumers that are displeased by the product."¹⁵²

Manufacturers and retailers are ultimately free to define shelf-life according to their own market standards, "with some accepting a predetermined degree of change" in product quality over time, "and others finding that no change is acceptable."¹⁵³ Those manufacturers and retailers opposed to any quality change in their product generally choose to set their label dates earlier to ensure that food is consumed only at its peak freshness, in order to protect their brand integrity. Some manufacturers use lab tests to determine the shelf life, others use literature values, and yet others use product turnover rates or consumer complaint frequency.¹⁵⁴ Ultimately, there is a high degree of variability, arbitrariness, and imprecision in the date labeling process. As explained by one food scientist and former food industry official describing one process that uses grades assigned by professional tasters:

If the product was designed, let's say, to be a 7 when it was fresh, you may choose that at 6.2, it's gotten to the point where [you] don't want it to be on the market anymore If it's 6.0, would most people still find it reasonably good? Absolutely. . . . But companies want people to taste their products as best they can at the optimum, because that's how they maintain their business and their market shares.¹⁵⁵

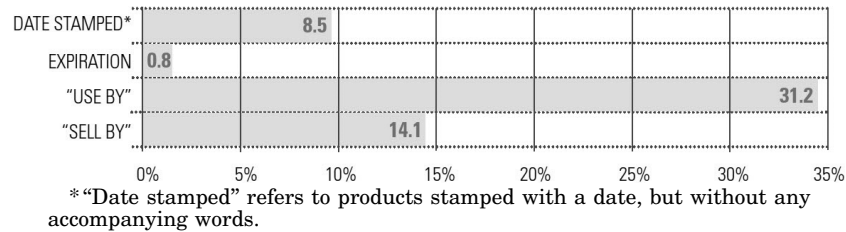
Thus, while open code dating appears on the surface to be an objective exercise, consumer preferences and brand protection color the way in which most of these dates are determined. In most cases, consumers have no way of knowing how a "sell by" or "use by" date has been defined or calculated, and to reiterate from above, the method of calculation may vary widely "by product type, manufacturer, and geography."¹⁵⁶

It is reasonable that manufacturers want to protect their brands' reputations. Still, here may be a place for more objective and empirically-grounded methods for determining quality-based dates. One such method that could be applied for some products is the use of empirical shelf-life testing.¹⁵⁷ A product's "shelf-life" can be determined by testing and monitoring the product over its actual shelf-life, which can take several years for shelf-stable products.¹⁵⁸ Alternatively, manufacturers can employ accelerated shelf-life testing, a practice involving the study and storage of food products under test abuse conditions.¹⁵⁹ However, at present, the use of shelf-life testing is almost entirely optional.¹⁶⁰ For those manufacturers that lack the requisite time, money, expertise, or initiative to conduct such testing, open dates end up being "no more than very good guesses or industry practice."¹⁶¹ The 2003 report prepared for the FDA noted that creating a mandatory national open dating system, which would standardize date labeling practices across the nation, could also present an opportunity to require manufacturers to implement more rigorous shelf-life testing.¹⁶²

The variability of how dates are chosen and expressed is also reflected in FDA's Food Label and Package Survey from 2000–2001, which found that just under 55 percent of food products sold had any kind of date label.¹⁶³ Out of that 55 percent,

Figure 6 shows the breakdown of the label types that were employed. It is possible that dating practices have increased since this survey, particularly after Wal-Mart began requiring its suppliers to utilize “best if used by” dates in 2004.¹⁶⁴

Figure 6: Distribution of Label Date Types¹⁶⁵



Even when given a more limited scope of date label terminology to choose from, the issue of food waste persists. For example, in the United Kingdom, manufacturers are bound under Directive 2000/13/EC of the European Parliament and of the Council (EU Food Labeling Directive) to include either a quality-based “best before” date or a safety-based “use by” date.¹⁶⁶ However, it remains up to the industry to determine which of those two terms to use, leading to inconsistencies in the labeling of similar products, as evidenced by this finding from a United Kingdom industry report:

. . . 75 percent of yogurt lines were marked with a “use by” date and 25 percent with a “best before” date. In conversations with retail food technologists, it was explained that some products like yogurts, fruit juices and hard cheeses do not necessarily constitute food safety risks but simply spoil and therefore may not need to have a “use by” date applied at all.¹⁶⁷

Further, industry actors are often more likely to include “use by” dates (defined as safety dates) on products that would merit a “best before” date (defined as quality date), causing further unnecessary waste because the United Kingdom bans the sale of food products after the “use by” date.¹⁶⁸ In 2011, in response to the persistently high rates of food waste, the U.K. Department for Environment, Food and Rural Affairs (DEFRA) issued “Guidance on the application of date labels to food” to help industry comply with the E.U. Food Labeling Directive using standardized methods.¹⁶⁹ The DEFRA Guidance provides a decision tree for industry actors that explains when to use which of the two mandatory dates, in order to try to streamline the date labeling used on similar products.¹⁷⁰ The Guidance also suggests that retailers should make “display until” and “sell-by” dates, which were unregulated and, as in the United States, used primarily as stock rotation tools, less visible to consumers in order to reduce unnecessary food waste due to consumer confusion regarding those particular dates.¹⁷¹

Back in the United States, the end result of the lack of standardization of date labels is consumer confusion and inability to make informed decisions based on the information contained in date labels, which ultimately leads to food waste. Because consumers cannot understand what factors led to the selection and setting of label dates, often they mistakenly assume that these dates are tied to food safety,¹⁷² whereas in reality their true function is to convey information about freshness and quality grounded in the preferences of consumers themselves and the particular brand protection practices of manufacturers. This misunderstanding also creates the opportunity for an unscrupulous manufacturer to maximize profits at the expense of consumers’ economic interests. The fact that consumers and stores throw away products unnecessarily can lead to increased profits for manufacturers if consumers are purchasing more products and doing so more often. According to at least one supply chain expert, some manufacturers may artificially shorten stated shelf lives for marketing reasons.¹⁷³ More empirical research on this topic would be helpful. The current system provides few checks to prevent manufacturers from engaging in such a practice.

Thus, while open code dating appears on the surface to be an objective exercise, consumer preferences and brand protection color the way in which most of these dates are determined. In most cases, consumers have no way of knowing how a “sell by” or “use by” date has been defined or calculated, and to reiterate from above, the method of calculation may vary widely “by product type, manufacturer, and geography.”

Consumer Confusion and Misinterpretation of Link to Food Safety

The current food dating system leads to consumer confusion and misinterpretation in two fundamental ways. On one hand, evidence suggests that consumer overreliance on label dates results in food being wasted because of safety concerns that are not founded on actual risks. At the same time, such overreliance can also cause consumers to ignore more relevant risk factors affecting food safety, including the importance of time and temperature control, as discussed further below. Label dates thus create a false (and potentially dangerous) sense of security for consumers who uncritically consume foods before their marked expiration date.¹⁷⁴ Thus, neither the public's health nor resource conservation are well-served by the current date labeling system.

Mistaken Belief That Past-Date Food Is Unsafe to Consume

Although most date labels are intended as indicators of freshness and quality,¹⁷⁵ many consumers mistakenly believe that they are indicators of safety.¹⁷⁶ A 2007 survey of U.S. adults funded by USDA's National Integrated Food Safety Initiative of the Cooperative State Research, Education, and Extension Service (CREES) found that many of the respondents could not identify the general meanings of different open dates, with fewer than half (44 percent) correctly describing the meaning of the "sell by" date and only 18 percent correctly indicating understanding of the "use by" date.¹⁷⁷ In addition to this substantial confusion, 25 percent had the misconception that "sell by" date identifies the last day on which a product can be consumed,¹⁷⁸ rather than an inventory-control date that simply recommends how long a product should be displayed on the shelf *vis-à-vis* newer products.¹⁷⁹ A separate survey by the FMI found that 91 percent of consumers reported that at least occasionally they had discarded food past its "sell by" date out of concern for the product's safety, with 25 percent reporting that they always did so.¹⁸⁰ Moreover, a report sponsored by the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) and several Federal agencies¹¹ highlighted that "54% of consumers believed that eating food past its sell by/use by date constituted a health risk."¹⁸² Other studies found that a majority of respondents believe either that food is no longer safe to be sold¹⁸³ or that it is no longer safe to be consumed after its open label date.¹⁸⁴ Individuals from all age and income groups are confused about the current system of date labels.¹⁸⁵



In fact, the current date labeling system does not address safety, nor was that ever its main impetus. As referenced previously, the OTA's landmark report on open code dating from 1979 concluded:

There is little or no benefit derived from open dating in terms of improved microbiological safety of foods. For foods in general, microbiological safety hazards are a result of processing failures, contamination after processing, and abuses in storage and handling. These factors are usually independent of the age of the product and have little relationship to an open date.¹⁸⁶

USDA affirms that "even if the date expires during home storage, a product should be safe, wholesome and of good quality if handled properly and kept at 40 °F or below."¹⁸⁷ Echoing this assertion, the FDA's Center for Food Safety and Applied Nutrition (CFSAN) has noted that most foods, when kept in optimal storage condi-

tions, are safe to eat and of acceptable quality for periods of time past the label date.¹⁸⁸

Other studies also show there is no direct correlation between food safety and date labels. In the United Kingdom, representatives from retail and manufacturing compiled a report with a wide-ranging review of date labels, consumer safety, and food waste. The report, published in 2011, found no direct evidence linking foodborne illness in the United Kingdom to consumption of food past its expiration date.¹⁸⁹ Food safety experts agree that absent time/temperature abuse, when food is allowed to remain too long at temperatures favorable to the growth of foodborne microorganisms, many food products will be safe past their date labels, although there are exceptions for certain classes of “ready-to-eat” perishable foods and foods to be consumed by certain susceptible populations,¹⁹⁰ both of which are discussed below. Quality-based date labels are not relevant food safety indicators because a food will generally “deteriorate in quality to the point that it would not be palatable to eat before there [is] an increase in the level of food safety risk.”¹⁹¹ Quality-based label dates are generally set far before this spoilage point, meaning that there is a significant amount of time past the label date during which the food is still safe to eat.

USDA affirms that “even if the date expires during home storage, a product should be safe, wholesome and of good quality if handled properly and kept at 40 °F or below.”

The incredible variation between state and local regulations regarding date labeling and the sale of food after the label date further supports the conclusion that the use of these dates does not advance public health in a meaningful way. While some states, like Massachusetts, regulate date labeling and sale after some date labels aggressively, a significant number of states, including New York, leave the field completely unregulated. Given that the same food products are no more or less hazardous in different states, it appears that at least some states are pursuing date labeling policies that lack robust empirical support. If persuasive evidence comes to light showing that there is a proven correlation between label dates and food safety, then all jurisdictions should adopt similar regulations. Alternatively, and more realistically, jurisdictions with more stringent date labeling requirements should review whether their regulations are actually designed to address food safety risks. Further research on the relative rates of foodborne illnesses in states that have restrictions on sale after date *versus* those that do not may be instructive on the level of protection that those regulations actually provide.

Mistaken Belief that Pre-Date Food Is Always Safe To Consume

While the mistaken belief that past-date foods are unsafe leads directly to food waste, overreliance on date labels may also have a detrimental effect on consumer health and safety. When consumers put undue faith in date labels, they may actually ignore more salient determinants of food safety, putting themselves at risk. Specifically, when consumers rely on a date label that emphasizes a product’s estimated lifespan without any accompanying information about the storage temperature or conditions under which the food was or should be kept, they are acting without critical information. A label date, if it is even designed to communicate safety, could truly only convey meaningful safety information if it were presented in conjunction with the time/temperature history of the product, meaning how long and at what temperatures the food was stored.¹⁹² Consumers often do not understand the relationship of time and temperature to safety; many people do not realize that the amount of time food spends in the danger zone (40° to 120° Fahrenheit) is the main criterion they should use to evaluate food safety, rather than total storage time.¹⁹³

When food is left at unsafe temperatures for too long or is otherwise compromised, an open date becomes essentially meaningless, but consumers may trust the label date and use the product anyway.¹⁹⁴ The 1979 OTA report specifically expressed this concern, stating that date labels might disserve consumers by giving them a false sense of security.¹⁹⁵ A 2011 government report out of the United Kingdom also recognized the possibility that the “proliferation of ‘use by’ dated products increases risk for consumers by diluting key food safety messages.”¹⁹⁶ This worry about false confidence is borne out in a study reporting that more than ½ of all American adults think the “use by” date is an indicator of microbiological safety.¹⁹⁷

A Different Case: *Listeria monocytogenes* and Refrigerated Ready-to-Eat Foods

There is one area of food safety concern that does implicate date labeling as a potential regulatory solution: the risk of *Listeria monocytogenes* in ready-to-eat-foods. According to FDA’s Center for Food Safety and Applied Nutrition, *Listeria* is “a bac-

terium that occurs widely in both agricultural . . . and food processing environments.”¹⁹⁸ If ingested by humans, the bacterium can cause listeriosis, a potentially life-threatening infection.¹⁹⁹ For most foodborne pathogens, “the duration of refrigerated storage is not a major factor in foodborne illness.”²⁰⁰ But in the case of food contaminated by *Listeria*, the length of refrigerated storage time is a factor,²⁰¹ since this organism can grow and multiply even while under refrigeration.²⁰² For this reason, the Federal Government identified *Listeria* as a pathogen for which a safety-based “use by” date label could be a useful preventive tool.²⁰³ However, because *Listeria* is destroyed upon cooking, this risk is generally limited to ready-to-eat foods that are not heated before consumption.²⁰⁴ Indeed, of the 14 large-scale foodborne listeriosis outbreaks reported to the Centers for Disease Control and Prevention (CDC) between 1973 and 2000,²⁰⁵ almost all were known or suspected to have involved refrigerated ready-to-eat foods.²⁰⁶



While *Listeria* in ready-to-eat-foods is a legitimate problem in the food supply, this concern does not justify, nor is it addressed by, the current date labeling system. *Listeria* concerns in ready-to-eat foods could be more effectively addressed using targeted, well-tailored interventions that might include a date that explicitly indicates when the food is safe to consume, but would also have other information beyond just the date. Such interventions could integrate important food safety considerations at all stages of the supply chain, like the prevention of time/temperature abuse,²⁰⁷ which is not assured by the imposition of date labels alone. Federally-regulated open dating may be appropriate for discrete categories of foods that pose a unique public health risk, such as ready-to-eat products. But the use of specialized regulations applicable only to such high-risk foods would better protect consumers if they allowed for consumers to distinguish between truly pertinent safety labels and generic, quality-based labels. Indeed, recognizing the dangers inherent in ready-to-eat foods, FDA has already promulgated regulatory guidance focusing on this category in the FDA Food Code.²⁰⁸ The Food Code takes a holistic approach to the processing and handling of ready-to-eat foods along the supply chain, and provides specific time/temperature guidelines for the holding and consumption of ready-to-eat foods at the retail level.²⁰⁹ Date labeling requirements constitute one element of this integrated approach²¹⁰ and complement the more important goals of minimizing *Listeria* contamination and time/temperature abuse.²¹¹

It is even possible to imagine finer-grained distinctions being made within the category of ready-to-eat foods, allowing for better-tailored and effective date labels. This is because certain categories of ready-to-eat foods that have been found to support the growth of *Listeria* carry a much higher risk than others. When CFSAN conducted a quantitative assessment of the relative risk of 23 food categories with a documented history of *Listeria* contamination, only two categories were designated as being at “very high risk” of contamination: “Deli Meats” and “Frankfurters, Not Reheated.”²¹² Categories with a “very low risk” included “Hard Cheese,” “Ice Cream and Other Frozen Dairy Products,” and “Processed Cheese.”²¹³ While foods posing a very high risk necessitated “immediate attention in relation to the national goal for reducing the incidence of foodborne illness,” very low risk foods were deemed “highly unlikely to be a significant source of foodborne listeriosis” absent “a gross error in their manufacture.”²¹⁴ Thus, even according to FDA’s own research, *Listeria*-related food safety risks do not extend to every product type within the ready-to-eat category.

Finally, but no less importantly, it should be noted that serious illness from *Listeria* occurs almost exclusively in susceptible populations like the elderly, those with compromised immune systems, and babies *in utero*.²¹⁵ It may therefore make more sense to target those population specifically. For example, Connecticut's food safety regulations allow food service establishments to serve raw or undercooked items, but makes explicit that such exemption does not apply in the case of "food service establishments serving highly susceptible populations such as immuno-compromised individuals or older adults in hospitals, nursing homes, or similar health care facilities . . . and preschool age children in a facility that provides custodial care."²¹⁶ Labels could also carry population-specific messaging. Education is important as well, such as when government agencies advise pregnant women to avoid deli meats and unpasteurized cheeses because of the *Listeria* risk.²¹⁷

As laid out in this section, it is possible to address product-specific food safety concerns (e.g., for ready-to-eat foods) by using clear, targeted interventions, including standardized, effective date labeling,²¹⁸ without creating unnecessary and unwanted collateral effects across the entire food system.²¹⁹ For most foods, including many ready-to-eat foods, the current date labeling framework does not advance public health in any significant way. For the reasons presented above, food safety considerations should not constitute a primary justification for maintaining present date labeling practices. Instead, specific practices should be tailored to ready-to-eat-foods to help consumers make better food safety choices with regard to those high-risk foods.

Consumer Food Waste

Consumer confusion surrounding the meaning of date labels also contributes to the high rate of waste of edible food. Food loss has been defined as the "edible amount of food available for human consumption but [] not consumed."²²⁰ Food waste is a subset of food loss, representing the amount of edible food that goes unconsumed due to human action or inaction.²²¹ By conservative estimates, U.S. food losses amount to 160 billion pounds of food annually.²²² This waste has important economic, environmental, and ethical implications.

To start, it is estimated that per capita food loss is \$390 per year, putting the total food loss for a family of four at \$1,560 annually.²²³ One expert in consumer food waste thought that figure was too low because it did not capture the estimated ten percent of consumer food lost to the garbage disposal.²²⁴ With that additional portion factored in, food losses could cost the average American family \$2,275 annually.²²⁵

On the environmental front, studies show that more than 25 percent of all the freshwater used in the United States is squandered on the production of wasted food.²²⁶ The EPA reports that over 34 million metric tons of food scraps were generated in 2010,²²⁷ almost all of which went into the waste stream, making food the greatest source of waste headed to landfills in the United States at 21 percent of all landfill input.²²⁸ The most alarming statistic is that food loss in the United States has been on the rise for the past several decades, with per capita food loss increasing by 50 percent since 1974.²²⁹

Recent studies conducted in the United Kingdom have explored the connection between food waste and food date labeling. A report published in 2011 by WRAP, a not-for-profit organization that works to reduce food waste in the United Kingdom and other European countries, reported that confusion over date labeling accounts for an estimated 20 percent of avoidable household food waste.²³⁰ Comprehensive research on the connection between date labels and food waste has not yet been conducted in the United States.

As the previous section makes clear, the majority of American consumers do not understand date labels, with a significant chunk of them mistakenly believing that eating food past its "sell by" or "use by" date poses a health risk.²³¹ Consumers' discarding of food on or before the "sell by" date offers further evidence of food waste that is linked to date labeling because that date does not in fact indicate the food is spoiled. In a 1987 study, 17 percent of weekly household waste was reported discarded because it was "past a pull date, an expiration date, or, in some cases, a series of production code numbers misinterpreted as a date," or "because the consumer believed that the food was too old by some other time standard."²³² Thus, while more research would help to further define the scale of the problem, it is already quite clear that date labels play a central role in generating food waste among U.S. consumers.

Economic Losses and Inefficiencies for Manufacturers, Distributors, and Retailers

Because of the consumer misperceptions that surround the meaning of date labels, the practice of open dating usually results in a higher rate of unsaleable—and hence

often discarded—food for retail stores.²³³ In the United States, an industry initiative estimated about \$900 million worth of inventory was removed from the supply chain in 2001 due to date code expiration and identified the lack of standardization around date coding as one of the five factors driving that loss.²³⁴ This food represents a direct economic loss for retailers, and ultimately could be a cost born by consumers in the price of goods. Aside from the costs of wasted food, inconsistent date labeling regulations that are not benefiting public health can also make food businesses less efficient. Retail experts have reported that it can be difficult for large-scale food corporations to comply with divergent state regulations.²³⁵ Indeed, one of the driving motivations for the NCWM when it created the Uniform Open Dating Regulation was the fear that variation between state regulations on date labels would hamper the “orderly flow of commerce” among states.²³⁶ With the current regulations, companies often must use separate packaging lines for products entering different jurisdictions in order to comply with these divergent state laws. Further, food packers and manufacturers have an incentive to follow the strictest state labeling regulations for all of their products, even for products sold in states with no regulations. Because no states prohibit date labels, this method can be less costly for companies. However, this means that date labels could be having the same confusing impacts even in states without regulations because products in all states wind up with labels that are not protecting consumers.

Challenges for Food Recovery Initiatives and Anti-Hunger Organizations

The food waste that is generated by date labeling practices can and often is offset by back-end efforts to reclaim, rescue, or repurpose past-date foods in order to prevent them from being discarded. One approach to mitigating food waste is to divert expired foods to anti-hunger organizations that can process and distribute these products to food-insecure individuals and families. Safe, wholesome past-date products constitute a significant portion of the food relief that is distributed by food banks and soup kitchens.²³⁷ As well, there are a number of new organizations that specialize in linking anti-hunger initiatives with past-date or otherwise unsaleable foods.²³⁸

Another way that retailers can mitigate food waste is by selling past-date products at lower prices through a designated “discount” section of the store²³⁹ or, alternatively, to external businesses including freestanding expired food stores²⁴⁰ or expired food auctions.²⁴¹ These retail avenues give savvy, price-conscious consumers the option of voluntarily foregoing the quality standards indicated by a date label in exchange for often significant cost savings.

Despite these promising initiatives, many of the same distorting and disorienting effects caused by date labels in the traditional retail context can also be present in the past-date retail market. Consumer confusion surrounding the meaning of date labels and their relationship to food safety severely limits the market for past-date products. Experts in food recovery²⁴² and food waste²⁴³ report that there is also widespread confusion amongst anti-hunger program administrators over the meaning of various date labels. Food safety officers working with anti-hunger organizations must consequently spend considerable time and effort educating workers about the date labeling system, and those workers must in turn educate clients and end-users when they express concerns or uncertainty about the products they are receiving.²⁴⁴

Laws in 20 states plus the District of Columbia also explicitly regulate the sale (and sometimes even donation) of foods beyond their label date (see *Figure 3*). Donors may also be concerned about their liability associated with food-safety, even though they are protected by state and Federal “Good Samaritan” laws that exist to protect from liability the corporations and individuals who donate food to non-profit organizations.²⁴⁵ Finally, state and local food inspectors have been known to frustrate food recovery efforts on the basis of questionable—or, in some cases, clearly mistaken—interpretations of how local health codes and food safety laws view past-date foods.²⁴⁶ For example, an inspector may assume that a past-date product cannot be safe or wholesome, even though date labels alone are not reliable indicators of safety or wholesomeness. All of these complications stemming from date labeling practices make it more difficult to use food recovery methods to mitigate the food waste that is caused by those practices.

Chapter 4: Recommendations

A new system for food date labeling in the United States is needed. This system should have uniform language that clearly communicates to consumers the meaning of dates as well as other food safety and handling information. The system should be the same throughout the United States for foods within the same category of products, and to the extent reasonable, across all classes of food products.



The recommendations proposed here respond directly to the myriad problems linked to the current date labeling legal framework. They are broken into two sections. The first section proposes changes to date labeling practices in order to standardize the labels, reduce consumer confusion, improve consumer food safety, and decrease food waste. The second section describes the activities that specific actors, such as industry players, governmental bodies, and consumers, should take to spur date label reform and thus improve food safety and decrease food waste.

Standardize and Clarify the Food Date Labeling System Across the United States

1. Make “Sell By” Dates Invisible to the Consumer

“Sell by” dates are designed for stock control by retailers, as a business-to-business communication between manufacturers and retailers. As described above, they offer no useful guidance to consumers once they have brought foods home, and are often misinterpreted by consumers as safety dates. Guidance on when to eat the product may be helpful to consumers, but guidance on when to sell it is not. Affixing these dates in a closed date format, per prior industry practice,²⁴⁷ will allow for efficient retail stock rotation without unnecessarily confusing consumers. Those same products could then display dates that do provide useful guidance to the consumer, such as those described in the next recommendation.

The British approach is illustrative here. As described above, food products in the United Kingdom are required to include “use by” or “best before” date labels under the E.U. Food Labeling Directive.²⁴⁸ But despite the Directive’s requirements to use only two qualifying prefixes before date labels, U.K. law still allowed food companies the discretion to mark food products with “display until” or “sell by” dates in order to facilitate stock control.²⁴⁹ Research indicated that consumers were confused when faced with “sell by” or “display until” dates, and 29 percent of consumers could not correctly identify their meaning.²⁵⁰ To solve this confusion, the DEFRA Guidance mentioned above recommended that retailers make “sell by” and “display until” dates less visible to the consumer.²⁵¹ While the change is too recent to determine its impact, a number of experts in the U.S. retail sector have suggested a similar change.²⁵²

2. Establish A Reliable, Coherent, and Uniform Consumer-Facing Dating System

There is little to no benefit from states regulating food product dating differently from one another, or from companies independently determining the language that will be used on date labels, if this discretion is not in fact leading to any real health or safety benefits. In fact, a joint industry task force examining this issue in 2007 concluded that “industry and consumers would benefit from a more common approach to how [open date] information is communicated and to how the supply chain uses this information to manage inventory.”²⁵³

The work of various actors, including industry members, policymakers, food safety experts, consumer behavior experts, and consumer advocates, is needed to establish the most effective system of consumer-facing dates. A new system should include the following components:

- **Establish standard, clear language for both quality-based and safety-based date labels.** Language used on food products should more clearly and accurately communicate a date’s meaning. Consumer research should be used to determine the exact wording that best communicates these meanings, but the language should be *standardized, unambiguous, and should clearly delineate between safety-based and quality-based dates.* For example, for foods where safety may play a role in the date, “safe if used by” more clearly communicates the safety aspect as compared to “use by.” In addition, *more descriptive, explicit statements should be used.* For example, instead of short phrases like “best before” for quality-based labels, a phrase such as “Peak quality [or freshness] guaranteed before MMDDYY” would better convey relevant information.²⁵⁴ If space constraints on packages become problematic, standardized symbols or visual cues may also be of use to communicate these concepts.

One additional option would be for government to require, or industry to voluntarily adopt, boilerplate disclaimers on any quality-based date labels. For example, manufacturers could include a statement that “This date is an indicator of quality. Product safety has not been tested or linked with this date,” or a statement that “Any dates displayed are not safety dates. They have not been evaluated by FDA.” While this may require more space on packages, similar disclaimers are already employed by FDA in other regulatory contexts.²⁵⁵

- **Include “freeze by” dates and freezing information where applicable.** Including “freeze by” dates on food products, especially perishable products, could reduce the amount of food wasted by consumers. According to USDA FSIS, “once a perishable product is frozen, it doesn’t matter if the date expires because foods kept frozen continuously are safe indefinitely.”²⁵⁶ For consumers concerned about being unable to use a food product before its expiration date, or concerned that such a product may deteriorate in quality after the expiration date, the presence of a complementary “freeze by” label could serve as a reminder to freeze the product instead of discarding it. The best expression for this may be “use or freeze by.”

More generally, it is important to raise consumer awareness of the benefits of freezing food and the abundance of different food products that can be successfully frozen. In the United Kingdom, food products that are “suitable for home freezing” are marked with a snowflake label.²⁵⁷ American food companies or retailers could implement a similar symbol to communicate this information to consumers and provide helpful guidance on how to maintain the product’s quality when freezing it. Furthermore, education campaigns aiming to reduce food waste should focus on reiterating the benefits of freezing as one component of their message.

- **Remove or replace quality-based dates on nonperishable, shelf-stable products.** In order to reduce food waste, it may be most effective to remove quality-based dates, such as “best before” on non-perishable, shelf-stable foods.

Even if quality-based dates were removed, information on shelf life after opening should still be communicated, such as “Best within XX days of opening.” As an alternative, it may be desirable to provide consumers with a “pack date” and a general estimate of the product’s shelf-life (for example, “maximum quality XX months after pack date”) on certain products to help consumers make informed and independent quality-based judgments.

Where there is not a safety concern, such an approach would encourage consumers to make judgments about freshness and quality by actively investigating the food product at issue instead of relying on an industry-provided label. This approach would make it more likely that food is only disposed of when it has actually degraded to a quality level that the individual consumer finds to be personally unacceptable, and it would circumvent the incentive that manufacturers and retailers have to set date labels too conservatively. In addition, this practice would place more weight on labels placed on products that raise safety concerns, such as ready-to-eat-foods that pose a heightened *Listeria* risk.

- **Ensure date labels are clearly and predictably located on packages.** Consumers should be able to easily locate date label information on packages. One option would be the creation of a “safe handling” information box on food products, akin to the “nutrition facts” panel. This safe handling box could include information about the pack date, recommended best quality date or use by date, depending on the type of food, guidance for freezing, and information about how best to store the product.
- **Employ more transparent methods for selecting dates.** Assuring that date labels reflect the true shelf-life of products would give consumers who rely on date labels the maximum amount of time to consume their purchases before the date expires. Those who set label dates could be required where practical, to engage in quantitative shelf-life testing to determine a product’s label date. There are currently no such requirements at the Federal level, except in the case of infant formula.²⁵⁸ An even more robust version of this requirement would require the testing to be done by some kind of independent body, external to the entity setting the date. Alternatively, manufacturers and retailers could be required to use shelf-life guidelines for specific foods that are pre-set by the government or by authorized private entities.

3. Increase the Use of Safe Handling Instructions and “Smart Labels”

As stated above, experts agree that safe handling is the most important factor in keeping food safe. Therefore, including safe handling instructions on packages or

other clear, pertinent food safety indicators can help ensure a better consumer experience.

The Federal Government has already started to explore the possibility of creating a system of labels that independently convey relevant food safety information; these labels would likely emphasize the central importance of storage temperature and storage conditions in improving food safety outcomes.²⁵⁹ For example, raw meat and poultry packages must be labeled with “Safe Handling Instructions” that remind consumers about the importance of storage temperature, cross-contamination, thorough cooking, and safe holding.²⁶⁰

Recognizing the limitations of date labels without any additional knowledge of a food product’s temperature history, several experts have proposed more sophisticated “smart labels” that use technology to indicate the actual storage history of a product, such as the duration at each temperature.²⁶¹ One example of this is a “Time-Temperature Integrator” (TTI),²⁶² a small tag attached to a food product that changes color as a function of time-temperature history.²⁶³ When using a TTI, manufacturers could use a label statement like “Use by MM-DD-YY unless tag turns grey.”²⁶⁴ A smart label would be more expensive than a date label alone, but it could be an important tool for conveying useful safety information to consumers while reducing food waste. This technology would be particularly beneficial to use on those foods that pose a high risk to consumer health, such as ready-to-eat foods. In addition to the TTI, other models have been piloted or are in development in the United States and internationally.²⁶⁵ Increased government funding and research support could help in the development of truly cost-effective smart labels and thereby decrease food safety concerns for those foods identified as being most risky.

Another potential way to convey a product’s manufacturing or storage information would be to use Quick Response Codes (“QR Codes”) to convey any such relevant additional information. QR codes allow a user to “read” a barcode with their smartphone and then be transported to a website. This would allow the manufacturer to deliver ample information without the restrictions of on-package space constraints and would also provide the manufacturer with an additional touch point to the consumer.

The Role of Industry, Government, and Consumers

Congress, Federal administrative agencies, state legislatures, state administrative agencies, the food industry, the non-governmental sector, and consumers all have a role to play in reducing food waste and reforming the American date labeling regime and can start acting now. Solutions targeted at each stakeholder group are included below.

1. We Encourage Food Industry Actors To Commit To

- **Converting to a closed-date system for sell by information.** Retailers, distributors, and manufacturers alike should convert all “sell by” or “display until” dates to a closed-date system. With a majority of consumers mistakenly believing “sell by” dates indicate the last day a food can be safely consumed, converting this information to a coded format will avert a significant amount of premature food disposal. This change can and should happen immediately.
- **Establishing a more standardized, easily understandable consumer-facing dating system.** As time and care will be necessary to establish the most effective system of consumer-facing dates, we encourage businesses to jointly commit to creating a more standardized, less confusing system of date labeling that incorporates the guidelines outlined above. Perfecting such a system will take the input of various parties, and could be done by a multi-stakeholder task force or working group including industry members, policymakers, food safety experts, consumer behavior experts, and consumer advocates.
- **Selling or donating near-expiration or expired products.** Retailers should create dedicated in-store discount shelves for food near or just past its label date and, alternatively, sell or donate past-date or soon to be past-date foods to businesses and liquidators that specialize in selling past-date products. The benefits of these practices are threefold: retailers get to recover some revenue that would otherwise never materialize; consumers save money on perfectly edible food, albeit with the knowledge that their purchases may not be at peak quality; and more food is kept out of the waste stream. Moreover, a variety of interventions could be used to help food banks and food recovery organizations utilize past-date foods more efficiently. These changes include disseminating more accurate information about the meaning of date labels, as well as Federal and state Good Samaritan protections.
- **Educating consumers on the meaning of expiration dates and on safe food handling.** Point-of-sale displays, informational pamphlets, and online re-

sources are all ways that food companies can help to educate consumers on how to handle food properly and when it can safely be consumed. These materials should distinguish between date labels that measure quality and those that indicate safety to reduce mistaken reliance on quality labels for judgments of food safety risk.²⁶⁶ Because consumers are still wary about consuming food at or near its label date, the viability of past-date food sales, as well as the success of any new standardized date label regime, is contingent upon increased consumer awareness and education.

2. *We Encourage Policy Change To Be Undertaken by the Following Actors*

- **Congress:** The most straightforward way to create a uniform date labeling regime would be for Congress to establish a Federal law that creates a uniform date labeling framework across all states and all food products. As discussed in the *History* section, past Congressional efforts aimed to create a mandatory Federal regime by empowering FDA and USDA to create regulatory requirements. The creation of a similar legislative mandate could be pursued today.
- **FDA, USDA, and other relevant Federal agencies:** As described above, under the Food Drug & Cosmetic Act, FDA has both the authority and the responsibility to ensure product labels are not misleading.²⁶⁷ Like FDA, USDA has existing authority to protect consumers from misleading information on the products under its purview. Given the confusion and misinterpretation that persists, FDA and USDA already have sufficient statutory power to regulate date labels; if they believe they need additional authority to regulate date labels, they should identify any specific gaps. They should then use such authority to promulgate regulations that protect consumers from the misleading information that results from the wide variety of date labeling practices utilized by industry either voluntarily or in response to diverse state regulations.²⁶⁸

In order to ensure consistency across products, FDA and USDA should establish a coordinated approach. Congress has given each agency equal power to regulate misbranded food, but in order to improve consumer understanding of date labels, this power should be used to create standardized date labeling requirements that apply in the same manner to all food products, regardless of which agency has jurisdiction. This will help to ensure that consumers can be educated on the meaning of such labels and thus increase food safety and reduce food waste. Once such a new system of date labeling is developed, it should be accompanied by a strong consumer awareness campaign to educate the public on the meaning of the new date labels. Other agencies involved in ensuring food safety, such as the CDC, can assist in these educational efforts as well.

In addition (or in the meantime), since most states adopt some version of the FDA Food Code, FDA should strengthen its Food Code guidance, incorporate the recommendations in this report, and expand the guidance to cover all food products and increase consistency across products, instead of limiting it to only shellfish, refrigerated ready-to-eat-foods, and reduced-oxygen packaged foods.

- **National Conference Weights and Measures/National Institute of Standards and Technology:** We encourage the NCWM and NIST to revise the Model Uniform Open Dating Regulation published in NIST Handbook 130 to disallow open dating of “sell by” information and create more specific guidance for open dates, incorporating the suggestions in this report to ensure the best outcomes for consumers. Creating a multi-stakeholder task force to tackle the issue could help address differing points of view. The NCWM standards exist as a model guide that could be used as a starting point for crafting new Federal guidelines, once they are updated according to these recommendations. Significant benefits of the NCWM approach include: (1) limiting the types of permissible date labels and (2) setting baseline requirements for the calculation of label dates.²⁶⁹
- **States:** *In lieu of* overarching Federal regulation, creating more consistency across state laws would be another way to improve date labeling rules in all states while creating more nationwide uniformity. We encourage states to coordinate in adopting standard regulations. If NIST Handbook 130 on Uniform Open Dating Regulation is amended, states could follow that guidance. If not, states should adopt laws that call for companies to make the changes recommended in the previous section. At a minimum, states and localities with particularly strict date labeling regulations should consider repealing those regulations that create barriers to uniformity if they do not have health benefits. For example, 20 states restrict the sale or distribution of past-date foods and thereby make food recovery efforts much more difficult.

- **All levels of government:** We encourage all levels of government to conduct public education campaigns to educate consumers on the meaning of date labels, proper food handling, and ways to determine when food is safe to eat.
3. ***We Encourage Consumers and Consumer-Facing Agencies and Organizations To Act Now By***
- **Educating themselves and their constituents on the meaning of date labels.** As described above, a majority of Americans mistakenly believe that date labels are indicators of safety rather than indicators of quality.²⁷⁰ Learning what dates actually mean will help consumers to make better food safety decisions, and will also reduce premature disposal of products, saving people money in the process. In particular, consumers should educate themselves about “sell by” dates, which are indicators of stock rotation and not of product quality or safety.
 - **Educating themselves and their constituents on safe food handling and consumption, including proper refrigeration temperatures.** Many consumers are not aware that storage temperature is the main factor impacting food safety, rather than the amount of time that has passed since the product’s production.²⁷¹ Understanding the time/temperature relationship to food safety and the critical importance of keeping refrigerators at temperatures below 40° Fahrenheit is key to preserving food safely.²⁷² People under 35 years of age have been identified as a demographic that could particularly benefit from more intensive food safety education.²⁷³
 - **Learning to tell when food can still be safely consumed.** There are a variety of resources to help consumers learn how to assess the safety of food. These include the FMI’s FoodKeeper Guide, which lists generic shelf lives of common products,²⁷⁴ and resources that indicate visual red flags for microbial contamination, such as USDA’s Kitchen Companion Safe Food Handbook.²⁷⁵ These types of tools can help consumers reduce their reliance on date labels for food safety judgments and make better food safety decisions.

We have a significant challenge ahead in order to make a dent in the 40 percent of food that currently goes uneaten in the United States. There is no reason to wait—improving upon the convoluted and ineffective system of date labels is one of the more straightforward ways we can address this issue, while providing a service to consumers by improving both food safety outcomes and economic impacts.

Appendix A: Congressional Delegation of Food Labeling Authority to Agencies

Food and Drug Administration

Food, Drug and Cosmetic Act. 21 U.S.C. §§ 301 et seq. (2012)

Definition of misleading. 21 U.S.C. § 321(n) (2012).

(n) If an article is alleged to be misbranded because the labeling or advertising is misleading, then in determining whether the labeling or advertising is misleading there shall be taken into account (among other things) not only representations made or suggested by statement, word, design, device, or any combination thereof, but also the extent to which the labeling or advertising fails to reveal facts material in the light of such representations or material with respect to consequences which may result from the use of the article to which the labeling or advertising relates under the conditions of use prescribed in the labeling or advertising thereof or under such conditions of use as are customary or usual.

Prohibited acts. 21 U.S.C. § 331 (2012).

(b) The following acts and the causing thereof are prohibited . . . The adulteration or misbranding of any food, drug, device, tobacco product, or cosmetic in interstate commerce. Food “shall be deemed to be misbranded . . . if (1) its labeling is false or misleading in any particular, or (2) in the case of a food to which section 350 of this title applies, its advertising is false or misleading in a material respect or its labeling is in violation of section 350(b)(2) of this title.”

Definitions and standards for food. 21 U.S.C. § 341 (2012).

Whenever in the judgment of the Secretary such action will promote honesty and fair dealing in the interest of consumers, he shall promulgate regulations fixing and establishing for any food, under its common or usual name so far as practicable, a reasonable definition and standard of identity, a reasonable standard of quality, or reasonable standards of fill of container.

Misbranded food. 21 U.S.C. § 343 (2012).

A food shall be deemed to be misbranded—(a) False or misleading label. If (1) its labeling is false or misleading in any particular, or (2) in the case of a food to which section 411 [21 USCS § 350] applies, its advertising is false or misleading in a material respect or its labeling is in violation of section 411(b)(2) [21 USCS § 350(b)(2)].

Infant Formula Act. 21 U.S.C. § 350a (2012).

(a) ADULTERATION.

An infant formula, including an infant formula powder, shall be deemed to be adulterated if—

- (1) such infant formula does not provide nutrients as required by subsection (i) of this section,
- (2) such infant formula does not meet the quality factor requirements prescribed by the Secretary under subsection (b)(1) of this section, or
- (3) the processing of such infant formula is not in compliance with the good manufacturing practices and the quality control procedures prescribed by the Secretary under subsection (b)(2) of this section.

(b) REQUIREMENTS FOR QUALITY FACTORS, GOOD MANUFACTURING PRACTICES, AND RETENTION OF RECORDS.

- (1) The Secretary shall by regulation establish requirements for quality factors for infant formulas to the extent possible consistent with current scientific knowledge, including quality factor requirements for the nutrients required by subsection (i) of this section.

Labeling requirements, directions for use. 21 CFR § 107.20 (2013).

(c) A “Use by _____” date, the blank to be filled in with the month and year selected by the manufacturer, packer, or distributor of the infant formula on the basis of tests or other information showing that the infant formula, until that date, under the conditions of handling, storage, preparation, and use prescribed by label directions, will: (1) when consumed, contain not less than the quantity of each nutrient, as set forth on its label; and (2) otherwise be of an acceptable quality (*e.g.*, pass through an ordinary bottle nipple).

U.S. Department of Agriculture

Poultry Products Inspection Act 21 U.S.C. §§ 451 et seq. (2012)

Definition of misleading. 21 U.S.C. § 453(h) (2012).

(h) The term “misbranded” shall apply to any poultry product under one or more of the following circumstances:

- (1) if its labeling is false or misleading in any particular.

Use of trade names; false or misleading marking or labeling; misleading form or size of container. 21 U.S.C. § 457 (2012).

(c) No article subject to this chapter shall be sold or offered for sale by any person in commerce, under any name or other marking or labeling which is false or misleading, or in any container of a misleading form or size, but established trade names and other marking and labeling and containers which are not false or misleading and which are approved by the Secretary are permitted.

False or misleading labeling or containers. 9 CFR § 381.129 (2013).

(c) A calendar date may be shown on labeling when declared in accordance with the provisions of this paragraph:

- (1) The calendar date shall express the month of the year and the day of the month for all products and also the year in the case of products hermetically sealed in metal or glass containers, dried or frozen products, or any other products that the Administrator finds should be labeled with the year because the distribution and marketing practices with respect to such products may cause a label without a year identification to be misleading.
- (2) Immediately adjacent to the calendar date shall be a phrase explaining the meaning of such date in terms of “packing” date, “sell by” date, or “use before” date, with or without a further qualifying phrase, *e.g.*, “For Maximum Freshness” or “For Best Quality”, and such phrases shall be approved by the Administrator as prescribed in § 381.132.

Date of packing and date of processing; contents of cans. 9 CFR § 381.126 (2013).

(a) Either the immediate container or the shipping container of all poultry food products shall be plainly and permanently marked by code or otherwise with the date of packing. If calendar dating is used, it must be accompanied by an explanatory statement, as provided in § 381.129(c)(2).

(b) The immediate container for dressed poultry shall be marked with a lot number which shall be the number of the day of the year on which the poultry was slaughtered or a coded number.

(c) All canned products shall be plainly and permanently marked, by code or otherwise, on the containers, with the identity of the contents and date of canning, except that canned products packed in glass containers are not required to be marked with the date of canning if such information appears on the shipping container. If calendar dating is used, it must be accompanied by an explanatory statement, as provided in § 381.129(c)(2).

(d) If any marking is by code, the inspector in charge shall be informed as to its meaning.

Federal Meat Inspection Act. 21 U.S.C. §§ 601 et seq. (2012)

Labeling, marking, and container requirements. 21 U.S.C. § 607 (2012).

(e) If the Secretary has reason to believe that any marking or labeling or the size or form of any container in use or proposed for use with respect to any article subject to this subchapter is false or misleading in any particular, he may direct that such use be withheld unless the marking, labeling, or container is modified in such manner as he may prescribe so that it will not be false or misleading.

False or misleading labeling or practices generally; specific prohibitions and requirements for labels and containers. 9 CFR § 317.8 (2013).

(32) A calendar date may be shown on labeling when declared in accordance with the provisions of this subparagraph:

(i) The calendar date shall express the month of the year and the day of the month for all products and also the year in the case of products hermetically sealed in metal or glass containers, dried or frozen products, or any other products that the Administrator finds should be labeled with the year because the distribution and marketing practices with respect to such products may cause a label without a year identification to be misleading.

(ii) Immediately adjacent to the calendar date shall be a phrase explaining the meaning of such date, in terms of “packing” date, “sell by” date, or “use before” date, with or without a further qualifying phrase, *e.g.*, “For Maximum Freshness” or “For Best Quality”, and such phrases shall be approved by the Administrator as prescribed in § 317.4.

False or misleading labeling or practices generally; specific prohibitions and requirements for labels and containers. 9 CFR § 317.8 (2013).

(a) No product or any of its wrappers, packaging, or other containers shall bear any false or misleading marking, label, or other labeling and no statement, word, picture, design, or device which conveys any false impression or gives any false indication of origin or quality or is otherwise false or misleading shall appear in any marking or other labeling. No product shall be wholly or partly enclosed in any wrapper, packaging, or other container that is so made, formed, or filled as to be misleading.

USDA Labeling Approval (Meat and Poultry). 9 CFR § 317.4 (2013).

(a) No final labeling shall be used on any product unless the sketch labeling of such final labeling has been submitted for approval to the Food Labeling Division, Regulatory Programs, Food Safety and Inspection Service, and approved by such division, accompanied by FSIS form, Application for Approval of Labels, Marking, and Devices, except for generically approved labeling authorized for use in § 317.5(b). The management of the official establishment or establishment certified under a foreign inspection system, in accordance with part 327 of this subchapter, must maintain a copy of all labeling used, along with the product formulation and processing procedure, in accordance with part 320 of this subchapter. Such records shall be made available to any duly authorized representative of the Secretary upon request.

(b) The Food Labeling Division shall permit submission for approval of only sketch labeling, as defined in § 317.4(d), for all products, except as provided in § 317.5(b)(2)–(9) and except for temporary use of final labeling as prescribed in paragraph (f) of this section.

(c) All labeling required to be submitted for approval as set forth in § 317.4(a) shall be submitted in duplicate to the Food Labeling Division, Regulatory Programs,

Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, D.C. 20250. A parent company for a corporation may submit only one labeling application (in duplicate form) for a product produced in other establishments that are owned by the corporation.

(d) "Sketch" labeling is a printer's proof or equivalent which clearly shows all labeling features, size, location, and indication of final color, as specified in § 317.2. FSIS will accept sketches that are hand drawn, computer generated or other reasonable facsimiles that clearly reflect and project the final version of the labeling. Indication of final color may be met by: submission of a color sketch, submission of a sketch which indicates by descriptive language the final colors, or submission with the sketch of previously approved final labeling that indicates the final colors.

(e) Inserts, tags, liners, pasters, and like devices containing printed or graphic matter and for use on, or to be placed within, containers and coverings of product shall be submitted for approval in the same manner as provided for labeling in § 317.4(a), except that such devices which contain no reference to product and bear no misleading feature shall be used without submission for approval as prescribed in § 317.5(b)(7).

(f)(1) Consistent with the requirements of this section, temporary approval for the use of a final label or other final labeling that may otherwise be deemed deficient in some particular may be granted by the Food Labeling Division. Temporary approvals may be granted for a period not to exceed 180 calendar days, under the following conditions:

- (i) The proposed labeling would not misrepresent the product;
- (ii) The use of the labeling would not present any potential health, safety, or dietary problems to the consumer;
- (iii) Denial of the request would create undue economic hardship; and
- (iv) An unfair competitive advantage would not result from the granting of the temporary approval.

(2) Extensions of temporary approvals may also be granted by the Food Labeling Division provided that the applicant demonstrates that new circumstances, meeting the above criteria, have developed since the original temporary approval was granted.

(g) The inspector-in-charge shall approve meat carcass ink brands and meat food product ink and burning brands, which comply with parts 312 and 316 of this subchapter.

Egg Products Inspection Act. 21 U.S.C. §§ 1031 et seq. (2012)

False or misleading or use of nonapproved labeling or containers; determination by Secretary; procedures applicable; appeal. 21 U.S.C. §§ 1036 (2012).

(b) No labeling or container shall be used for egg products at official plants if it is false or misleading or has not been approved as required by the regulations of the Secretary. If the Secretary has reason to believe that any labeling or the size or form of any container in use or proposed for use with respect to egg products at any official plant is false or misleading in any particular, he may direct that such use be withheld unless the labeling or container is modified in such manner as he may prescribe so that it will not be false or misleading.

Perishable Agricultural Commodities Act. 7 U.S.C. § 499a et seq. (2012)

Unfair conduct. 7 U.S.C. § 499b (2012).

(4) For any commission merchant, dealer, or broker to make, for a fraudulent purpose, any false or misleading statement in connection with any transaction involving any perishable agricultural commodity which is received in interstate or foreign commerce by such commission merchant, or bought or sold, or contracted to be bought, sold, or consigned, in such commerce by such dealer, or the purchase or sale of which in such commerce is negotiated by such broker; or to fail or refuse truly and correctly to account and make full payment promptly in respect of any transaction in any such commodity to the person with whom such transaction is had; or to fail, without reasonable cause, to perform any specification or duty, express or implied, arising out of any undertaking in connection with any such transaction; or to fail to maintain the trust as required under section 499e(c) of this title.

Federal Trade Commission

Federal Trade Commission Act. 15 U.S.C. § 45 et seq. (2012)

Declaration of unlawfulness; power to prohibit unfair practices; inapplicability to foreign trade. 15 U.S.C. § 45(a) (2012).

(1) Unfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are hereby declared unlawful.

(2) The Commission is hereby empowered and directed to prevent persons, partnerships, or corporations, except banks, savings and loan institutions described in section 57a(f)(3) of this title, Federal credit unions described in section 57a(f)(4) of this title, common carriers subject to the Acts to regulate commerce, air carriers and foreign air carriers subject to part A of subtitle VII of title 49, and persons, partnerships, or corporations insofar as they are subject to the Packers and Stockyards Act, 1921, as amended [7 U.S.C. 181 et seq.], except as provided in section 406(b) of said Act [7 U.S.C. 227 (b)], from using unfair methods of competition in or affecting commerce and unfair or deceptive acts or practices in or affecting commerce.

Fair Packaging and Labeling Act. 15 U.S.C. § 1451 et seq. (2012)

Scope of additional regulations. 15 U.S.C. § 1454 (2012).

(c) Whenever the promulgating authority determines that regulations containing prohibitions or requirements other than those prescribed by section 1453 of this title are necessary to prevent the deception of consumers or to facilitate value comparisons as to any consumer commodity, such authority shall promulgate with respect to that commodity regulations effective . . .

APPENDIX B: STATE REQUIREMENTS IN BRIEF; SUPPORTING CHARTS FOR FIGURES 2 AND 3
Supporting Chart for Figure 2

State	No Regulation	Date Labels Required	Foods for Which Date Is Required	State	No Requirement	Date Labels Required	Foods for Which Date Is Required
Alabama				Nevada		X	Milk; potentially hazardous foods
Alaska				New Hampshire		X	Cream; pre-wrapped sandwiches
Arizona	X	X	Shellfish	New Jersey		X	Milk; dairy; shellfish
Arkansas		X	Eggs	New Mexico		X	Milk; dairy
California	X	X	Milk; dairy; shellfish	New York		X	Shellfish
Colorado	X	X	Milk; dairy	North Carolina	X		Shellfish
Connecticut	X	X	Shellfish	North Dakota		X	Packaged perishable foods; shellfish
Delaware	X	X	Shellfish	Ohio		X	Eggs; shellfish
Florida	X	X	Eggs; milk; shellfish; prepackaged sandwiches	Oklahoma		X	Packaged perishable foods
Georgia		X	Milk	Oregon			
Hawaii				Pennsylvania		X	Milk; dairy; shellfish
Idaho	X	X	Eggs; shellfish	Rhode Island		X	Packaged bakery products; shellfish
Illinois	X	X	Eggs	South Carolina			
Indiana	X	X	Eggs; shellfish	South Dakota	X		Eggs; shellfish
Iowa	X	X	Eggs	Tennessee	X		
Kansas	X	X	Eggs; shellfish	Texas			
Kentucky	X	X	Eggs	Utah		X	Shellfish
Louisiana	X	X	Shellfish	Vermont	X		Shellfish
Maine	X	X	Milk (Grade A)	Virginia		X	Dairy; shellfish
Maryland	X	X	Packaged perishable or semi-perishable foods	Washington		X	Packaged perishable foods
Massachusetts	X	X	Pre-packaged perishable foods; milk; dairy	Washington, D.C.		X	Potentially hazardous foods; dairy; meat; poultry; fish; bread products; eggs; cold meats; packaged perishable foods; shellfish etc.
Michigan	X	X	Eggs; milk; shellfish	West Virginia		X	Eggs; shellfish
Minnesota				Wisconsin	X		Shellfish
Mississippi				Wyoming	X		Shellfish
Missouri	X	X	Milk; Dairy				
Montana							
Nebraska	X						

Supporting Chart for Figure 3

State	No Regulation	Date Labels Required	Foods for Which Date Is Restricted	State	No Regulation	Date Labels Required	Foods for Which Sale After Date Is Restricted
Alabama				Nevada			Potentially hazardous foods
Alaska		X	Meat, Class A foods (baby food, infant formula, potentially hazardous foods)	New Hampshire			Pre-wrapped sandwiches
Arizona	X			New Jersey		X	Milk; dairy
Arkansas	X			New Mexico		X	Milk; dairy
California	X			New York			
Colorado	X		Eggs	North Carolina	X		
Connecticut	X			North Dakota	X		
Delaware	X			Oklahoma	X		
Florida	X	X	Shellfish and milk; dairy	Oregon			
Georgia	X		Eggs; infant formula; shellfish, milk, potentially hazardous foods, pre-packaged sandwiches	Pennsylvania		X	Packaged perishable foods
Hawaii	X			Rhode Island		X	Milk
Idaho	X			South Carolina		X	Packaged bakery products
Illinois	X	X	Eggs	South Dakota	X		
Indiana	X			Tennessee	X		
Iowa	X			Texas	X		
Kansas	X						
Kentucky	X	X	Milk/milk products				
Louisiana	X						
Maine	X						

Supporting Chart for Figure 3—Continued

State	No Regulation	Past Date Sale Not Regulated	Foods For Which Sale After Date Is Restricted	State	No Regulation	Past Date Sale Not Regulated	Foods For Which Sale After Date Is Restricted
Maryland		X	Milk	Utah	X		
Massachusetts		X	All food products (special focus on perishable and semi-perishable foods)	Vermont	X		
Michigan			Pre-packaged perishable foods, meat, milk/dairy	Virginia		X	Dairy
Minnesota	X	X		Washington		X	Perishable packaged foods
Mississippi	X			Washington, D.C.		X	Potentially hazardous foods, dairy, meat, poultry, fish, bread products, eggs, cold meats, packaged perishable foods, etc.
Missouri				West Virginia	X		
Montana	X	X	Milk	Wyoming	X		Eggs
Nebraska							

APPENDIX C: STATE DATE LABELING REGULATIONS IN FULL

Explanation of Qualifications for Applicable Regulations

This table includes information from all 50 states and the food products for which they regulate date labeling. Though this research is detailed, it is not complete and not all food products are covered in the following pages. Some food products that are *not* included in this appendix are:

- Reduced-oxygen packaged foods, which are regulated in many states.
- Refrigerated, ready-to-eat, potentially hazardous foods
- Infant formula, which already requires a “use by” date under Federal law.²⁷⁶
- Salvageable merchandise, which could require further labeling information for foods sold after date
- Very specific foods items that are unique to a few states (*e.g.*, fresh-squeezed juices)

In addition, the legal language included herein is excerpted from the laws and thus may be incomplete in some places.

How to Use This Table

- The table is divided into four columns:

- (1) Column I (Applies to Food Type) specifies the type of food to which the state law applies. “General” refers to regulations that are not associated with a specific food but apply to all food types; otherwise the specific food type will be stated.
- (2) Column II (Purpose of Law) provides broad information about the relevant section of the law as applied to the particular food, specifying whether or not date labeling is required, whether or not sale after the date is restricted (and any exemptions); and whether or not alteration of date labels is permitted, when relevant. The term “date labels” is used generally in this column to include all terms, such as “sell by,” “use by,” “best before,” *etc.*, even if the law itself may be more specific
- (3) Column III (Excerpted Language from the Law) contains excerpts of the exact language from the law or regulation.
- (4) Column IV (Legal Citation) contains the citation to the relevant section of state law or regulation.

- States with an “^{as}” after them have adopted some version of the Open Dating regulation contained in the Uniform Packaging and Labeling Regulation in NIST Handbook 130, according to the 2013 edition of the Handbook.²⁷⁷
- States with no current regulations according to the qualifications assessed in this report contain “—” under each column.

**The information contained herein is current as of August 2013.

State Date Labeling Regulations

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
General	Definition (date limit)	<p style="text-align: center;">Alabama</p> <p>(4)(a)(8) "Date limit" means all terms reasonably construed to mean food is not intended to be used or sold after the date limit, or that food quality is best before the date limit, and includes but is not limited to the terms "Sell By," "Freeze By," "Sell or Freeze By," "Not to be Sold After," "Best if Used By," "Best if Purchased By," "Expiration," or other similar designations.</p> <p>(14) Open-date statement. Terms "Sell By," "Freeze By," "Sell or Freeze By," "Not to be Sold After," "Best if Used By," "Expiration," or other terms as defined by rules or regulations; or a date without additional words shall be considered an open-date statement</p> <p>(1) In addition to the terms listed in § 20-1-20 (definitions) for (14) open date statements, the following list of terms and other terms with similar import, shall also be included and considered as open date statements:</p> <p>(a) "For full fresh flavor use by"</p> <p>(b) "For best quality purchase and use by date shown"</p> <p>(c) "Use/freeze by"</p> <p>(d) "Prepare or freeze by"</p> <p>(e) "For wholesome great taste, serve before date stamped below"</p> <p>(f) "Best when purchase by date"</p> <p>(g) "Best if sold by"</p> <p>(h) "Best used by"</p> <p>(i) "Product expiration"</p> <p>(j) "Expiration date"</p> <p>(k) "Best by"</p> <p>(l) "Best before"</p> <p>(m) "Best when purchase by"</p> <p>(n) "Use before"</p> <p>(o) "Use by"</p> <p>(p) "Full freshness until date shown when stored unopened at 40 or below"</p> <p>(q) "Prepare by"</p> <p>(r) "Fresh until"</p> <p>(s) "Use or freeze by"</p> <p>(t) "Sell or use by"</p> <p>(u) "Freshness through"</p> <p>No person shall engage in any of the following activities within this state: . . .</p> <p>(3)a. Obscure, remove, or otherwise render illegible any information appearing on beverage labels, packages, or containers related to production information, best before dates, or other disclosure printed on, affixed to, or appearing on the labels, packages, or containers.</p> <p>b. This subdivision shall not apply to any alteration of a beverage label, package, or container made by, or at the direction of, either the owner of the trademark rights to the brand that appears on the beverage label, package, or container or an authorized manufacturer of the beverage.</p> <p>c. This subdivision shall not apply to alcoholic beverages as defined in Section 28-3-1.</p> <p>d. This subdivision shall not apply to any entity, organization, or association, including, but not limited to, a nonprofit or other fund-raising organization that does not operate for a commercial purpose.</p> <p>(4)a. Store or transport any beverage product that bears a labeling that has been obscured, removed, or rendered illegible as described in subdivision (3).</p>	Ala. Admin. Code r. 420-3-22.01 (2013).
	Definition (open-date statement)		Ala. Code § 20-1-20 (2013).
	Additional descriptive terms (open-date statement)		
	Alteration of date labels not permitted		Ala. Code § 20-1-27 (2013).

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
Class A Foods	Definition (class A foods) Date labeling not required	b. This subdivision shall not apply to any alteration of a beverage label, package, or container made by, or at the direction of, either the owner of the trademark rights to the brand that appears on the beverage label, package, or container or an authorized manufacturer of the beverage. (4) Class A foods. Baby food, infant formula, and potentially hazardous food. <i>Date labeling not required for Class A food products in Alabama (with the exception of infant formula, which is federally regulated).</i> ¹	Ala. Code § 20-1-20 (2013). No relevant state law.
	Sale after date not permitted	No person shall engage in any of the following activities within this state: . . . (2) Sell or offer for sale out-of-date Class A foods which include baby food, infant formula, and potentially hazardous food.	Ala. Code § 20-1-27 (2013).
	Alteration of date labels not permitted (potentially hazardous foods)	(1) Packages of potentially hazardous foods bearing an open date statement are not to be repacked or relabeled or otherwise altered in a manner that would change the open date statement originally placed on the package. It is not permissible to reprocess products by freezing, slicing, grinding, cubing, dicing, marinating, chopping, or other similar methods unless the original open date statement is maintained on the product label. <i>Date labeling not required for meat products in Alabama.</i> (4) It is not permissible to freeze, sell, or offer for sale any ready-to-eat meat product after the expiration of the open-date statement. It is not permissible to freeze, sell, or offer for sale a product having the appearance of a ready-to-eat meat product (e.g., smoked sausages and smoked hams) after the expiration of the open-date statement unless such product bears labeling to include safe handling statements and proper cooking instructions.	Ala. Admin. Code r. 80-1-22-36 (2013).
	Date labeling not required Sale after date not permitted	(3) Any rule in this chapter to the contrary notwithstanding, meat products bearing an open-date statement may be frozen and sold after the original expiration date only if all the following stipulations are met: (a) The product is a fresh or raw meat product that is frozen prior to the expiration of the open-date statement. (b) The product is labeled “Frozen on ____” with the month, day, and year the product is frozen in the blank. (c) The original open-date statement is maintained on the product package. (d) If offered for sale at retail, the product is frozen and labeled and sold only to a household consumer by the same establishment that originally offered the product for retail sale. (e) If offered for sale at wholesale (i.e., warehouse, manufacturer, or distributor) the product is frozen and labeled and sold only to the end user (i.e., consumer, restaurant, or hotel). Provided however that consumer ready packages of fresh or raw meat can be sold to retail establishments if all other provisions of this rule are followed and each package is properly labeled. (f) Products frozen before the expiration of the open-date statement may not be thawed or further processed in any manner. (g) All products properly frozen and labeled must also maintain the safe handling labels as mandated through USDA.	Ala. Admin. Code r. 80-1-22-36 (2013).
Meat Products	Sale after date not permitted—exemptions	(h) Products not properly labeled, re-labeled or exempted as set forth in (a) through (f) of this rule shall be deemed date expired and shall be included in the equivalent number utilized to determine the applicable class of violation as determined by Rule No. 80-1-22-32. (i) Nothing in this paragraph (3) of Rule 80-1-22-36 shall preclude a manufacturer or wholesaler or retailer from having more stringent requirements for their products. Nothing in this paragraph is intended to negate the agreement between sellers of these products concerning guarantees or credit for expired products.	Ala. Admin. Code r. 80-1-22-36 (2013).

Shellfish	Date labeling required	Sale after date not restricted	Alaska	(c) In addition to meeting the requirements of (a) and (b) of this section, the operator of a food establishment shall obtain . . . (6) molluscan shellfish that are . . . packaged and identified as follows: (A) fresh or frozen shucked molluscan shellfish packaged in a single-use container with a label that identifies the name, address, and permit number of the shucker-packer or repacker of the molluscan shellfish, and either the sell-by date or the date shucked; <i>Not restricted for shellfish in Alaska.</i>	Alaska Admin. Code tit. 18, § 31.200 (2013). <i>No relevant state law.</i>
Eggs	Definition (Expiration date)		Arizona	13. "Expiration date" means the words "sell by" or "buy thru" followed by a date, including the month and day, that is not more than twenty-four days after the eggs were candled and that includes the date the eggs were candled. E. Cases, half cases, cartons or containers marked grade AA or grade A shall be marked with an expiration date. F. The expiration date marked on a case, half case or container holding fifteen dozen eggs or more shall be plainly and conspicuously marked in bold-faced type not less than 3/4" in height on one outward end of the case or container. G. The expiration date marked on a carton or container holding less than fifteen dozen eggs shall be plainly and conspicuously marked in bold-faced type not less than 1/8" in height on one end of the outward top face of each carton and on one outward end or the outward top of each container. <i>Not restricted for eggs in Arizona.</i>	Ariz. Rev. Stat. Ann. § 3-701 (2013). Ariz. Rev. Stat. Ann. § 3-719 (2013). <i>No relevant state law.</i>
	Date labeling required				
	Sale after date not restricted				
Shellfish	Date labeling required		Arkansas *	(A) Raw SHUCKED SHELLFISH shall be obtained in nonreturnable packages which bear a legible label that identifies their: . . . (2) The "sell by" or "best used by" date for packages with a capacity of less than 1.89 L (1/2 gallon) or the date shucked for packages with a capacity of 1.89 L (1/2 gallon) or more <i>Not restricted for shellfish in Arkansas.</i>	Ark. Code Ann. § 007-04-8 3-202.17 (2013). <i>No relevant state law.</i>
	Sale after date not restricted				
Milk/Dairy	Date labeling required		California	(a) At the time of sale to the consumer . . . there shall appear upon the package or container of such product the date established by the processor as the date upon which, in order to insure quality, such product is normally removed from the shelf. (a) Except as otherwise provided in Food and Agricultural Code Section 36004(c), the licensed milk producer plant which bottles or packages the following products shall be responsible for affixing the quality assurance date to all containers which are offered for sale to the consumer by a retail store: market milk, market cream, skim or non-fat milk, half and half, sour cream, sour cream dressing, low-fat milk, flavored milk, flavored dairy drink, yogurt, concentrated milk, acidophilus milk, buttermilk and cultured buttermilk, cottage cheese, creamed cottage cheese, homogenized creamed cottage spread, and partially creamed or low-fat cottage cheese. (b) The quality assurance date shall be readily identifiable by the consumer. If a numerical sequence of months and days is used, it may not be located on the container with other numbers such as factory license number or lot numbers unless such other numbers are clearly identified. If the quality assurance date is used with unidentified code numbers, the date shall be at least the first three letters of the month followed by the day of the month. <i>Not restricted for milk in California.</i>	Cal. Food & Agric. Code § 36004 (2013). Cal. Code Regs. tit. III, § 627 (2013).
	Date labeling required (scope of law)				
Shellfish	Sale after date not restricted			(a) Raw shucked shellfish shall be obtained in nonreturnable packages that bear a legible label that identifies . . . a "sell by" date or a "best if used by" date for packages with a capacity of less than 1/2 gallon, or the date shucked for packages with a capacity of 1/2 gallon or more.	<i>No relevant state law.</i> Cal. Health & Safety Code § 114039 (2013).
	Date labeling required				

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law		IV. Legal Citation
	Sale after date not restricted	Not restricted for shellfish in California.		No relevant state law.
General Eggs	Alteration of date labels not permitted	Colorado		
	Date labeling required	A. When voluntary code date information appears on a retail food establishment or manufacturers' label, it shall not be concealed or altered.		
	Further date labeling optional (formatting specified if used)	3.2 PACK DATE REQUIREMENTS Every case, carton, or container of shell eggs at the time of packing shall have legibly printed thereon, in numerals not less than 1⁄8" in height, the date the eggs are first packed, which shall be referred to in these rules as the "pack date." The pack date shall be stated numerically by month and day (e.g., 1/15), or by the numbered consecutive day of the year (e.g., 123, being the 123rd consecutive day of the year).		
	Sale after date not permitted	3.3 SELL-BY DATE REQUIREMENTS Every case, carton, or container of shell eggs may, but need not have legibly printed thereon, . . . a date by which the eggs must be sold, which shall be referred to in these rules as the "sell-by date." The sell-by date shall be no more than 30 days after the pack date. It shall be stated by month and day using the three-letter abbreviation of the month followed by the numerical day of the month (e.g., Jan. 15), and preceded by the term SELL BY or EXP. 4.1 No shell eggs may be offered for sale or sold to a consumer or restaurant more than 45 days after the pack date.		
Milk/Dairy	Date labeling required	Connecticut*		
	Alteration of date labels not permitted	Each person, handler, firm or corporation shall clearly mark each container of milk or milk product, cream, yogurt, cream cheese, cottage cheese, ricotta cheese, soft cheese, eggnog or sour cream offered for retail sale with a last sale date. In accordance with the provisions of chapter 54, the Milk Regulation Board shall adopt regulations establishing standards and criteria for label type size, color and wording that is consistent with national standards and said board may incorporate by reference The Nutritional Education and Labeling Act, 21 CFR 101. (b) Product's not manufactured, packaged and heat treated in a manner that makes the product safe to store at room temperature shall be conspicuously labeled with a last sale date. The last sale date shall be shown in contrasting color with the background. The last sale date shall be expressed as "sell by", "last sale date" or "must be sold by". (f)		
	Sale after date not restricted	Not restricted for milk in Connecticut.		
Shellfish	Date labeling required	Delaware		
	Sale after date not restricted	(A) Raw shucked shellfish shall be obtained in nonreturnable packages which bear: . . . (2) The "sell by" date for packages with a capacity of less than 1.87 L (½ gallon) or the date shucked for packages with a capacity of 1.87 L (½ gallon) or more. Not restricted for shellfish in Delaware.		

Florida		
Shellfish	Definition (terminal sale date)	(65) Terminal sale date—the last day freshly packed shellfish shall be offered for sale, that being no more than 14 calendar days subsequent to the date the product was shucked, or for oyster shellstock harvested from the Gulf of Mexico, no more than 14 days subsequent to the date shellstock was harvested. (1) . . . Containers of fresh shellfish, with a capacity of less than 64 ounces, shall further clearly and permanently bear the terminal sale date, by the numerical month, day, and last digit of the year. (11) It shall be unlawful for any person, firm, corporation, wholesale or retail dealer to sell or offer for sale any fresh shellfish after the terminal sale date has expired, or sell or offer for sale any fresh, frozen, or previously frozen shellfish not in compliance with any and all requirements of Chapter 51-1, F.A.C.
Milk/Dairy	Date labeling required	(1)(a) All milk and milk products shall be legibly labeled with their shelf-life date. The date or date code for frozen desserts and other manufactured milk products shall be approved by the department and shall indicate the date of manufacture of the product or the last day the product is to be offered for sale.
	Sale after date not permitted	(1)(e) No milk or milk products shall be offered for sale as a grade A product after the shelf-life expiration date shown on the container. All milk and milk products offered for sale after the shelf-life expiration date will be deemed to be misbranded and subject to be impounded and made unsalable or otherwise disposed of by the department, under the provisions of Section 502.231, F.S. (1)(f) This rule does not apply to containers of milk or milk products which are not to be sold in the State of Florida.
Georgia		
General	Definition (expiration date)	(35) "Expiration Date" is synonymous with Pull Date, Best-By Date, Best Before Date, Use-By Date, and Sell-By Date; and means the last date on which the following FOOD products can be sold at retail or wholesale: (a) Prepackaged sandwiches; (b) Eggs, (c) Infant formula, (d) Shucked oysters, (e) Milk, and (f) POTENTIALLY HAZARDOUS FOOD
Eggs	Date labeling required	All eggs that are sold, offered for sale or stored for sale at retail or wholesale shall use an Open Date to express the packing date or the expiration date . . . (d) Manner of Expressing the Expiration Date: An Expiration Date shall be the use of an Open Date (as defined in 40-3-1-.01(b) of these Regulations) preceded by the abbreviation "Exp." [Example: EXP -Jun 10] or the use of an Open Date (as defined in 40-3-1-.01(b) of these Regulations) preceded by the term "Sell By" [Example: Sell by JUN 10], or "Not to be Sold After" [Example: Not to be Sold After JUN 10]; or "Best Before" [Example: Best Before JUN 10] or words of similar import. (e) Prohibited Acts: The following acts and the causing thereof are hereby prohibited. 1. Eggs are not to be sold or offered for sale at retail or wholesale after the expiration date. 2. Eggs are not to be sold or offered for sale that do not meet the U.S. Standards, Grades, and Weight Classes for Shell Eggs Part 56, Subpart C, Paragraphs 56.216 and 56.217 established pursuant to the Federal Agricultural Marketing Act of 1946;
Infant formula	Date labeling required	(2)(c) EGGS cannot be offered or held for sale after the EXPIRATION DATE, according to Departmental Rules Chapter 40-3-1-.01(e). (2)(a) Infant Formula. ² 1. Each and every container of liquid or powdered infant formula made from two or more ingredients and represented as or intended as a replacement or supplement for milk, shall conspicuously show in common and express terms the calendar month and year after which the product is not to be sold or used for human consumption. 2. The expiration date, or the date after which the product is not to be sold or used for human consumption, shall be determined by the manufacturer based on empirical data, or other verifiable scientific means.
	Sale after date not permitted	(2) Expiration Dates. It shall be unlawful to sell or offer for sale, at retail or wholesale, the following food items past the EXPIRATION DATE stated on the label:

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
Milk	Date labeling required Sale after date not permitted/Definition (expiration date)	(a) Infant Formula. (2) All containers of milk and milk products shall be clearly marked with a Sell By Date with the exception of frozen desserts and some shelf stable products where processing codes may be required. (35) "Expiration Date" is synonymous with Pull Date, Best Before Date, Use-By Date, and Sell-By Date; and means the last date on which the following FOOD products can be sold at retail or wholesale: . . . (c) Milk	Ga. Comp. R. & Regs. 40-2-2-.01 (2013). Ga. Comp. R. & Regs. 40-7-1-.02 (2013).
Shellfish	Date labeling required	(8)(c)(a) Raw and frozen shucked molluscan shellfish shall be obtained in nonreturnable packages legibly bearing . . . the "sell by" date for packages with a capacity of less than 1.87 L (½ gallon) or the date shucked for packages with a capacity of 1.87 L (½ gallon) or more.	Ga. Comp. R. & Regs. 40-7-1-.10 (2013).
Prepackaged Sandwiches	Sale after date not permitted/Definition (expiration date) Date labeling required	(35) "Expiration Date" is synonymous with Pull Date, Best-By Date, Best Before Date, Use-By Date, and Sell-By Date; and means the last date on which the following FOOD products can be sold at retail or wholesale: . . . (d) Shucked oysters (2)(b) Prepackaged Sandwiches. 1. Type A . . . (ii) Type A Sandwiches which are stored, transported and offered for sale in a non-refrigerated state shall be labeled with an EXPIRATION DATE not later than two (2) days from the date of manufacture. 2. Type B Sandwiches. (i) Type B Sandwiches are those prePACKAGED sandwiches which are handled and sold as refrigerated sandwiches . . . (iii) The EXPIRATION DATE for sandwiches shall state the last day of sale in terms of the month, or its abbreviation, and numerical day of the month (e.g., 6-6). The expiration day shall be preceded by an explanatory term, such as "Expires", "Sell-By", or similar wording. Other PRODUCT CODES or dating methods are prohibited. 3. Type C Sandwiches (i) Type C Sandwiches are those prePACKAGED sandwiches which are immediately hard frozen after manufacture, as required in Subparagraph (i) and (iii) of this section, shall meet the criteria as in 40-7-1-.28(2)(b)(2)(ii); and be conspicuously displayed on the front of the wrapper. (2) Expiration Dates. It shall be unlawful to sell or offer for sale, at retail or wholesale, the following food items past the EXPIRATION DATE stated on the label: [. . .] (b) Prepackaged Sandwiches. For the purpose of this section, prePACKAGED sandwiches shall be classified as Type A, Type B or Type C.	Ga. Comp. R. & Regs. 40-7-1-.02 (2013). Ga. Comp. R. & Regs. 40-7-1-.26 (2013).
Hawaii			
Milk	Date labeling required Sale after date not restricted	Every container of processed milk and milk product held in retail and wholesale stores, restaurants, schools, or similar establishments for sale shall be conspicuously and legibly marked by the milk plant with the designation of the month and day of the month after which the milk shall not be sold for human consumption. <i>Not restricted for milk in Hawaii.</i>	Haw. Code R. §11-15-39 (2013). <i>No relevant state law.</i>
Idaho			
—	—	—	—

Illinois		
Eggs	<p>Date labeling optional</p> <p>Sale after date not permitted</p>	<p>(d) . . . it shall be allowable to include expiration dates in the labeling of consumer-size containers at retail. An expiration date, or other similar language as specified by USDA standards, that is not later than 30 days from the candling date for Grade A eggs and not later than the 15 days from the candling date for Grade AA eggs shall be used.</p> <p>(d) . . . Eggs with an expiration date marked on the container shall not be offered for sale or sold to a consumer after the date marked on the container.</p> <p>III. Admin. Code tit. 8, § 65.30 (2013).</p> <p>III. Admin. Code tit. 8, § 65.30 (2013).</p>
Indiana		
Eggs	Date labeling required	<p>Sec. 2. All eggs offered for sale in consumer packages (cases, boxes, baskets, or containers):</p> <p>(1) shall be legibly dated (month and day or consecutive day of the year) the day the eggs were packed;</p> <p>(2) shall bear an expiration date of not more than thirty (30) days from date of pack, excluding date of pack; and</p> <p>(3) may contain a "BEST BY", "BEST IF USED BY", or "USE BY" date in addition to the expiration date, which shall not exceed forty-five (45) days from the date of pack, excluding the date of pack.</p> <p>Shell eggs labeled AA shall bear in distinctly legible form an expiration date of no more than ten (10) days from date of pack excluding date of pack. The expiration date shall be stated as the month and day, for example, April 3 or 4-3, preceded by the letters "EXP" or "SELL BY". Quality is best if sold by the expiration date.</p> <p><i>Not restricted for eggs in Indiana.</i></p> <p>Sec. 136 (a) Raw shucked shellfish shall be obtained in nonreturnable packages that bear a legible label that identifies the . . . "sell by" date for packages with a capacity of less than one-half (½) gallon or the date shucked for packages with a capacity of one-half (½) gallon or more.</p> <p><i>Not restricted for shellfish in Indiana.</i></p> <p>370 Ind. Admin. Code 1-3-2 (2013).</p>
Shellfish	<p>Sale after date not restricted</p> <p>Date labeling required</p> <p>Sale after date not restricted</p>	<p><i>No relevant state law.</i></p> <p>410 Ind. Admin. Code 7-24-156 (2013).</p> <p><i>No relevant state law.</i></p>
Iowa		
Eggs	<p>Date labeling required</p> <p>Sale after date not restricted</p>	<p>(2) Each carton containing eggs for retail sale in Iowa which have been candled and graded shall be marked with:</p> <p>a. The grade and size of the eggs contained;</p> <p>b. The date the eggs were packed; and</p> <p>c. The name and address of the distributor or packer.</p> <p><i>Not restricted for eggs in Iowa.</i></p> <p>Iowa Admin. Code r. 21-36.8 (2013).</p> <p><i>No relevant state law.</i></p>
Kansas		
Eggs	<p>Date labeling required</p> <p>Sale after date not restricted</p>	<p>(a) Each container of eggs shall be labeled with the following information: . . . (6) the expiration date which shall be preceded by "exp," "sell by," "use by" or similar language.</p> <p><i>Not restricted for eggs in Kansas.</i></p> <p>Kan. Stat. Ann. § 2-2509 (2013).</p> <p><i>No relevant state law.</i></p>
Kentucky		
MILK/Milk Products	<p>Definition (Open date)</p> <p>Date labeling required</p>	<p>Section 1. (29) "Open date" means the date which shall be affixed on a consumer package or container of Grade A pasteurized milk or milk products subsequent to the date of manufacturing, processing or packaging and which represents the period of time that the product will remain unspoiled and acceptable for consumption when transported, handled and stored under approved conditions.</p> <p>Section 1. Open Date Required: No person shall sell or offer for sale any Grade A pasteurized milk or milk product in this state in a consumer package that does not bear the open date as required by this administrative regulation.</p> <p>902 Ky. Admin. Regs. 90010 (2013).</p> <p>902 Ky. Admin. Regs. 90080 (2013).</p>

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
Shellfish	Sale after date not permitted	Section 4. Enforcement. If a product is not sold within the period specified in the open date, the cabinet shall take action to remedy the condition consistent with this administrative regulation by removing the product from consumer channels and causing the product to be returned to the milk plant of origin for destruction.	902 Ky. Admin. Regs. 50:080 (2013).
	Date labeling required	Section 9. (4) The certified shellfish dealer shall assure that each package containing less than sixty-four (64) fluid ounces of fresh or frozen shellfish shall have: (b) A "sell by date" which provides a reasonable subsequent shelf-life or the words "Best if used by" followed by a date if the product would be expected to reach the end of its shelf-life. The date shall consist of the abbreviation for the month and number of the day of the month. For frozen shellfish, the year shall be added to the date. <i>Not restricted for shellfish in Kentucky.</i>	902 Ky. Admin. Regs. 45:020 (2013).
	Sale after date not restricted	<i>Not restricted for shellfish in Kentucky.</i>	<i>No relevant state law.</i>
Eggs	Date labeling required	B. Each carton or sleeve shall have on each individual container the following: 2. the date when packed; <i>Not restricted for eggs in Louisiana.</i>	La. Admin. Code tit. 7, pt. V § 929 (2013).
		<i>No relevant state law.</i>	<i>No relevant state law.</i>
Shellfish	Date labeling required	A. Each individual package containing fresh or fresh frozen shucked shellfish meat shall bear a permanent printed label approved by the Department that is legibly and indelibly marked in accordance with applicable Federal and state regulations to contain, but not be limited to, the following . . . B. The dealer shall also label each individual package containing less than 64 fluid ounces (1873 ml) of fresh or fresh frozen shellfish with the following: 1. The words "SELL BY DATE" or "BEST IF USED BY" followed by a date when the product would be expected to reach the end of its shelf life. 2. The date shall consist of the abbreviation for the month and number of the day of the month; and 3. For fresh frozen shellfish, the year shall be added to the date. <i>Not restricted for shellfish in Maine.</i>	13-188 Me. Code R. § 15.21 (2013).
		<i>No relevant state law.</i>	<i>No relevant state law.</i>
Milk (Grade A)	Date labeling required Sale after date not permitted (with exemptions)	B. A permittee shall conspicuously and legibly mark the cap or non-glass container of Grade A fluid milk with the words "Sell by", followed by the designation of the month and the day of the month after which the product may not be sold, delivered, or offered for sale. A. Except as provided in § B of this regulation, a person may not offer Grade A fluid milk for sale beyond the sell-by date. B. The following establishments may use or serve Grade A fluid milk up to 4 days beyond the sell-by date: (1) Food service facilities; (2) Hospitals; (3) Schools; (4) Institutions; and (5) Places where milk is consumed on the premises.	Md. Code Regs. 10.15.06.10 (2013).
			Md. Code Regs. 10.15.06.11 (2013).

		C. An establishment listed in § B of this regulation shall ensure that Grade A fluid milk is used by the establishment not later than 4 days beyond the sell-by date.	
General		Massachusetts	
	Definition (best if used by date)	(C) Definitions . . . Best If Used by Date: A date no later than the expiration of the estimated shelf life of a food product . . .	105 Mass. Code Regs. 520.119 (2013).
	Definition (sell by date)	(C) Definitions . . . Sell by Date: A recommended last date of retail sale of a food product which provides for a reasonable subsequent period of home shelf-life. (G)(1) Placement of the Date: A date shall be displayed with the term "sell by" or "best if used by" in reasonable proximity to the designated date. (2) Such a date shall consist of the common abbreviation for the calendar month and numerals for the day and year, <i>e.g.</i> , Feb. 10, 1980; or numerals for the month, day and year, <i>e.g.</i> , 2/10/80, except that: (a) Perishable food products need not have the year identification included in the date, and frozen and long shelf life foods need not have the day identification included in the date. (b) Fresh bakery products may be dated with only the day designation, <i>e.g.</i> , Monday, or an abbreviation thereof, <i>e.g.</i> , Mon.	105 Mass. Code Regs. 520.119 (2013).
	Date label required	(3) A date shall be accompanied by disclosure of recommended product storage conditions, if such conditions significantly affect the validity of such a date. (4) A date and any recommended storage conditions shall be printed, stamped, embossed, perforated, or otherwise shown on the retail package, a label on such package, or a tag attached to such package in a manner that is easily readable and separate from other information, graphics, or lettering so as to be clearly visible to a prospective purchaser. (5) If a date and recommended storage conditions do not appear on the principal display panel, the information panel, or on another conspicuous portion of the individual retail package, a statement must appear on the principal display or information panel indicating where such information can be found elsewhere on the package. (6) An individual prepackaged food product which is not labeled in accordance with the provisions of 105 CMR 520.119 shall be deemed "mis-branded" pursuant to M.G.L. c. 94, § 187. (F) Sale of Past Date Food Products. No person shall offer for sale in the Commonwealth any food product after the expiration of a "sell by date" or a "best if used by date" unless: (1) It is wholesome and its sensory physical qualities have not significantly diminished; and, (2) It is segregated from food products which are not "past date"; and, (3) It is clearly and conspicuously marked either on the package or through the use of shelf markers or placards, as being offered for sale after the recommended last date of sale or best use. 105 CMR 520.101 through 520.205 do not apply to: (a) Fresh meat, fresh poultry, fresh fish, fresh fruits, and fresh vegetables offered for sale unpackaged or in a container permitting sensory examination. (b) Salt and crystallized refined sugar. (c) Food products shipped in bulk form for use solely in the manufacture of other foods and not for distribution to the consumer in such bulk form or container. (d) Individually packaged food products which are prepackaged as components of a larger food item, if the larger food item is identified with a date no later than the corresponding date for any such components. (e) Food products prepackaged for retail sale with a net weight of less than 1½ ounces. (f) Food products manufactured for sale outside the Commonwealth, processed for sale outside the Commonwealth, or stored for sale outside the Commonwealth.	105 Mass. Code Regs. 520.119 (2013).
	Sale after date not permitted		

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
Packaged Perishable or Semi-Perishable Foods	Date labeling required	(D) Open Dating of Perishable and Semi Perishable Food Products No person shall sell, offer for sale, or have in his possession with intent to sell, prepackaged perishable or semi-perishable food products unless they are identified with a "sell-by-date" or a "best if used by date" determined by the manufacturer, processor, packer, repacker, retailer, or other person who had packaged such food products and displayed in the form specified in 105 CMR 520.119	105 Mass. Code Regs. 520.119 (2013).
	Sale after date not permitted	(F) Sale of Past Date Food Products. No person shall offer for sale in the Commonwealth any food product after the expiration of a "sell by date" or a "best if used by date" unless: (1) It is wholesome and its sensory physical qualities have not significantly diminished; and, (2) It is segregated from food products which are not "past date"; and, (3) It is clearly and conspicuously marked either on the package or through the use of shelf markers or placards, as being offered for sale after the recommended last date of sale or best use. (K)(1)(i) Exemptions 105 CMR 520.101 through 520.205 do not apply to: (a) Fresh meat, fresh poultry, fresh fish, fresh fruits, and fresh vegetables offered for sale unpackaged or in a container permitting sensory examination. (b) Salt and crystallized refined sugar. (c) Food products shipped in bulk form for use solely in the manufacture of other foods and not for distribution to the consumer in such bulk form or container. (d) Individually packaged food products which are prepackaged as components of a larger food item, if the larger food item is identified with a date no later than the corresponding date for any such components. (e) Food products prepackaged for retail sale with a net weight of less than 1½ ounces. (f) Food products manufactured for sale outside the Commonwealth, processed for sale outside the Commonwealth, or stored for sale outside the Commonwealth.	105 Mass. Code Regs. 520.119 (2013).
General	Definition (date)	Michigan *	
Prepackaged Perishable Foods	Date labeling required	(a) "Date" means one of the following: (i) For perishable food, the recommended last day of sale. (ii) For nonperishable food, the recommended last day of sale or consumption, if any. (2) A retail food establishment shall not sell or offer for sale a prepackaged perishable food unless the package bears a label with a date identified by month and day, except that bakery products with a shelf life of 7 days or less may be dated with a day of the week or an abbreviation. A retail food establishment may sell or offer for sale a prepackaged nonperishable food with or without a label that bears a date. (b)(c)(3) The date for prepackaged perishable food may be displayed with or without explanatory terms. If explanatory terms are used, the terms shall be limited to one of the following: "Sell by _____", "Sell before _____", "Last date of sale _____", "Recommended last date of sale _____", or "Recommended sale date _____". Other meaningful terms may be used if specifically approved by the department. (b)(c)(4) . . . A retail food establishment shall not sell or offer for sale any of the following foods under the following circumstances . . . (b) After the date, nonperishable food or prepackaged perishable food unless the food is wholesome and sound and is clearly identified as having passed the date. (c) Nonperishable food that is no longer wholesome or sound.	Mich. Comp. Laws Ann. § 289.8107 (2013).
	Date labeling required		Mich. Comp. Laws Ann. § 289.8107 (2013).
	Sale after date not permitted		Mich. Comp. Laws Ann. § 289.8107 (2013).

Milk/Dairy	<p>Date labeling required</p>	<p>Sec. 69(1) Each processor and manufacturer of milk and milk products sold in this state shall place on each container of milk and milk products a recommended last day of sale by month and date.</p> <p>(2) The sell-by date shall be expressed by the first three letters of the month followed by the numeral designating the appropriate calendar day or by expressing the calendar month numerically followed by a numeral designating the calendar day.</p> <p>(3) The sell-by date shall appear on that part of the container that is most likely to be displayed, presented, or shown under customary display conditions of sale. However, a cup container may have the sell-by date placed on the bottom.</p> <p>Sec. 69(9) Milk and milk products shall not be offered for sale after the sell-by date unless they are advertised to the final consumer in a prominent manner as being beyond the recommended last day of sale.</p> <p><i>Not required for meat in Michigan.</i></p> <p>(4) A retail food establishment shall not sell or offer for sale any of the following foods under the following circumstances:</p> <p>(a) After the date, meat that has been removed from a federally inspected retail package.</p> <p>(9) If the date is the recommended last day of sale, the date shall be calculated to allow a reasonable period for the subsequent consumption of the food, but shall not allow for a period which would result in a health nuisance as described in section 2107.</p>	<p>Mich. Comp. Laws Ann. § 288.659 (2013).</p> <p>Mich. Comp. Laws Ann. § 288.659 (2013). <i>No relevant state law.</i> Mich. Comp. Laws Ann. § 289.8107 (2013).</p>
Minnesota			
General	<p>Definition (open date; quality assurance date)</p> <p>State preemption of local rules</p>	<p>Subp. 7. Open date. "Open date" means a date consisting of the name or abbreviation or numerical designation for the month, the numerical designation for the day of the month, and the name or abbreviation for the day of the week as provided herein, and if appropriate, the year. An open date may be one of the following:</p> <p>A. Date of manufacture: the date the product was manufactured or processed. This date would be used with a statement such as "Use within 40 days of date shown" or other similar phrasing.</p> <p>B. Date of packaging: the date the product was placed in the retail package in advance of sale. This date would be used with a statement such as "Use within 30 days of date shown" or other similar phrasing.</p> <p>C. Pull date: the recommended last date for retail sale. With this date use a statement such as "Not to be sold after date shown" or "Do not sell after date shown" or "Last day of sale" or some equivalent phrasing.</p> <p>D. Freshness date (quality assurance date): of the last date which the manufacturer or processor estimates the product will retain its original freshness or peak quality. With this date use a statement such as "For maximum freshness use before date shown" or other equivalent phrasing.</p> <p>E. Expiration date: the last date the product can be expected to perform in a manner equal to consumer expectations. With this date use a statement such as "For best results use before the date shown" or other equivalent phrasing.</p> <p>F. Shelf display date: the date used by a retailer to indicate when an item was put on display.</p> <p>The purpose of this date, if used, is to aid in the proper rotation of stock and it would be used by the retailer on those perishable foods which have short shelf life and which are exempt herein from open dating.</p> <p>Subp. 8. Quality assurance date. "Quality assurance date" means any date after which the manufacturer or processor reasonably determines that the product may, by spoilage, wilting, drying, or any other foreseeable and natural phenomenon, lose its palatability or its desired or nutritive properties. As used in these parts, "quality assurance date" signifies a period of time beginning with the date of manufacture or the date when the food is packed for retail sale and ending with an open date as defined and explained in subpart 7.</p> <p>No subordinate unit of government may adopt or enforce any rule or ordinance regarding open dating of perishable foods other than sections 31.781 to 31.789.</p>	<p>Minn. R. 1550.1040 (2013).</p> <p>Minn. Stat. § 31.786 (2013).</p>

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
Eggs	Date labeling required	Subpart 1. Pack date. Consumer grades of eggs must be pack dated in type not smaller than 1/4" capitals to indicate the date of pack. All cartons and cases must bear a pack date. Retailers who carton eggs delivered in bulk cases must label the cartons with the identical pack date on the bulk case. Subp. 2. Quality assurance date. All consumer grade eggs must carry a "quality assurance date" in addition to the pack date. The pack date must be a Julian date to not confuse it with the quality assurance date. The quality assurance date must be spelled out as the month or number of the month and day, for example, "2-1" or "Feb. 1." The quality assurance date must have an explanatory clause, such as "Sell by" or "Use by," the word "Expires," or the abbreviation "Exp."	Minn. R. 1520.1900 (2013).
	Sale after date not restricted	Nothing contained in sections 31.781 to 31.789 or any rule adopted pursuant hereto shall require the removal from sale of a perishable food product after the expiration of the quality assurance date on the product nor imply that after the expiration of the quality assurance date on the product, the product is not wholesome or safe for human consumption.	Minn. Stat. § 31.784 (2013).
Perishable Foods	Definition (perishable food)	Subd. 3. "Perishable food" means any food intended for human consumption (other than meat and poultry, frozen food, or fresh fruit or vegetables), which has a quality assurance date.	Minn. Stat. § 31.782 (2013).
	Date labeling required	Every manufacturer or processor of perishable food, except meat, poultry, frozen food, and fresh fruits and vegetables, as exempt by Minnesota Statutes, section 31.782, subdivision 3, and except as provided for herein, shall place on the package or label or labeling of such perishable food an open date as described and provided for in parts 1550.1030 to 1550.1250. Perishable foods having quality assurance dates of more than 90 days need not bear open dates. Nothing contained in sections 31.781 to 31.789 or any rule adopted pursuant hereto shall require the removal from sale of a perishable food product after the expiration of the quality assurance date on the product nor imply that after the expiration of the quality assurance date on the product, the product is not wholesome or safe for human consumption.	Minn. R. 1550.1160 (2013). Minn. Stat. § 31.784 (2013).
Shellfish	Date labeling required	A. Raw shucked shellfish shall be obtained in nonreturnable packages that bear a legible label that identifies: (2) the "sell by" date for packages with a capacity of less than 1.87 liter (1/2 gallon) or the date shucked for packages with a capacity of 1.87 liter (1/2 gallon) or more. Nothing contained in sections 31.781 to 31.789 or any rule adopted pursuant hereto shall require the removal from sale of a perishable food product after the expiration of the quality assurance date on the product nor imply that after the expiration of the quality assurance date on the product, the product is not wholesome or safe for human consumption.	Minn. R. 4626.0200 (2013).
	Sale after date not restricted		Minn. Stat. § 31.784 (2013).
Mississippi			
Shellfish	Date labeling required	100.06 On packages containing sixty-four (64) fluid ounces or more shall have on the lid and sidewall or bottom the "DATE SHUCKED" indicated as the number of the day, month and year or the month, day and year. 100.07 On packages of less than sixty-four (64) fluid ounces of fresh product labeled with the wording "SELL BY" followed by a date expressed as a month, day and year, not to exceed seventeen (17) days from the date shucked.	43-46 Miss. Code R. § 17 (LexisNexis 2013).
	Sale after date not restricted	<i>Not restricted for shellfish in Mississippi.</i>	<i>No relevant state law.</i>
Missouri			
	—	—	—

Milk (Grade A)	Definition (pasteurized date)	(1)(c) "Pasteurized date" is the same date a unit of milk completes pasteurization.	Mont. Admin. R. 32.8.101 (2013).
	Definition ("sell-by" date)	(e) A "sell-by" date is defined as the 12th consecutive day, never to exceed 288 hours, following pasteurization of a unit of milk.	Mont. Admin. R. 32.8.101 (2013).
	Date labeling required	(1) Each container into which grade A pasteurized milk is placed for sale for public consumption must be marked with a pasteurized date and a sell-by date. (a) The sell-by and pasteurized date will be displayed in Arabic numerals or standard abbreviations for day and month, which shows the last day the milk may be sold as required by ARM 32.8.202.	Mont. Admin. R. 32.8.203 (2013).
	Sale after date not permitted	(1) When 12 days or more have passed following pasteurization of a unit of grade A milk, there will be no quantities of the unit of milk sold which are offered for public consumption. (2) No grade A pasteurized milk may be put in containers marked with a sell-by date which is more than 12 days after pasteurization of the milk for sale in Montana. (3) Unless otherwise agreed upon, the person who offers the milk for sale to the public is responsible for removing the milk at or before the expiration of the 12 days.	Mont. Admin. R. 32.8.202 (2013).
Nebraska			
Milk			
Nevada *			
Potentially Hazardous Foods	Date labeling required	1. At the time of sale to the consumer by a retail store of any milk or milk product, there must appear upon the package or container of the product the date established by the processor as the date on which, in order to ensure quality, the product is to be removed from the shelf or similar location or vehicle from which the product is offered for sale to the consumer. This section does not apply to any bulk milk shipments of milk or milk products between distributors. 2. The date respecting assurance of quality must appear at the top of the carton or package and must be indelible and in a contrasting color to the carton or package in the area where the date is affixed. The date respecting assurance of quality must be the first three letters of the month followed by the day of the month. The date must be of a size commensurate with the size of the container and the location on the container, but in no case may the letters be less than $\frac{7}{16}$ " in height. <i>Not restricted for milk in Nevada.</i>	Ne. Admin. Code § 584.4321 (2012).
	Date labeling required	1. "Potentially hazardous food" means: (a) Food that consists, in whole or in part, of milk, products made from milk, eggs, meat, poultry, fish, shellfish, edible crustacea or other ingredients in a form capable of supporting the rapid and progressive growth of infectious or toxigenic microorganisms. (b) Cereals, fruits, vegetables and dairy products, such as cooked rice, eggs, other than powdered eggs, baked or boiled potatoes, moist soy protein products, any mixture that includes garlic in oil, melons that have been cut, sliced or otherwise breached, whipped butter, products of margarine that contain butter or raw seed sprouts, that have been declared by the health authority to be potentially hazardous. 2. The term does not include foods which have a pH level of 4.1 or below or a value of water activity of 0.85 or less. 3. Potentially hazardous foods which have been prepared by another food establishment or food processing plant to be ready to eat and packaged in a container for refrigeration must be marked by the manufacturer to indicate the date by which the food must be sold, served or frozen 4. These foods must be discarded if not sold, served or frozen:	Ne. Admin. Code § 584.4321 (2012).
	Sale after date not restricted Definition (potentially hazardous foods)		Ne. Admin. Code § 446.025 (2012).
	Date labeling required		No relevant state law.
Potentially Hazardous Foods	Sale after date not permitted		Ne. Admin. Code § 446.145 (2012).
			Ne. Admin. Code § 446.145 (2012).

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
		(a) Within 10 calendar days after the original container is opened; or (b) On or before the date by which the food must be sold or used, as indicated on the container, whichever occurs first.	Nev. Admin. Code § 446.145 (2012).
New Hampshire			
Cream	Date labeling required	II. All retail containers of cream sold or offered for sale shall be conspicuously marked with the date of the last day on which it may be sold or offered for sale with a reasonable expectation that the cream will not be sour, as determined by the manufacturer.	N.H. Rev. Stat Ann. § 184:30-g (2013).
Prewrapped Sandwiches	Sale after date not restricted Definition (expiration date)	<i>Not restricted for cream in New Hampshire.</i> (a) "Expiration date" means the last day of sale, printed or stamped on a pre-wrapped sandwich label, determined in accordance with these rules.	<i>No relevant state law.</i> N.H. Code Admin. R. Agr. 1412.03 (2013).
	Date labeling required	(c) The expiration date for a fresh refrigerated pre-wrapped sandwich shall be clearly and legibly printed or stamped by the vendor on the sandwich wrapper label, at the time it is wrapped, by stating "expiration date" or "sell by" followed by the month and day.	N.H. Code Admin. R. Agr. 1412.04 (2013).
		(d) The expiration date for a previously frozen pre-wrapped sandwich shall be clearly and conspicuously printed or stamped on the sandwich wrapper label, at the time it is thawed for retail sale, by stating "expiration date" or "sell by" followed by the month and day.	
	Sale after date not permitted	(e) The expiration date for a fresh refrigerated pre-wrapped sandwich shall be determined by the vendor who makes the pre-wrapped sandwiches. The purpose of these rules is to protect public health and safety by establishing an expiration date on all sandwiches beyond which each sandwich shall not be sold. These rules implement the procedures of the department of agriculture, markets, and food pursuant to RSA 438:26-b, dating pre-wrapped sandwiches.	N.H. Code Admin. R. Agr. 1412.01 (2013).
New Jersey			
Milk/Dairy	Date labeling required	Containers of milk, certified milk, Vitamin D milk, homogenized milk, low fat milk, protein fortified low fat milk, skim milk, protein fortified skim milk, nonfat milk, protein fortified nonfat milk, flavored milks and dairy drinks, buttermilk, cultured buttermilk, yogurt, eggnog, creams, half-and-half and all other fluid milk products designated by the department shall be marked with the name and address of the processor or the pasteurizing plant number as assigned by the department or the state of origin and the name and address of the distributor. All containers of fluid milk products, including those mentioned above, intended for sale to consumers, (except for those products which are sterilized and packaged in hermetically sealed containers), shall be marked with a legend "NOT TO BE SOLD AFTER", or "SELL BY", or any other clearly understandable legend approved by the department, followed or accompanied by the first three letters of the month where possible . . . If two letters are used the letters MR shall mean MARCH and MY shall mean MAY; JN shall mean JUNE and JL shall mean JULY. No fluid milk product listed in this section shall be sold or offered for sale after 11:59 p.m. of the date appearing on the containers so marked.	N.J. Stat. Ann. § 24:10-57.23 (2013).
	Sale after date not permitted	(d) No milk product referred to in this regulation shall be sold or offered for sale after 11:59 p.m. of the date appearing on the package or container. Products delivered prior to the "shelf-life expiration date" may be consumed on the premises beyond the date appearing thereon.	N.J. Admin. Code § 8:21-10.20 (2013).
Shellfish	Date labeling required	(nX1) Raw shucked shellfish, packaging and identification requirements include the following: . . . ii. The "sell by" date for packages with a capacity of less than ½ gallon or the dateshucked for packages with a capacity of ½ gallon or more.	N.J. Admin. Code § 8:24-3.2 (2013).
	Sale after date not restricted	<i>Not restricted for shellfish in New Jersey.</i>	<i>No relevant state law.</i>

New Mexico		
Milk/Dairy	<p>Definition (pull date)</p> <p>Date labeling required</p> <p>Sale after date not permitted</p>	<p>E. "Pull date" means the last day on which a product is to be sold or offered for sale for human consumption.</p> <p>A. In addition to other labeling requirements, except as otherwise exempted in this rule, all processors and producer distributors shall label each container of one-half (½) pint or larger of milk, low-fat milk, non-fat milk, flavored milk, skim milk, half and half and creams sold or offered for sale with a legible pull date.</p> <p>B. The length of pull date for pasteurized products shall be determined by the processor.</p> <p>C. The length of pull date for raw products shall not exceed five (5) days including the date of packaging.</p> <p>Dairy products required to be labeled with a pull date and those dairy products labeled with an optional pull date, except frozen, dried, condensed or evaporated products, may not be sold or offered for sale for human consumption by any person after the pull date.</p>
	—	N.M. Code R. § 21.34.5.7 (2013).
	—	N.M. Code R. § 21.34.5.9 (2013).
	—	N.M. Code R. § 21.34.5.16 (2013).
New York		
	—	—
North Carolina		
General	Alteration of date labels not permitted	A food shall be deemed to be misbranded: . . .
		(15) If the labeling provided by the manufacturer, packer, distributor, or retailer on meat, meat products, poultry, or seafood includes a "sell-by" date or other indicator of a last recommended day of sale, and the date has been removed, obscured, or altered by any person other than the customer. This subdivision does not prohibit the removal of a label for the purpose of repackaging and relabeling a food item so long as the new package or new label does not bear a "sell-by" date or other indicator of a last recommended day of sale later than the original package. This subdivision does not prohibit relabeling of meat, meat products, poultry, or seafood that has had its shelf life extended through freezing, cooking, or other additional processing that extends the shelf life of the product.
Shellfish	<p>Definition (sell by date)</p> <p>Date labeling required</p> <p>Sale after date not restricted</p>	<p>(26) "SELL BY date" means a date conspicuously placed on a container or tag by which a consumer is informed of the latest date the product will remain suitable for sale.</p> <p>(c) Any container of shucked shellfish which has a capacity of 64 fluid ounces or more shall be dated as of the date shucked on both the lid and sidewall or bottom. Any container of shucked shellfish which has a capacity of less than 64 fluid ounces shall indicate a SELL BY date.</p> <p><i>Not restricted for shellfish in North Carolina.</i></p>
		15A N.C. Admin. Code 18A.0301 (2013).
		15A N.C. Admin. Code 18A.0614 (2013).
		<i>No relevant state law.</i>
North Dakota		
Shellfish	<p>Date labeling required</p> <p>Sale after date not restricted</p>	<p>1. Raw shucked shellfish shall be obtained in nonreturnable packages which bear a legible label that identifies . . .</p> <p>(b) The sell by date for packages with a capacity of less than 1.87 L (½ gallon) or the date shucked for packages with a capacity of 1.87 L (½ gallon) or more.</p> <p><i>Not restricted for shellfish in North Dakota.</i></p>
		N.D. Admin. Code 33-33-04-03.1 (2013).
		<i>No relevant state law.</i>
Ohio		
General	State preemption of local rules	(C) To ensure that a uniform system of determining the useful product life of perishable food products for sale within the state is established, persons complying with this section and the rules established pursuant thereto are exempt from any local ordinances or rules pertaining to the quality assurance period of food products or the manner in which the quality assurance period and perishability of food products are to be discussed.
		Ohio Rev. Code Ann. § 3715.171 (2013).

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
Packaged Perishable Foods	Definition (quality assurance period)	"Quality assurance period" means the period of time following the completion of normal manufacturing, processing, and packaging procedures during which a food product subjected to normal conditions of exposure will maintain conformity with all of the characteristics normally associated with the food product and will provide the benefits for which the food product is normally purchased. Food product characteristics include, but are not limited to, taste, texture, smell, nutritional value, and reaction value with other food products.	Ohio Rev. Code Ann. § 3715.171 (2013).
	Definition (sale date)	"Sale date" means the date by which the manufacturer, processor, or packager of a packaged food product recommends that the food product be sold for consumption based on the food product's quality assurance period.	Ohio Rev. Code Ann. § 3715.171 (2013).
	Date labeling required	(A) Except as provided in division (B) of this section, no person shall knowingly sell or offer to sell in this state any packaged perishable food product that has a quality assurance period of thirty days or less, unless the package is clearly marked by the packager with its sale date. The sale date shall be legible and understandable to the consumer. The director of agriculture shall make rules in accordance with Chapter 119 of the Revised Code establishing the manner in which the sale date shall be affixed to food products.	Ohio Rev. Code Ann. § 3715.171 (2013).
	Sale after date not restricted Date labeling required	(B) The provisions of this section do not apply to fresh fruits and vegetables or to meat, including poultry, whether packaged or unpackaged, nor do they apply to packaged perishable food products when sold or offered for sale at any place of business where less than one hundred thousand dollars of all products were sold during the preceding year. <i>Not restricted for packaged perishable foods in Ohio.</i> (F)(iii)(d) The dealer shall assure that each package containing less than sixty-four fluid ounces of fresh or frozen shellfish shall have: . . . (ii) A "Sell by date" which provides a reasonable subsequent shelflife or the words "Best if used by" followed by a date when the product would be expected to reach the end of its shelf-life. The date shall consist of the abbreviation for the month and number of the day of the month. For frozen shellfish, the year will be added to the date. <i>Not restricted for shellfish in Ohio.</i>	No relevant state law. Ohio Admin. Code 901:3-8-03 (2013).
Eggs Shellfish	Date labeling required	Oklahoma * B. An expiration date shall be used on the container, the date shall be preceded by "EXP", "sell by", or "use through". <i>Not restricted for eggs in Oklahoma.</i> (a) Raw shucked shellfish shall be obtained in nonreturnable packages which bear a legible label that identifies the: . . . (2) The "sell by" or "best if used by" date for packages with a capacity of less than 1.89 L (½ gallon) or the date shucked for packages with a capacity of 1.89 L (½ gallon) or more. <i>Not restricted for shellfish in Oklahoma.</i>	Okla. Stat. tit. 2, § 10-72 (2013). No relevant state law. Okla. Admin. Code § 310-257-5-15 (2013).
	Sale after date not restricted		No relevant state law.
Packaged Perishable Foods	Definition (open date) Date labeling required	Oregon (2) "Open date" means a date clearly visible to retail consumers showing the pull date, packing date or other date described in ORS 616.805(2). No person shall sell or offer for sale at retail any packaged perishable food unless the package bears a clearly marked, printed or stamped label showing the open date for the perishable food in the package. Such label shall be so designed and placed as to be clearly visible to the consumer. Unless otherwise provided, the following perishable foods shall be open date labeled with the pull date:	Or. Rev. Stat. § 616.805 (2013). Or. Rev. Stat. § 616.815 (2013). Or. Admin. R. 603-025-0050 (2013).

		<p>(1) Processed or cured meat and meat products including wieners, bologna, luncheon meat, liver sausage, salami, braunschweiger, hams and ham products, and bacon (tuck or vacuum packed).</p> <p>(2) Fluid milk and cream products for which a standard of identity has been established under ORS Chapter 621, cottage cheeses, yogurts, cheeses with a moisture content of more than 50 percent, sour creams, and party dips.</p> <p>(3) Bakery products as defined in subsection (2) of ORS 625.010, pastries, cookies, or crackers having a moisture content of 16 percent or more.</p> <p>(4) Eggs in shell.</p> <p>(5) Vegetable, macaroni, or potato salads that use mayonnaise or other acidic dressing as an ingredient or dressing, puddings, sandwiches, and other ready-to-eat products.</p> <p>(6) Poultry, including chickens, fryers, turkeys, ducks, geese, and other domesticated birds.</p> <p>(7) Fresh or raw packaged meat products, whether whole, ground, chopped or fabricated.</p> <p>(8) Fresh sausage products.</p> <p>(9) Fresh seafood products.</p> <p>(10) Fresh fish products (not breaded or precooked).</p> <p>(1) No person shall sell or offer for sale at retail any packaged perishable food after the expiration of the open pull date appearing on the label of the package or container unless:</p> <p>(a) The package has been separated from packages of perishable food with open pull dates that have not expired;</p> <p>(b) Each such package or group of packages is clearly identified in retail display as having an expired open pull date; and</p> <p>(c) The food is fit for human consumption according to applicable state and Federal law.</p> <p>(2) Notwithstanding the provisions of this section, a vendor shall be allowed the first 8 business hours after the expiration of the open pull date within which to remove all packages with an expired pull date.</p> <p>No person shall:</p> <p>(1) Alter, deface or remove the open date from any perishable food retail or shipping package carton, container or wrapper.</p> <p>(2) Label any perishable food retail or shipping package carton, container or wrapper in a manner that does not conform to the rules promulgated pursuant to ORS 616.835.</p>	<p>Or. Rev. Stat. § 616.825 (2013).</p> <p>Or. Rev. Stat. § 616.830 (2013).</p>
	<p>Sale after date not permitted (with exemptions)</p> <p>Alteration of date labels not permitted</p>		
Milk	<p>Date labeling required</p> <p>Sale after date not permitted</p> <p>Date labeling required</p> <p>Sale after date not restricted</p>	<p>(a) Label requirement. The cap or nonglass container of pasteurized milk held in retail food stores, restaurants, schools or similar food facilities for resale shall be conspicuously and legibly marked in a contrasting color with the designation of the "sell-by" date—the month and day of the month after which the product may not be sold or offered for sale. The designation may be numerical—such as "8-15"—or with the use of an abbreviation for the month, such as "AUG 15 or AU 15." The words "Sell by" or "Not to be sold after" must precede the designation of the date, or the statement "Not to be sold after the date stamped above" must appear legibly on the container. This designation of the date may not exceed 17 days beginning after midnight on the day on which the milk was pasteurized.</p> <p>(c) Prohibition. Pasteurized milk may not be sold or offered for sale if the milk is sold or offered for sale after the sell-by date designated on the container.</p> <p>(a) Label requirement. Raw shucked shellfish shall be obtained in nonreturnable packages which bear a legible label that identifies the following: (1) (2) For packages with a capacity of less than 1.87 L (½ gallon): the "sell by" or "best if used by" date.</p> <p><i>Not restricted for shellfish in Pennsylvania.</i></p>	<p>7 Pa. Code § 59a.15 (2013).</p> <p>7 Pa. Code § 59a.15 (2013).</p> <p>7 Pa. Code § 46.246 (2013).</p> <p><i>No relevant state law.</i></p>
Shellfish			

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
Packaged Bakery Products	Definition (pull date)	<p align="center">Rhode Island</p> <p>(C) 'Pull Date' is the final date or day as established by the packer or manufacturer upon which a packaged bakery product may be sold, except as provided under Chapter 21-33, Section 3 and Section R21-33-PBP 6.00 of these rules and regulations.</p> <p>(A) A 'Packaged Bakery Product' is a packaged bakery or bakery-type product consisting of flour and other ingredients having a normal shelf life as established by the manufacturer or distributor of sixty (60) days or less.</p> <p>The term shall not include frozen or canned products or foods which are or may be baked as part of a cooking or preparation procedure.</p> <p>All packaged bakery product sold in this state shall have a pull date in a conspicuous place upon each package in which they are sold in accordance with these regulations and Chapter 21-33 of Rhode Island General Laws of 1966, as amended.</p> <p>Packaged bakery products may be sold after their 'Pull Date', provided however, that:</p> <p>(1) Such products are segregated from such products which have not passed their 'Pull Date', and</p> <p>(2) Shelf markers or placards, or markings on the individual packages clearly identify such products as being offered for sale 'Past Date'.</p> <p>The requirements of this section do not apply to any business whose exclusive purpose is the sale of past-date bakery products.</p> <p>6.6(d) The dealer shall assure that each package containing less than 64 fluid ounces of fresh or frozen shellfish shall have:</p> <p>(i) The shucker-packer's or repacker's license number on the label; and</p> <p>(ii) A 'SELL-BY DATE' which provides a reasonable subsequent shelf-life or the words 'BEST IF USED BY' followed by a date when the product would be expected to reach the end of its shelf-life. The date shall consist of the abbreviation for the month and number of the day of the month. For frozen shellfish, the year will be added to the date.</p> <p><i>Not restricted for shellfish in Rhode Island.</i></p>	31-3-5 R.I. Code R. § 21-33-PBP 1.00 (2013).
	Definition (packaged bakery product)		31-3-5 R.I. Code R. § 21-33-PBP 1.00 (2013).
	Date labeling required		31-3-5 R.I. Code R. § 21-33-PBP 1.00 (2013).
	Sale after date not permitted (with exemptions)		31-3-5 R.I. Code R. § 21-33-PBP 2.00 (2013).
	Date labeling required		31-3-5 R.I. Code R. § 21-33-PBP 6.00 (2013).
Shellfish	Date labeling required	31-3-9 R.I. Code R. § 6.0 (2013).	31-3-9 R.I. Code R. § 6.0 (2013).
	Sale after date not restricted	<i>No relevant state law.</i>	<i>No relevant state law.</i>
Eggs	Date labeling required	<p align="center">South Carolina</p> <p>(E) . . . On this label must be printed or stamped, legibly in letters not less than 1/4" in size, the date when the eggs were packed and candled or the expiration date, which may not exceed forty-five days from the date packed</p> <p><i>Not restricted for eggs in South Carolina.</i></p> <p>(2) Packages containing less than sixty-four (64) fluid ounces shall include:</p> <p>(a) The words "SELL BY" or "BEST IF USED BY" followed by a reasonable date when the product would be expected to reach the end of its shelf life;</p> <p>(b) The date as a month and day of the month; and</p> <p>(c) For fresh frozen shellfish, the year shall be added to the date.</p> <p><i>Not restricted for shellfish in South Carolina.</i></p>	S.C. Code Ann. § 39-39-140 (2013).
	Sale after date not restricted		<i>No relevant state law.</i>
	Date labeling required		S.C. Code Ann. Regs. 61-47 (2013).
Shellfish	Sale after date not restricted	<i>No relevant state law.</i>	<i>No relevant state law.</i>

South Dakota *		—	—
Tennessee		—	—
Texas		—	—
Shellfish	Date labeling required	(d) The dealer shall assure that each package containing less than 64 fluid ounces of fresh or frozen molluscan shellfish shall have L . . . l (2) a "SELL BY DATE" which provides a reasonable subsequent shelf life or the words "BEST IF USED BY" followed by a date when the product would be expected to reach the end of its shelf life. <i>Not restricted for shellfish in Texas.</i>	25 Tex. Admin. Code § 241.66 (2013).
	Sale after date not restricted		<i>No relevant state law.</i>
Utah		—	—
Vermont		—	—
Shellfish	Date labeling required	R.1. Raw shucked shellfish shall be obtained in nonreturnable packages which bear a legible label that identifies the: . . . b. The "sell by" date for packages with a capacity of less than 1.87 L (½ gallon) or the date shucked for packages with a capacity of 1.87 L (½gallon) or more. <i>Not restricted for shellfish in Vermont.</i>	12-5 Vt. Code R. § 305-204 (2013).
	Sale after date not restricted		<i>No relevant state law.</i>
Virginia		—	—
Dairy	Definition (dairy products)	"Dairy product" means butter, natural or processed cheese, dry whole milk, nonfat dry milk, dry butter-milk, dry whey, evaporated whole or skim milk, condensed whole milk and condensed plain or sweetened skim milk.	2 VA. Admin. Code § 5-531-10 (2013).
	Date labeling required	4. No person may sell or offer for sale to the final consumer any dairy product in container or package form that does not bear a "sell by date."	2 VA. Admin. Code § 5-531-60 (2013).
	Sale after date not permitted	5. No person may sell or offer for sale to the final consumer any dairy product in container or package form after the "sell by date" shown on the package.	2 VA. Admin. Code § 5-531-60 (2013).
	Alteration of date labels not permitted	6. No person may change, remove, or replace the "sell by date" on any dairy product in container or package form after the "sell by date" is initially affixed to the package.	2 VA. Admin. Code § 5-531-60 (2013).
	Date labeling required	A. Raw shucked shellfish shall be obtained in nonreturnable packages that bear a legible label that identifies the: . . . "sell by" or "best if used by" date for packages with a capacity of less than ½ gallon (1.87 L) or the date shucked for packages with a capacity of ½ gallon (1.87 L) or more. <i>Not restricted for shellfish in Virginia.</i>	2 VA. Admin. Code § 5-585-400 (2013).
Shellfish	Date labeling required		<i>No relevant state law.</i>
	Sale after date not restricted		<i>No relevant state law.</i>
Washington *		—	—
Perishable Packaged Food Goods	Definition (pull date)	(2) "Pull date" means the latest date a packaged food product shall be offered for sale to the public.	Wash. Rev. Code Ann. § 69.04.900 (2013).
	Definition (shelf life)	(3) "Shelf life" means the length of time during which a packaged food product will retain its safe consumption quality if stored under proper temperature conditions.	Wash. Rev. Code Ann. § 69.04.900 (2013).
	Definition (perishable packaged food goods)	(1) "Perishable packaged food goods" means and includes all foods and beverages, except alcoholic beverages, frozen foods, fresh meat, poultry and fish and a raw agricultural commodity as defined in this chapter, intended for human consumption which are canned, bottled, or packaged other than at the time and point of retail sale, which have a high risk of spoilage within a period of thirty days, and as determined by the director of the department of agriculture by rule and regulation to be perishable.	Wash. Rev. Code Ann. § 69.04.900 (2013).

State Date Labeling Regulations—Continued

I. Applies To Food Type	II. Purpose of Law	III. Excerpted Language from the Law	IV. Legal Citation
	<p>Date labeling required</p> <p>Sale after date not permitted (with exemptions)</p> <p>Alteration of date labels not permitted</p>	<p>All perishable packaged food goods with a projected shelf life of thirty days or less, which are offered for sale to the public after January 1, 1974 shall state on the package the pull date.</p> <p>Can products be sold after the pull date? Yes, products can be sold after the pull date has expired if they are still wholesome, not a danger to health and clearly labeled indicating that the pull date has expired. They must be separated from products that are still within pull date.</p> <p>Can pull dates be changed? No, pull dates on perishable packaged foods subject to pull dating may not be changed, crossed-out or concealed.</p>	<p>Wash. Rev. Code Ann. § 69.04.905 (2013).</p> <p>Wash. Admin. Code § 16-142-130 (2013).</p> <p>Wash. Admin. Code § 16-142-150 (2013).</p>
Washington, D.C.			
General	Definition (pull date)	<p>Pull date—the date after which the food may not be sold, unless isolated and prominently labeled as being beyond the last date on which the food should be sold without a significant risk of spoilage, loss of palatability if stored by the consumer after that date and in the manner which the food can reasonably be expected to be stored.</p>	D.C. Mun. Regs. tit. 25-A, § 9901 (2013).
Potentially Hazardous Foods, Dairy, Meat/Poultry, Eggs	Date labeling required	<p>718.1 All pasteurized fluid milk, fresh meat, poultry, fish, bread products, eggs, butter, cheese, cold meat cuts, mildly processed pasteurized products, and potentially hazardous foods sold in food-retail establishments which are pre-wrapped and not intended to be eaten on the premises of the food establishment shall have easily understood pull dates prominently displayed on their containers.</p>	D.C. Mun. Regs. tit. 25-A, § 718 (2013).
Packaged Perishable Food	Sale after date not permitted	<p>Pull date—the date after which the food may not be sold, unless isolated and prominently labeled as being beyond the last date on which the food should be sold without a significant risk of spoilage, loss of palatability if stored by the consumer after that date and in the manner which the food can reasonably be expected to be stored.</p>	D.C. Mun. Regs. tit. 25-A, § 9901 (2013).
Shellfish	Alteration of date labels not permitted	<p>718.2 If any food that has a pull date is rewrapped, the new package shall retain the original pull date and the word "REWRAPPED" shall be prominent displayed on the package.</p>	D.C. Mun. Regs. tit. 25-A, § 718 (2013).
	Date labeling not required	<p><i>Date labeling not required for packaged perishable food in Washington, D.C.</i></p>	No relevant state law.
	Sale after date not permitted	<p>No person shall sell, trade, or barter any perishable packaged food beyond the pull date appearing thereon.</p>	D.C. Mun. Regs. tit. 25-B, § 3606 (2013).
	Alteration of date labels not permitted	<p>3606.2 No person shall rewrap or repack any packaged perishable food with the intention of placing a pull date on the food that is different from the original pull date.</p>	D.C. Mun. Regs. tit. 25-B, § 3606 (2013).
Shellfish	Date labeling required	<p>2409.5 Each individual package containing less than sixty-four fluid ounces (64 fl. oz.) of fresh or frozen shellfish shall be labeled with the following information: (1) A "Sell by" date which provides a reasonable subsequent shelf-life or the words "Best if used by" followed by a date when the product would be expected to reach the end of its shelf-life.</p>	D.C. Mun. Regs. tit. 25-B, § 2403 (2013).
	Sale after date not restricted	<p><i>Not restricted for shellfish in Washington, D.C.</i></p>	No relevant state law.
West Virginia *			
Eggs	<p>Date labeling required</p> <p>Sale after date not restricted</p>	<p>6.5 Egg producers who own three thousand birds or less shall denote the expiration date of the eggs on the outside container in which the egg cards are transported or on an invoice provided to the retailer.</p> <p><i>Not restricted for eggs in West Virginia.</i></p>	<p>W. Va. Code R. § 61-7A-6 (2013).</p> <p><i>No relevant state law.</i></p>
Wisconsin			
Eggs	Date labeling required	(1)(e) One of the following dates, in addition to the packing date under par. (d):	<p>Wis. Admin. Code Agric. Trade & Consumer Prot. § 88-08 (2013).</p>

		<p>1. An expiration date or "sell by" date after which the eggs may not be offered for sale or sold at retail. The expiration date may not be more than 30 days from the packing date, including the day on which the eggs were packed. The expiration date or "sell by" date shall be designated by at least the first three letters of the month and the date within that month. The date shall be accompanied by a phrase or abbreviation such as "sell by" or "EXP" which clearly identifies it as an expiration date or "sell by" date.</p> <p>2. A "use by" date consisting of at least the first three letters of the month, and the date within that month. The date shall be accompanied by a phrase such as "use by," "best if used by" or "use before," which indicates that the consumer should use the eggs before that date.</p> <p>(4)(a) No eggs may be sold as whole eggs at retail after the expiration or "sell by" date specified for those eggs under subs. (1)(e)1. or (2)(g)1. If otherwise used as human food, the eggs shall meet at least grade B egg standards.</p> <p>(4)(b) Eggs labeled with dates under subs. (1)(e) or (2)(g) shall retain those dates and may not be repackaged or relabeled with any other dates.</p> <p>3-202.17(A) Raw shucked shellfish shall be obtained in nonreturnable packages which bear a legible label that identifies the: . . . (2) The "sell by" date for packages with a capacity of less than 1.87 L (½ gallon) or the date shucked for packages with a capacity of 1.87 L (½ gallon) or more.</p> <p><i>Not restricted for shellfish in Wisconsin.</i></p>	<p>Wis. Admin. Code Agric. Trade & Consumer Prot. §88-08 (2013).</p> <p>Wis. Admin. Code Agric. Trade & Consumer Prot. §88-08 (2013).</p> <p>Wis. Admin. Code Agric. Trade & Consumer Prot. §75, App. (2013).</p> <p><i>No relevant state law.</i></p>
Shellfish	<p>Sale after date not permitted</p> <p>Alteration of date labels not permitted</p> <p>Date labeling required</p> <p>Sale after date not restricted</p>		
Wyoming			
Shellfish	<p>Date labeling required</p> <p>Sale after date not restricted</p>	<p>(a) Raw shucked shellfish shall be obtained in nonreturnable packages which bear a legible label that identifies the: . . . (ii) The "sell by" date for packages with a capacity of less than ½ (2) gallon (1.87 L) or the date shucked for packages with a capacity of ½ (2) gallon (1.87 L) or more.</p> <p><i>Not restricted for shellfish in Wyoming.</i></p>	<p>AGR FSF 3 Wyo. Code R. § 11 (2013).</p> <p><i>No relevant state law.</i></p>

Endnotes

1. Dana Gunders, Natural Resources Def. Council, *Wasted: How America Is Losing Up to 40% of Its Food from Farm to Fork to Landfill* 12 (2012).
2. Jonathan Bloom, *American Wasteland* xii (Da Capo Lifelong Books, 2011).
3. Gunders, *supra* note 1, at 13.
4. *Food Security in the U.S.*, U.S. Dep't of Agric. Econ. Research Serv. (last updated Sept. 4, 2012), <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx> (last visited Apr. 4, 2013).
5. Gunders, *supra* note 1, at 4. According to another statistic, redistributing only two percent of food waste could provide the needed calories/day/person to lift all food-insecure Americans above the hunger line. Marlene White, *American Wasteland: Jonathan Bloom on Why Food Waste Deserves Our Attention*, *worldwatch.org* (Mar. 14, 2012), <http://blogs.worldwatch.org/nourishingtheplanet/american-wasteland-jonathan-bloom-on-why-food-waste-deserves-our-attention> (last visited July 3, 2013).
6. McKinsey Global Inst., *Resource Revolution: Meeting The World's Energy, Materials, Food, And Water Needs* 72 (2011).
7. Jean C. Buzby & Jeffry Hyman, *Total and Per Capita Value of Food Loss in the United States*, 37 *FOOD POL'Y* 561, 562 (2012).
8. McKinsey Global Inst., *supra* note 6, at 72.
9. Kevin D. Hall, *et al.*, *The Progressive Increase of Food Waste in America and Its Environmental Impact*, 4 *PLOS ONE* 1, 2(2009), available at <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0007940>.
10. Bloom, *supra* note 2, at xi.
11. Bloom, *supra* note 2, at 187.
12. See, e.g., WRAP, *Consumer Insight: Date Labels and Storage Guidance* (2011), available at http://www.wrap.org.uk/sites/files/wrap/Technical_report_dates.pdf; Gunders, *supra* note 1, at 12–13; Bloom, *supra* note 2, at 164–67.
13. Bloom, *supra* note Error! Bookmark not defined., at 166.
14. Bio Intelligence Serv., *Preparatory Study on Food Waste Across EU* 27, at 124–27 (2010).
15. Office of Tech. Assessment, *Open Shelf-Life Dating of Food* 1 (1979), available at www.princeton.edu/~ota/disk3/1979/7911/7911.PDF (last visited Dec. 21, 2012). The Office of Technology Assessment was an office of the United States Congress from 1972 to 1995. Its reports on technological and scientific issues were widely praised for their objectivity and authoritative analysis. See *Technology Assessment and Congress*, Federation of American Scientists' Office of Technology Assessment Archive, http://www.fas.org/ota/technology_assessment_and_congress/ (last visited July 3, 2013).
16. Office of Tech. Assessment, *supra* note 1, at 1.
17. *Id.*; see also Inst. of Food Technologists, *Open Shelf-life Dating of Food*, 35 *FOOD TECH.* 89, 89 (1981).
18. Gerri Ransom, National Advisory Committee on Microbiological Criteria for Foods, *Consideration for Establishing Safety-Based Consume-By Date Labels for Refrigerated Ready-to-Eat Foods*, 68 *J. OF FOOD PROTECTION* 1761, 1763 (2005).
19. U.S. Gov't Accountability Office, *MWD-75-19, Food Labeling: Goals, Shortcomings, and Proposed Changes* 44 (1975), available at <http://www.gao.gov/assets/120/115505.pdf>.
20. *Id.*
21. Ransom, *supra* note 18, at 1763.
22. See Gov't Accountability Office, *supra* note 19, at 43. When the New York State Consumer Protection Board released a book that allowed consumers to decipher closed dates in the early 1980s, the agency was inundated with more than 100,000 requests for the publication in the first year. See Inst. of Food Technologists, *supra* note 89, at 89.
23. A USDA study from 1973 found that more than 60 retail chains, comprising about 15,000 food stores nationwide, had implemented open dating systems. See Gov't Accountability Office, *supra* note Error! Bookmark not defined., at 45. While open code dating became more prevalent in the 1970s, the practice itself can be traced back further. There is evidence of open dates being used as early as 1917, and in the 1930s *Consumer Reports* found that consumers had a desire for a more shopper-friendly date label system. See Theodore P. Labuza & Lynn M. Szybist, *Open Dating of Foods* 7 (2001).
24. *Id.* at 45.
25. *Id.* at 43.
26. Office of Tech. Assessment, *supra* note 15, at 1
27. *Id.* at 5.
28. *Id.* at 5.
29. Carol Haddix, *Congress Made Food Label a Big Deal*, *CHICAGO TRIBUNE*, Jan. 12, 1978, at F19, available at ProQuest Historical Newspapers, Doc. No. 169689062.
30. Gov't Accountability Office, *supra* note 19, at 48.
31. *Id.*
32. *Id.*
33. *Id.* at 49.
34. See S. 2373, 93d Cong., 1st Sess. (1973) (the one bill that did eventually pass the Senate). See also Office of Tech. Assessment, *supra* note 15, at 3.
35. Select Comm. On Nutrition & Human Needs, 93d Cong., *National Nutrition Policy: Nutrition and the Consumer*, Working Paper 11 (Comm. Print 1974) (prepared by Freeman H. Quimby & Cynthia B. Chapman).
36. See *Id.*
37. 92 Cong. Rec. S201101-11 (June 16, 1971) (statement of Sen. Hartke).
38. Food Amendments of 1974: Hearing on S. 2373 and Amendments 962 and 1053, and S. 3012 Before the S. Comm. on Commerce, 93rd Cong. 219 (1974) (statement of Thomas K. Zaucha of the National Association of Food Chains.)
39. Harvey L. Hensel, *Look What Consumerism Has Done Now*, 29 *FOOD DRUG COSM. L.J.* 220, 226 (1974).
40. *Id.* at 227–28 (1974).
41. Gov't Accountability Office, *supra* note 19, at 44, 47; Inst. of Food Technologists, *supra* note 17, at 94–96.
42. *Id.* at 46–47.
43. *Id.* at 48.
44. See, e.g., Hensel, *supra* note 39, at 227 Select Comm. On Nutrition and Human Needs, *supra* note 37, at 11.
45. Hensel, *supra* note 39, at 227 (noting that in 1974 sixteen open code dating state laws already existed, and also that twenty-three states were in the process of introducing eighty-four open code dating bills in the legislative session).
46. *Id.* at 227–28.
47. Gov't Accountability Office, *supra* note 19, at 49.
48. H.R. 2897, 106th Cong. (1999).
49. See H.R. 2897, 106th Cong. (1999); H.R. 2611, 107th Cong. (2001); H.R. 468, 108th Cong. (2003); H.R. 3570, 109th Cong. (2005); H.R. 4233, 110th Cong. (2005); HR 2087, 111th Cong. (2009).
50. H.R. 2087, 111th Cong. (2009).
51. H.R. 2087, 111th Cong., ¶6 (2009).
52. H.R. 2087, 111th Cong., ¶2 (2009); 21 CFR § 101.9(j) (2013).
53. H.R. 2087, 111th Cong., ¶1 (2009).
54. *Fact Sheets: Food Product Dating*, U.S. Dep't of Agric. Food Safety & Inspection Serv., <http://www.fsis.usda.gov/wps/portal/fgis/topics/food-safety-education/get-answers/foodsafety-fact-sheets/food-labeling/food-product-dating/foodproduct-dating> (last visited July 3, 2013). The exception to this rule is infant formula, for which the Federal Government requires a “use by” date. See 21 CFR § 107.20 (2013).
55. Eastern Research Grp., Inc., *Current State of Food Product Open Dates In The U.S.* 1–13 (2003).
56. U.S. Const. art I, §8, cl. 3. Congress shall have the power “to regulate commerce with foreign nations, among the several states, and with the Indian Tribes.”
57. See *supra* notes 26–30 and accompanying text.
58. Food & Drug Admin., *About FDA*, <http://www.fda.gov/AboutFDA/Transparency/Basics/ucm242648.htm> (last visited July 31, 2013). U.S. Dep't of Agric. Food Safety & Inspection Serv., *Food Product Dating*, *supra* note 54.

59. 21 U.S.C. §§ 301–392 (2012); 21 CFR § 1.4 (2012); 21 U.S.C. § 343–1 (2012); 15 U.S.C. §§ 1451–1461 (2012); 21 CFR § 10.40 (2013); 7 U.S.C. 499 (2012); 21 U.S.C. § 2201–52 (2012). *See also*, U.S. Dep’t of Agric., Food Safety & Inspection Serv., *A Guide to Federal Food Labeling Requirements for Meat and Poultry Products* 6 (2007).
60. 21 U.S.C. §§ 451–472 (2012); 21 U.S.C. §§ 601–695 (2012); 21 U.S.C. §§ 1031–1056 (2012); 12 U.S.C. § 1141 (2012); 7 CFR § 2.79 (a)(1) (2013); 7 CFR § 2.53 (2013); 9 CFR § 300.2 (2013). *See* Regulations & Policies: *Regulations for Package Dating*, U.S. Dept of Agric. Food Safety & Inspection Serv., http://www.fsis.usda.gov/regulations/Regs_for_Package_Dating/index.asp (last visited Apr. 18, 2013).
61. FDA regulates shell eggs and USDA regulates processed egg products as well as certified shell eggs under a voluntary grading program. 21 U.S.C. §§ 1031–1056 (2012); 21 U.S.C. §§ 301–392 (2012). Under the Egg Products Inspection Act, FDA and USDA share responsibility over egg products; USDA has a primary role. 63 Fed. Reg. 27502, 27508 (May 19, 1998).
62. FDA regulates food safety practices in the production and harvesting of raw fruits and vegetables under FSMA. 21 U.S.C. § 2201–52 (2011). USDA regulates the marketing, inspection, and certification of fresh fruits and vegetables under the Perishable Agricultural Commodities Act of 1930 and other legislation. 7 U.S.C. 499 (2012); 7 CFR § 51 (2013). *See also* 7 U.S.C. § 1621 (2012).
63. 21 U.S.C. § 331(b) (2012). *See also* 21 U.S.C. § 343 (2012).
64. 21 U.S.C. § 331(b) (2012).
65. 21 U.S.C. § 331(b) (2012). A label may be deemed misleading under the FD&CA not only if its language makes misleading representations, but also if the label fails to reveal important information to the consumer. 21 U.S.C. § 321(n) (2012). *See also* 21 U.S.C. § 341 (2012).
66. 21 U.S.C. § 607(e) (2012); 9 CFR § 317.8 (2013); 21 U.S.C. § 453(h) (2012); 9 CFR § 381.126(a) (2013); 7 U.S.C. § 499b(4) (2012). The Agricultural Marketing Act of 1946 gives authority to the Agricultural Marketing Service, another agency within USDA, to regulate labeling for eggs under the voluntary grading program for eggs. 21 U.S.C. § 1036(b) (2012); 7 CFR § 56.36 (2013).
67. 21 U.S.C. § 463(a) (2012); 21 U.S.C. § 607(c) (2012); 21 U.S.C. § 1043 (2012). Under the Perishable Agricultural Commodities Act of 1930, USDA may also promulgate regulations. 7 U.S.C. § 499(o) (2012).
68. 21 U.S.C. § 453(h) (2012); 21 U.S.C. § 607(e) (2012); 21 U.S.C. § 1036(b) (2012).
69. 21 U.S.C. § 457(b) (2012); 21 U.S.C. 607(c) (2012).
70. 21 U.S.C. § 1031 (2012).
71. 63 Fed. Reg. 27502, 27507 (May 19, 1998).
72. 15 U.S.C. § 451(1) (2012); Fed. Trade Comm’n, *About the Federal Trade Commission*, <http://www.ftc.gov/ftc/about.shtm> (last visited August 4, 2013).
73. 15 U.S.C. § 1454(c) (2012).
74. 15 U.S.C. § 1454(c) (2012); *Memorandum of Understanding Between The Federal Trade Commission and The Food and Drug Administration*, MOU 225–71–8003 (1971), available at <http://www.fda.gov/AboutFDA/PartnershipsCollaborations/MemorandaofUnderstandingMOUs/DomesticMOUs/ucm115791.htm>.
75. 21 U.S.C. § 331(b) (2012). *See also* 21 U.S.C. § 343 (2012). *See also* Government Accountability Office, *supra* note 19, at 49.
76. FDA Basics, Food and Drug Administration, <http://www.fda.gov/AboutFDA/Transparency/Basics/ucm210073.htm> (last updated Apr. 13, 2012). *See* appendix for full law.
77. FDA’s infant formula regulation requires that manufacturers set a “use by” date “on the basis of tests or other information” showing that the formula will remain of sufficiently high quality “under the conditions of handling, storage, preparation, and use prescribed by label directions.” 21 CFR § 107.20 (2012).
78. Toby Milgrom Lebin, *The Infant Formula Act of 1980: A Case Study of Congressional Delegation to the Food and Drug Administration*, 42 FOOD DRUG COSM. L.J. 101–104 (1987); House Subcomm. On Oversight and Investigations of the Comm. On Interstate and Foreign Commerce, 96th Cong., 2d Sess., *Infant Formula: Our Children Need Better Protection* 3 (Comm. Print 96–IFC 42).
79. 21 U.S.C. § 350a (1980); Infant Formula Act of 1980, Pub L. No. 96–359, 94. 1190 (codified at 21 U.S.C. §§ 350a, 301, 321 (aa), 331, 374(a) (1980)). *See also* Toby Milgrom Lebin, *The Infant Formula Act of 1980: A Case Study of Congressional Delegation to the Food and Drug Administration*, 42 FOOD DRUG COSM. L.J. 101–104 (1987); House Subcomm. On Oversight and Investigations of the Comm. On Interstate and Foreign Commerce, 96th Cong., 2d Sess., *Infant Formula: Our Children Need Better Protection* 3 (Comm. Print 96–IFC 42).
80. 21 U.S.C. § 350a (1980); Infant Formula Act of 1980, Pub L. No. 96–359, 94. 1190 (codified at 21 U.S.C. §§ 350a, 301, 321(aa), 331, 374(a) (1980)).
81. 21 CFR § 107.20(c) (2013).
82. 21 CFR § 107.20 (2013).
83. *See* U.S. Dep’t of Agric. Food Safety & Inspection Serv., *Requirements for Meat and Poultry Products*, *supra* note 59, at 4. USDA does explicitly require a “pack date” for poultry products in the form of a closed code or a calendar date. 9 CFR § 381.126 (2012). *See also* *Labeling Compliance Policy Guide on Poultry Food Product Dating*, U.S. Dep’t of Agric., Food Safety & Inspection Serv. 2 (2010), available at http://www.fsis.usda.gov/PDF/labeling_guide_on_poultry_food_dating.pdf.
84. *See* U.S. Dep’t of Agric., Agric. Mktg. Serv., Ams PY Instruction No. 910, *Shell Eggs Grading Handbook*, Section 5 (2012); Agric. Mktg. Serv., U.S. Dep’t of Agric. *Egg Carton Labeling* (Aug. 15, 2006), available at <http://www.ams.usda.gov/AMScv1.0/ams.fetchTemplateData.do?template=TemplateN&navID=PYEggCartonLabeling1Nav1-200&rightNav1=PYEggCartonLabeling1Nav1-200&topNav=&leftNav=CommodityAreas&page=PYEggCartonLabeling2&resultType=&acct=pgeinfo>. For all egg products certified by USDA, “all cartons, overwraps, and other types of consumer packages bearing the USDA grademark require legible lot numbering on the consumer package” or a “pack date.” Further, if manufacturers choose to use code dating using terms such as “use by,” “use before,” or “best before” on USDA shield eggs, the date utilized should not exceed 45 from the day the eggs were packed. However, eggs not packed in USDA facilities do not need to follow the same rules, instead, “eggs that are not packed under USDA’s grading program must be labeled and coded in accordance with egg laws in the state where they are packed and/or sold.” *Id.*
85. U.S. Dep’t of Agric. Food Safety & Inspection Serv., *Food Product Dating*, *supra* note 54.
86. *See id.*; 9 CFR § 317.8(b)(32)(i) (2013).
87. 9 CFR § 317.8(b)(32)(2) (2013).
88. Nat’l Inst. of Standards & Tech., U.S. Dep’t of Commerce, *Handbook 130: Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality* 1 (2013), available at <http://www.nist.gov/pml/wmd/pubs/upload/hb130-13-final.pdf>.
89. *About NCWM*, Nat’l Conference on Weights & Measures, <http://www.ncwm.net/about> (last visited July 3, 2013).
90. Nat’l Inst. of Standards & Tech., *supra* note 88, at 149.
91. *Id.* at 9.
92. *Id.* The model regulation recommends two options for implementation—states are advised to either require mandatory open dating or to allow voluntary open dating that must adhere to the strictures of the model regulation.
93. *Id.* at 153–55.
94. *Id.* at 154–55.
95. *See id.*
96. *Id.*
97. *Id.* at 9–13.
98. *Id.*
99. FDA Food Code, U.S. Dep’t of Health & Human Servs., Food & Drug Admin., <http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/default.htm> (last visited Jan.16, 2013).
100. *Id.*
101. *Id.*
102. *Id.* at §§ 3–202.17, 3–203.11.
103. *Id.* at §§ 3–501.17, 3–501.18.
104. *Id.* at §§ 3–502.12.
105. *Id.* at §§ 3–202.17, •(A)(2).
106. *Id.* at §§ 3–501.17, •(A).

107. *Id.*
108. *Id.* at § 3–202.17; Ark. Admin. Code 007.04.8–3–202.17; Cal. Health & Safety Code § 114039 (2011); 4000 Del. Admin. Code § 3–202.17 (2013); Ga. Comp. R. & Regs. 40–7–1–.10 (2013); 410 Ind. Admin. Code 7–24–156 (2013); N.J. Admin. Code § 8:24–3.2 (2013); N.D. Admin. Code 33–33–04–03.1 (2013); Okla. Admin. Code § 310:257–5–15 (2013); 7 Pa. Code § 46.246 (2013); 12–5 Vt. Code R. § 30.5–204 (2013); 2 VA. Admin. Code § 5–585–400 (2013); Wis. Admin. Code Agric. Trade & Consumer Prot. § 75, App. (2013); AGR FSF 3 Wyo. Code R. § 11 (2013).
109. 35A Am. Jur. 2d Food § 10 (2012). U.S. Const. art 6, cl. 2. “This Constitution, and the Laws of the United States . . . shall be the supreme Law of the Land; and the Judges in every state shall be bound thereby, any Thing in the Constitution or Laws of any state to the Contrary notwithstanding.”
110. 35A Am. Jur. 2d Food § 10 (2012).
111. Theodore P. Labuza & Lynn M. Szybist, *Current Practices and Regulations Regarding Open Dating of Food Products* 30 (The Retail Food Industry Ctr., Working Paper No. 01, 1999).
112. Ga. Comp. R. & Regs. 40–7–1–.02 (2013).
113. Ga. Comp. R. & Regs. 40–7–1–.02 (2013); Ga. Comp. R. & Regs. 40–7–1–.26 “Labeling”
114. See Inst. of Food Technologists, *supra* note 17., at 94.
115. The USDA Food Safety and Inspection Service reports that only about forty percent of states require date labeling for some food items, but our research found restrictions in more states. See U.S. Dep’t of Agric. Food Safety & Inspection Serv., Food Product Dating, *supra* note 54.
116. 105 Mass. Code Regs. § 520.119(F) (2013).
117. Massachusetts has adopted one of the more extreme approaches in this regard, requiring a “sell by” or “best if used by” date for the sale of all perishable and semi-perishable foods. 105 Mass. Code Regs. § 520.119(D) (2013).
118. Md. Code Regs. 10.15.06.10 (2013).
119. Minn. Stat. § 31.783 (2013).
120. Minn. R. 1520.1900 (2013).
121. Minn. R. 4626.0200 (2013).
122. Nat’l Inst. of Standards & Tech., *supra* note 88, at 9–13.
123. Mich. Comp. Laws Ann. § 289.8107 (2013).
124. 31–3–5 R.I. Code R. § 21–33–PBP 2.00 (2013).
125. N.H. Code Admin. R. Agr 1412.04 (2013), Ga. Comp. R. & Regs. 40–7–1.26 (2013).
126. Minn. Stat. § 31.786 (2013); Ohio Rev. Code Ann. § 3715.171 (2013).
127. Current as of August 2013. See appendices for qualifications of regulations assessed in this report.
128. Current as of August 2013. See appendices for qualifications of regulations assessed in this report. Note that the type of date after which sale is restricted varies.
129. Alabama is unique in that it is the only state that does not affirmatively require the presence of date labels on any foods but then regulates such date labels once they are applied to foods and in some cases forbids the sale of foods after those dates. See Ala. Code Ann. § 20–1–27 (2013); Ala. Admin. Code r. 420–3–22.03 (2013); Ala. Admin. Code r. 420–3–22.03 (2013).
130. Current as of August 2013. See appendices for qualifications of regulations assessed in this report.
131. Note that states define “perishable foods” differently, so this term may include some variety of the other food items listed here, such as eggs, meat, and dairy.
132. Potentially hazardous foods are generally defined as those foods that require time/temperature control for safety. However, different states include various food items within their definitions of potentially hazardous foods, so this term may include some variety of the other food items listed here, such as eggs, meat, and dairy.
133. Baltimore, Md. Code § 6–505.1 (2009).
134. Telephone interview with representative of N.Y. State Dep’t. of Agric. & Mktg. (Nov. 28, 2011).
135. Dep’t of Health & Mental Hygiene, Board of Health, *Notice of Adoption of a Resolution Repealing Articles 111 and 117 of the New York City Health Code 2* (2010), available at <http://www.nyc.gov/html/doh/downloads/pdf/notice/2010/notice-article-111-117-noa.pdf>.
136. *Id.* at 3.
137. *Id.*
138. Eastern Research Grp., Inc., *supra* note 55, at 1–12.
139. *Id.*
140. See Christine Blank, *Good News on Unsaleables?*, SUPERMARKET NEWS (July 19, 2004), <http://supermarketnews.com/archive/good-news-unsaleables>.
141. *Id.*
142. Food Mktg. Inst., *The Sustainability Opportunity for Retail and Wholesale Executives*, available at <http://www.fmi.org/industry-topics/sustainability/key-sustainability-tools-and-resources/getting-started-tools> (click on “The Sustainability Opportunities for Retail and Wholesale Executives”) (last visited July 22, 2013) (indicating that 92% of consumers agree that it is important for the U.S. food industry “to be more proactive about addressing environmental concerns.”)
143. Aristeidis Theotokis, *et al.*, *Effects of Expiration Date-Based Pricing on Brand Image Perceptions*, 88 J. OF RETAILING 72, 72 (2012) (highlighting findings of consumer behavior studies showing that expiration date-based pricing (EDPB) may “generate positive consumer evaluations when framed as a cause-related marketing activity to reduce waste”). See also Michael Tsiros & Carrie M. Heilman, *The Effect of Expiration Dates and Perceived Risk on Purchasing Behavior in Grocery Store Perishable Categories*, 69 J. OF MKTG. 114, 115–16 (2005) (marketing study modeling “the process by which consumers formulate perceptions of brand quality after [] exposure to EDPB practice”).
144. Eastern Research Grp., Inc., *supra* note 55, at 3–6.
145. Eastern Research Grp., Inc., *supra* note 55, at 3–1.
146. *Id.* at 3–4.
147. Eastern Research Grp., Inc., *supra* note 55, at 3–6.
148. *Id.* at 3–5.
149. Eastern Research Grp., Inc., *supra* note 55, at 1–6.
150. Telephone Interview with Doug Rauch, former retail executive (Dec. 3, 2012).
151. Eastern Research Grp., Inc., *supra* note 55, at 3–2.
152. Labuza & Szybist, *Current Practices and Regulations*, *supra* note 55, at 10.
153. Eastern Research Grp., Inc., *supra* note 55, at 3–2.
154. Eastern Research Grp., Inc., *supra* note 55, at 3–10.
155. Dan Charles, *Don’t Fear that Expired Food*, NPR (Dec. 26, 2012), <http://www.npr.org/blogs/thesalt/2012/12/26/167819082/dont-fear-that-expired-food> (last visited July 3, 2013).
156. Eastern Research Grp., Inc., *supra* note 55, at 3–1.
157. *Id.* at 3–9.
158. *Id.* at 3–10.
159. *Id.*
160. The FDA’s infant formula guidelines for testing with regard to nutrient content represent one important exception. See 21 CFR § 107.20 (2013).
161. Labuza & Szybist, *Current Practices and Regulations*, *supra* note 111, at 40.
162. Eastern Research Grp., Inc., *supra* note 55, at 3–13.
163. Mary Bender Brandt, *et al.*, Ctr. for Food Safety & Applied Nutrition, FDA, *Prevalence of Food Safety, Quality, and Other Consumer Statements on Labels of Processed, Packaged Foods*, 23 FOOD PROTECTION TRENDS 870, 876 (2003).
164. See Blank, *supra* note 140.
165. Bender, *supra* note 163.

166. Directive 2000/13/EC of the European Parliament and the Council on the approximation of the laws of the Member States, Art. 3 (“E.U. Food Labeling Directive”). The Directive is implemented in Great Britain by the Food Labelling Regulations 1996 (FLR). According to the FLR, “food ready for delivery to the ultimate consumer or to catering establishments must carry an ‘appropriate durability indication,’” in the form of either a “best before” date or a “use by” date. Great Britain Food Labelling Regulations 1996, 1996 No. 1499 (20)–(22).
167. *Id.* at 11.
168. Bus. Reference Panel, BETTER REGULATION OF ‘USE BY’ DATE LABELLED FOODS: A BUSINESS REVIEW 6 (2011). According to the FLR, it is an offense to sell food after the use-by date. This is unique to the United Kingdom, and is not required in the E.U. Food Labeling Directive.
169. See Dep’t for Env’t, Food & Rural Affairs, *Guidance on the Application of Date Labels to Food* (Sept. 2011).
170. *Id.* at 14. The decision tree explains to manufacturers that “‘best before’ dates relate to food quality, including taste, texture, aroma and appearance, whilst ‘use by’ dates relate to food safety.” Thus “best before” is appropriate for the vast majority of foods, and “use by” is the required form of date mark for those foods which are highly perishable from a microbiological point of view and which are in consequence likely after a relatively short period to present a risk of food poisoning.” *Id.* at 6–7.
171. *Id.* at 7.
172. Telephone Interview with Dr. Theodore P. Labuza, Professor of Food Science, Univ. of Minn. (Oct. 10, 2012).
173. Serri Graslie, *Willing To Play The Dating Game With Your Food? Try A Grocery Auction*, NPR (Aug. 23, 2012), <http://www.npr.org/blogs/thesalt/2012/08/23/159601015/willing-to-play-the-dating-game-with-your-food-try-a-grocery-auction>. 174. Office of Tech. Assessment, *supra* note 15, at 21; Labuza & Szybist, Current Practices and Regulations, *supra* note 15, at 20.
175. U.S. Dep’t of Agric. Food Safety & Inspection Serv., *Food Product Dating*, *supra* note 54.
176. See Eastern Research Grp., Inc., *supra* note 55, at 4–11.
177. Katherine M. Kosa, *et al.*, *Consumer Knowledge and Use of Open Dates: Results of a Web-Based Survey*, 70 J. OF FOOD PROTECTION 1213, 1218 (2007).
178. *Id.*
179. U.S. Dep’t of Agric. Food Safety & Inspection Serv., *Food Product Dating*, *supra* note 54.
180. Food Mktg. Inst., *U.S. Grocery Shopper Trends* 144 (2011). Another study found that sixteen percent of consumers typically throw out milk on its “sell by” date. Labuza & Szybist, *Open Dating of Foods*, *supra* note 23, at 92.
181. The report was sponsored by the U.S. Department of Agriculture, Food Safety and Inspection Service; U.S. Department of Health and Human Services, Food and Drug Administration, and Centers for Disease Control and Prevention; U.S. Department of Commerce, National Marine Fisheries Service; and the U.S. Department of Defense, Veterinary Service Activity.
182. Ransom, *supra* note 18, at 1763.
183. Eastern Research Grp., Inc., *supra* note 55, at 4–11 to –12.
184. *Id.* at 4–11 to –12; Kosa, *et al.*, *supra* note 177, at 1218.
185. Shirley J. Van Garde & Margy J. Woodburn, *Food Discard Practices of Householders*, 87 J. OF THE AM. DIETETIC ASS’N 322, 329 (1987).
186. Office of Tech. Assessment, *supra* note 15, at 6.
187. U.S. Dep’t of Agric., Food Safety and Inspection Serv., *Food Product Dating*, *supra* note 54.
188. Brandt, *et al.*, *supra* note 163, at 872.
189. Bus. Reference Panel, *supra* note 168, at 19.
190. Interview with Dr. Theodore P. Labuza *supra* note 172; telephone Interview with Dr. Elliot Ryser, Professor of Food Science & Human Nutrition, Mich. State Univ. (Nov. 1, 2012). Susceptible populations include pregnant women, older adults, and those with chronic illnesses such as AIDS, cancer, and diabetes. See *Who’s At Risk*, FoodSafety.gov, <http://www.foodsafety.gov/poisoning/risk> (last visited Sept. 5, 2013).
191. Bus. Reference Panel, *supra* note 168, at 19.
192. See Labuza & Szybist, *Current Practices and Regulations*, *supra* note 111, at 11–15.
193. Van Garde & Woodburn, *supra* note 185, at 329.
194. Labuza & Szybist, *Current Practices and Regulations*, *supra* note 111, at 19–20.
195. Office of Tech. Assessment, *supra* note 15, at 21.
196. Bus. Reference Panel, *supra* note 168, at 1.
197. Kosa, *et al.*, *supra* note 177, at 1218.
198. Ctr. for Food Safety & Applied Nutrition, Food & Drug Admin. & Food Safety & Inspection Serv., U.S. Dep’t of Agric., *Quantitative Assessment of Relative Risk to Public Health from Foodborne Listeria monocytogenes Among Selected Categories of Ready-to-Eat Foods* viii (2003) [hereinafter Quantitative Assessment].
199. *Id.* at viii.
200. Ransom, *supra* note 18., at 1762.
201. *Id.* at 1770.
202. *Id.* at 1761–66.
203. The National Advisory Committee on Microbiological Criteria for Foods defines “Safety-Based Date Label (SBDL)” thusly: “Labeling information regarding storage time to control the risk of illness from psychotropic pathogens. An SBDL may be a day/month/year or the number of days after purchase or opening and may include other statements such as ‘keep refrigerated’ or ‘store below 40 °F.’” Ransom, *supra* note 18, at 176–63.
204. Interview with Dr. Theodore P. Labuza, *supra* note 172. The National Advisory Committee on Microbiological Criteria for Foods (NACMCF) has defined Ready-to-Eat products as “food that is in edible form without additional preparation to achieve food safety (such as heating) but may receive additional preparation for palatability or aesthetic, epicurean, gastronomic, or culinary purposes.” Ransom, *supra* note 18, at 1763.
205. Ransom, *supra* note 18, at 1765. Cumulatively, these outbreaks accounted for 487 illnesses, 235 hospitalizations, and 111 fatalities. *Id.* Overall, there are approximately 1,600 cases of listeriosis every year in the U.S. *Listeria: Statistics*, Ctr. for Disease Control and Prevention, <http://www.cdc.gov/listeria/statistics.html> (last visited Apr. 13, 2013).
206. Ransom, *supra* note 18, at 1765 (2005) (noting that ready-to-eat foods were implicated in nine outbreaks and were suspected contributors in a number of the remaining cases; the only other suspected products were raw vegetables, shrimp, deli meats, and hot dogs).
207. See Amit Pal, *et al.*, *Safety-Based Shelf Life Model for Frankfurters Based on Time To Detect Listeria monocytogenes with Initial Inoculum Below Detection Limit*, 72 J. FOOD PROTECTION 1878, 1882–83 (2009) (discussing the benefits of using a Time-Temperature Integrator tag or a time-temperature data logger to account for temperature abuse).
208. See generally U.S. Food & Drug Admin., FDA Food Code, *supra* note 99.
209. See *id.* § 3.
210. See *id.* § 3–501.17 (requiring that potentially hazardous ready-to-eat foods be “clearly marked to indicate the date or day by which the food shall be consumed on the premises, sold, or discarded”).
211. See *Guidance on Labeling of Foods That Need Refrigeration by Consumers*, 62 FED. REG. 8248, 8251 (Feb. 24, 1997). See also *Quantitative Assessment*, *supra* note 198, at xv (noting that “reformulation of products to reduce their ability to support the growth of *Listeria monocytogenes* or encouraging consumers to keep refrigerator temperatures at or below 40° Fahrenheit” are important parallel interventions); Ransom, *supra* note 18, at 1772 (“[T]he impact of temperature on the risk of listeriosis [is] significantly greater than the impact of time.”).
212. Quantitative Assessment, *supra* note 198, at xii.
213. *Id.* at xiv.
214. *Id.*
215. *Id.* at viii.
216. Conn. Agencies Regs. § 19–13–B42(m)(1)(F) (2012).
217. *Listeriosis (Listeria) and Pregnancy*, Centers for Disease Control and Prevention, <http://www.cdc.gov/pregnancy/infections-listeria.html> (last visited Aug. 10, 2013).

218. The need for targeted, tailored interventions is reinforced by the complexities inherent in implementing any regulatory labeling scheme. See Ransom, *supra* note 18, at 1762, 1768.
219. A similarly tailored approach can be seen in the FDA's regulation of infant formula, which is a discrete category of products for which specialized labeling regulations have been successfully implemented at the Federal level. FDA mandates date labels on infant formulae to ensure product quality—not microbial safety. See 21 CFR § 107.20 (2013) (“A ‘Use by ____’ date, the blank to be filled in with the month and year selected by the manufacturer, packer, or distributor of the infant formula on the basis of tests or other information showing that the infant formula, until that date, under the conditions of handling, storage, preparation, and use prescribed by label directions, will: (1) when consumed, contain not less than the quantity of each nutrient, as set forth on its label; and (2) otherwise be of an acceptable quality (e.g., pass through an ordinary bottle nipple).”).
220. Buzby & Hyman, *supra* note 7, at 561.
221. Bloom, *supra* note 2, at xii.
222. *Id.*
223. Buzby & Hyman, *supra* note 7, at 566. (stating that per capita food loss is \$390/year, putting the total food loss per family of four at \$1,560/year). Another study, using 2009 USDA price data, calculated the average annual value of avoidable food loss to be \$1,600 for a family of four. Kumar Venkat, *The Climate Change and Economic Impacts of Food Waste in the United States*, 2 INT. J. FOOD SYSTEM DYNAMICS 431, 441 (2011).
224. Bloom, *supra* note 2, at 187.
225. Bloom, *supra* note 2, at 187; Gunders, *supra* note 1, at 12.
226. See Hall, *et al.*, *supra* note 9, at 2.
227. See Env'tl. Prot. Agency, *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2010*, at 6 (2010), available at http://www.epa.gov/osw/nonhaz/municipal/pubs/msw_2010_rev_factsheet.pdf; 228. *Wastes: Reducing Food Waste for Businesses*, Env'tl. Prot. Agency, <http://www.epa.gov/wastes/conserve/foodwaste/> (last visited Apr. 18, 2013).
229. See Hall, *et al.*, *supra* note 9, at 3.
230. WRAP, *supra* note 12, at 9.
231. Ransom, *supra* note 18, at 1763.
232. Van Garde & Woodburn, *supra* note 185, at 324–25.
233. Blank, *supra* note 140.
234. Raftery Resource Network, Inc., *Expired Product Project, Developed for the Joint Industry Unsaleables Steering Committee of Grocery Manufacturers of America & Food Marketing Institute* 2 (July 2003) available at <http://www.gmaonline.org/downloads/research-and-reports/expiredproducts.pdf>.
235. Interview with Doug Rauch, *supra* note 150; Interview with Jose Alvarez, former President and CEO of Stop & Shop/Giant-Landover, Professor, Harvard Bus. Sch., in Allston, MA. (Nov. 9, 2012).
236. Nat'l Inst. of Standards & Tech., *supra* note 88, at 149.
237. Telephone Interview with Mitzi Baum, Dir. of Food Safety, Feeding America (Mar. 28, 2013).
238. Examples include Lovin' Spoonful, <http://www.lovinspoonfulsinc.org> (last visited July 3, 2013) (food rescue organization based in Boston); Food Recovery Network, <http://www.foodrecoverynetwork.org> (last visited July 3, 2013) (organization with multiple chapters across college and university campuses in the United States); and Second Harvest, <http://secondharvest.ca> (last visited July 3, 2013) (a large-scale food recovery operation based in Toronto).
239. See Gunders, *supra* note 1, at 11; Bloom, *supra* note 2, at 165; see also Serri Graslie, *Buying Food Past Its Sell-By Date Tough To Swallow For Greeks*, NPR (Oct. 23, 2012), <http://www.npr.org/blogs/thesalt/2012/10/23/163469018/buying-foodpast-its-sell-by-date-tough-to-swallow-for-greeks?sc=emaf> (last visited July 3, 2013) (describing efforts by the Greek Government to encourage food stores to discount past-date foods).
240. For example, in eastern Pennsylvania, the Amish legally operate several stores that sell “expired” food at discounted prices. See Ryan Owens, *High Grocery Bills? Get Great Deals on Dated Food*, ABC News (Mar. 3, 2008), <http://abcnews.go.com/Business/story?id=4472941&page=1&TsNA9Zz6ZWJ> (last visited July 3, 2013).
241. See Graslie, *supra* note 173.
242. Telephone Interview with Mitzi Baum, Dir. of Food Safety, and Wayne Melichar, Manager of Food Safety, Feeding America (Nov. 20, 2012).
243. Telephone Interview with Jonathan Bloom, author of *American Wasteland* (Oct. 4, 2012).
244. Interview with Mitzi Baum, *supra* note 237.
245. See, e.g., Bill Emerson Good Samaritan Food Donation Act, 42 U.S.C. § 1791 (1996).
246. Interview with Mitzi Baum, *supra* note 237.
247. See Ransom, *supra* note 18, at 1763.
248. Directive 2000/13/EC, *supra* note 166.
249. Dep't for Env't, Food & Rural Affairs, *supra* note 169, at 7.
250. See *id.*; WRAP, *supra* note 12, at 10 (noting that “one study suggests that, although ‘display until’ dates are understood correctly by the majority (81%), they are used by some consumers to judge food quality (20%) and safety (6%)”).
251. Dep't for Env't, Food & Rural Affairs, *supra* note 169, at 7.
252. See, e.g., interview with Doug Rauch, *supra* note 150; Bloom, *supra* note 2, at 163–67 (discussing the solution proposed by Hilary Benn and Phil Lempert to obscure sell-by dates).
253. Food Mktg. Inst., *The Sustainability Opportunity for Retail and Wholesale Executives, Improving Supply Chain Practices for Open Dated Products* (2007), available at http://www.fmi.org/forms/store/ProductFormPublic/search?action=1&Product_productNumber=2202.
254. Notably, USDA regulations currently allow manufacturers to optionally include this kind of “qualifying” language on their date labels. See 9 CFR § 381.129 (2013); 9 CFR § 317.8 (2013).
255. See, e.g., 21 CFR § 101.93 (2013) (mandating disclaimer for certain dietary supplement claims).
256. U.S. Dep't of Agric. Food Safety & Inspection Serv., *Food Product Dating*, *supra* note 54.
257. WRAP, *Freezing refrigerated food—Labelling decision tree* (2011), available at <http://www.wrap.org.uk/sites/files/wrap/Freezing%20decision%20tree.pdf>.
258. FDA's infant formula regulation requires that manufacturers set a “use by” date “on the basis of tests or other information” showing that the formula will remain of sufficiently high quality “under the conditions of handling, storage, preparation, and use prescribed by label directions.” 21 CFR § 107.20(c) (2013).
259. See U.S. Dep't of Agric., *Recommendations of the National Advisory Committee on Microbiological Criteria for Refrigerated Foods* 19 (1990) (recommending that “KEEP FROZEN” and “MUST BE KEPT REFRIGERATED” warnings be affixed to food packages and that they be accompanied by a “corresponding logo”). See generally Ransom, *supra* note 18, at 1761.
260. 9 CFR § 317.2(1) (2013); 9 CFR § 381.125(b) (2013). See also U.S. Dep't of Agric., *Kitchen Companion: Your Safe Food Handbook* 10 (2008), available at http://www.fsis.usda.gov/PDF/Kitchen_Companion.pdf. See also U.S. Dep't of Health & Human Servs., *Food Safety, Keep Food Safe*, available at <http://www.foodsafety.gov/keep/index.html> (last visited, July 20, 2013).
261. *Id.* at 1883; interview with Dr. Theodore P. Labuza, *supra* note 172.
262. See Pal, *et al.*, *supra* note 207, at 1883.
263. Interview with Dr. Theodore P. Labuza, *supra* note 172.
264. Pal, *et al.*, *supra* note 207, at 1883.
265. See, e.g., Waste Watch: *Food Fresh Labels*, Insignia Technologies, <http://www.insigniatechnologies.com/portfolio-view/wastewatch-food-fresh-indicators/> (last visited July 15, 2013); The UWI Label, UWI Technologies, <http://www.uwitechnology.com/pages/label.html> (last visited July 15, 2013).
266. Labuza & Szybist, *Current Practices and Regulations*, *supra* note 111, at 27.
267. In the 1970s, FDA had even asserted that it had the ability to regulate date labels under its existing labeling jurisdiction, without the need for additional amendments to the FD&C Act. FDA has broad powers to regulate misbranded food, including misleading labels, under the FD&CA. 21 U.S.C. § 331(b) (2012). See also 21 U.S.C. § 343 (2012). See Gov't Accountability Office, *supra* note 19, at 49.

268. 21 U.S.C. § 321(n) (2012). See also 21 U.S.C. § 341 (2012).
269. See Nat'l Inst. of Standards & Tech., *supra* note 88, at 154–56.
270. Kosa, *et al.*, *supra* note 177, at 1218; Ransom, *supra* note 18, at 1763.
271. Van Garde & Woodburn, *supra* note 185, at 329.
272. See *Fact Sheet: Refrigeration and Food Safety*, U.S. Dep't of Agric., http://www.fsis.usda.gov/wps/portal/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling/refrigeration-and-food-safety/CT_Index (last visited August 2, 2013) (providing guidelines regarding the importance of refrigeration and types of bacteria in refrigerated foods).
273. Van Garde & Woodburn, *supra* note 185, at 329.
274. See, e.g., *FoodKeeper Guide*, FMI, available at <http://www.fmi.org/consumer/foodkeeper> (last visited July 3, 2013).
275. See, e.g., U.S. Dep't Agric., *Kitchen Companion: Your Safe Food Handbook* 14 (2008), available at http://www.fsis.usda.gov/PDF/Kitchen_Companion.pdf (outlining different ways to ensure food safety). See also U.S. Dep't of Health & Human Servs., *Food Safety, Keep Food Safe* (last visited, July 20, 2013), available at <http://www.foodsafety.gov/keep/index.html>.
276. According to Federal law, infant formula must include a “use by” date. However, states that further regulate this by banning or restricting past date sales of infant formula are identified in this appendix. 21 CFR § 107.20 (2013).
277. Nat'l Inst. of Standards & Tech., U.S. Dep't of Commerce, *Handbook 130: Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality* 13 (2013).
278. Infant formula is federally regulated and requires a “use by” date in all states. 21 CFR § 107.20 (2013).
279. Infant formula is federally regulated and requires a “use by” date in all states. 21 CFR § 107.20 (2013). Georgia's regulations contain additional language restricting sales after the “use by” date.

The CHAIRMAN. Well, thank you, and good recovery from my rudeness.

The chair reminds Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. And I appreciate Members' understanding. I recognize myself for 5 minutes.

Sitting here listening to you, I suddenly realized that I was among some early adopters of this issue, not wasting food, in the sense that as a young MP at Fort Hood, we would race across Fort Hood with sirens blaring and red lights flashing to get to the McDonald's at 2 o'clock in the morning to get all the unsold Big Macs, that we would then take them back to headquarters and pass them around to our colleagues. So early on, I was an early adopter. In addition to growing up in a family where nothing was wasted.

Ms. Aviv, would you talk to us a little about the struggles or challenges, differences between rural food banks and urban food banks in the sense of produce, how they get access to it? We have heard how some of the small retailers in rural America have a hard time getting produce. Can you talk to us about how food banks in urban and rural are approaching those challenges differently?

Ms. AVIV. The challenges facing rural food banks are different than those of urban food banks. Just transportation alone is probably one of the biggest challenges. Recently, I had the opportunity, since I am relatively new to Feeding America, to go around the country and have listening sessions, and in the sessions that brought together most of the rural food banks, the number one challenge that they saw, that they faced was transportation. In fact, they asked for us to find donations for replacement of their tires because they have to travel such far distances.

But it is not only on the side of the distribution of the food, it is also with regard to the people who are facing hunger, their ability to be able to get together and come to a central location to receive the food is also a challenge. I don't think it is a challenge that we have solved.

Also, because most of the people facing hunger, or more of them, are in cities and in concentrated areas, there may be an inclination to want to go to where most of the people are, but yet the needs in the rural communities are just as great. We have a balance issue when there are limited resources.

The CHAIRMAN. We did have one retailer talk about the idea of setting up centralized points within the rural communities where they could take the donated produce there.

Ms. Stasz, you said that we have some 40 different state rules or regulations with respect to labeling. Would you and your team be supportive of a Federal preemption of all of those various state rules and regulations?

Ms. STASZ. Yes, a national standard is really crucial. Emily did a really good job of pointing out the complexity that is existing now. As we think about if there is going to be regulation, then Federal preemption would be really critical to streamlining that process and reducing consumer confusion. And we thank Ms. Pingree for all of her work on this really important issue, and really starting the conversation.

The CHAIRMAN. Well, thank you. I do believe the statute of limitations has run on anything I might have just confessed too, with respect to my conduct at Fort Hood.

So with that, I will yield back. And I recognize the Ranking Member for 5 minutes.

Mr. PETERSON. Well, thank you, Mr. Chairman.

Do all of you agree that, to get to our goal here, we need a Federal preemption on state laws? Do any of you disagree with that? Silence.

The CHAIRMAN. It is going to be hard for the stenographers to write that down.

Ms. BROAD LEIB. I am happy to agree with that. As we have discussed, when we started looking at state laws on date labels, we looked at a handful in New England and they were all different, and the more we zoomed out and looked across the country, it is very clear that they are not based on some sort of standard safety information, so it makes sense to have one standard that everyone can follow.

Mr. PETERSON. Yes, so you would have to have a Federal preemption in order to accomplish that.

Ms. BROAD LEIB. Yes.

Mr. PETERSON. Right.

Ms. BROAD LEIB. I think so.

Mr. PETERSON. I am a little bit concerned about how this would work, because we have so many people involved in trying to use the labeling and marketing of food, and they have the consumers to the point where they don't know what the heck is going on. And it just concerns me, like this GMO issue, they are opposing preemption of that because some people think that it is a good thing for the states to have these different laws, which goes completely opposite of what we are talking about here. And then you have these folks out there doing these *Dietary Guidelines*, and trying to push all of that stuff, and we have a bill that has been introduced that puts the food police in charge of the Agriculture Committee that are pushing all kinds of ideology, whatever it might be, it is confusing the heck out of people. You have people labeling things natural, and using it to create specialty stores and so forth. And so I am just concerned that if we pass this bill that says you are going to have two dates; one is best by, and the other is expires on. I agree that we need to do this, and that it is a good thing to do. If we could accom-

plish it, it would be probably the best solution to addressing food waste and could change things.

But in the bill, it says expires on is the date for, not the quality but, the safety date. I don't think that consumers would understand what that means. You almost have to say do not consume after this date to get them to understand. We are putting so much stuff on this label that, all of these labels, that I am not sure it is going to break through, and make sense. So I don't know what you all think about that. Do you think I am off-base being concerned about all this?

Ms. BROAD LEIB. I sort of have two answers, and then I will leave time if others want to jump in. First, in terms of this question about the information being out there. If you go to any store right now, even in the states that don't regulate date labels, like New York, almost every product, particularly in the center of the store, has a date label on it. Everything from bottled water to vinegar to canned goods, whatever. I think what is great about this is not taking information away. Consumers are used to seeing those, and they want to see them, it is just trying to make it clear so that they don't see a million different ones.

You are right that no matter what those labels are, education is going to be needed. The problem right now is that because there are so many different labels, it is impossible to educate anyone about what they mean. I have tried. I would love to be able to say here is what you should glean from these.

And then last, the term expires on actually was in the national survey that we did last month that I mentioned. We checked six different label language, and expires on, 54 percent of people believe that was a safety label. That was higher than any other one. And they were also the lowest percentage of people that thought it was a quality indicator. So again, 54 percent isn't a lot, but it is a start, and with education it could be built upon that.

Mr. PETERSON. Yes. Go ahead.

Ms. STASZ. Just if I may really quickly. I do think you really hit the nail on the head in that we want to get this right the first time. Right? We don't want to further contribute to consumer confusion. We want to make sure that we are testing consumers to make sure they understand what we are trying to convey, coordinate with other labeling changes that are coming down the line, like the Nutrition Facts Panel, and really have industry flexibility to truncate the phrase, make sure it fits on small packaging, in order to make sure that we are harmonizing our standards and our language and conveying the right information to the consumer.

Mr. PETERSON. Well, I would say amen to that. And if you have read this bill, I am concerned. I agree with the goal, but I am concerned about the way this thing is structured, that you are going to get these different agencies involved in this, and by the time you are done, you are not going to recognize what you tried to accomplish.

I have seen that with the farm bill. When I passed the farm bill, by the time we got done with regulations, I didn't recognize what we had passed. We have to be careful about how we do this. I agree with what we are trying to accomplish, but if you get too many

agencies involved and allow too much whatever, you are going to end up potentially with a worse situation.

I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Kelly, 5 minutes.

Mr. KELLY. Thank you, Mr. Chairman and Ranking Member. And thank you, members of the panel.

First of all, I just want to say we have a lot of food pantries. I am from Mississippi and we have a lot of rural areas, and our food pantries do such a great job, and so any kind of reduction; second, I very rarely do this and she will probably kill me, but my wife volunteers for Meals On Wheels all the time, to take these meals to the elderly or people who can't travel, and those things. And she never gets recognized. We have been married for 25 years, and it seems like she is always behind the scenes, but my wife, Sheila, just does a great job. And we need more of that because there are a lot of people who really want to help people and get this food in the right hands.

As a child growing up, my mother used to go to the stale bread store in town and would buy up the donuts and things that we necessarily couldn't afford, or bread or other buns and those kind of things, and then she would freeze them and we would eat them all year. And as kids, we didn't know any different. It was still good food. The things that most people threw away we got to eat. So I thank you all for doing this.

And, Ms. Stasz, I think I got that right, to what extent is the industry engaged in coordinating efforts to promote uniform labeling?

Ms. STASZ. We are very engaged. This is a GMA and FMI board level initiative right now. We have 25 companies who are working on this to make sure that we really get this right the first time. Make sure that the information that we are conveying to consumers is accurate, and it is the right kind of information. But this is a really important issue for us and it is something that we are taking very seriously.

Mr. KELLY. As a follow up on that, when we create things here, we don't always get the right results because we don't have the baseline of knowledge that is necessary, we are not the professionals in every area, and we have such a broad range of things. So when you guys create the right things for yourselves, it prevents us from doing the wrong thing. With good hearts and good minds in trying to do the right thing, but we sure appreciate your input.

And how do your manufacturers in your organization now work with different date labeling laws in each state, and what limitations does it put on you because of these laws?

Ms. STASZ. It is certainly onerous. I mean our member companies are obviously complying with state law, but it does tend to create a lot of unintended consequences. Ms. Aviv really highlighted some of the confusion at the food bank level, and there are different foods that wind up getting thrown away unnecessarily.

There is certainly a call for, and a reason for, a national standard that the industry is working towards to reduce consumer confusion and prevent some of these unintended consequences of these laws.

Mr. KELLY. And, Ms. Aviv, to what extent have potential food donors raised liability concerns to you about a reason to withhold donations?

Ms. AVIV. Thank you. Congressman, I think that the issue that we see is lack of knowledge, where people new to this space who want to help and want to contribute argue that they can't because they won't be protected, and that it is almost a one-by-one-by-one education, unless we can create a systematic way to engage in this kind of work.

I was most recently at a conference organized by Ohio State University with all of its alumni, and so on, and the alumni sitting there talking about food insecurity, people sitting at the front table said that they were reluctant to get involved in this because there were liabilities. And these were people who were leaning into this area. So I don't think we should underestimate the degree to which there are people not engaging because they think they are not protected.

Mr. KELLY. And the final question for Mr. Oxford. So-called ugly fruit and vegetables in many cases have less value in the so-called marketplace. What other opportunities, you talked about some, but if you can just talk about what opportunities to the industry exploring to add value to these products.

Mr. OXFORD. Well, you mentioned the ugly fruit, and that has been a growing movement across the industry, one that we participated in, and a lot of retailers are helping to do that, and I mentioned the food service side is getting involved with it as well.

And one of the things you have to keep in mind on that is how things are positioned in the stores or at the food service level. And we believe there is great opportunity, and it is a huge waste. From our standpoint as a grower, we hope every fruit, stem, and leaf ends up on someone's plate. So just trying to do anything that we can to make those products available is what we are trying to do.

Mr. KELLY. And just a final anecdote. My dad, growing up, he would not eat white corn. He didn't like it. And so my mother put food coloring in it, and he said this is the best corn I have ever had. So sometimes our price pointing and other things make it better.

And I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields back.

Mr. David Scott, for 5 minutes.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman. This is a real, very serious problem here, and I appreciate you, Mr. Chairman, for pulling this together.

But there seems to be two fundamental areas here that we need to address. The first one is how do you change human behavior. That is the big issue here. The second big one is how do we address this issue of where the food waste starts on the farm. And I represent Georgia, and we are the leaders in the nation, perhaps the world, of growing blueberries. The problem is that so much of those blueberries are left wasted, rotting in the fields because we have failed to address the number one issue that we here in Congress can do to address food shortage, and that is to make sure our agriculture and our farmers, those who are producing our crops like blueberries, have the adequate supply of labor to be able to harvest them. So we have to do something about that first.

The second point on that is how do we coordinate a better relationship with that, if it is an oversupply, our farmers would gladly, at a much reduced cost, rather than see those crops rot in the field, get them to our food banks, like the Atlanta Food bank, which is one of the more premiere food banks with over 75 million pounds of food put out each year. That takes good management resource allocation.

Now, the other one is how do you get to the real people, because about 80 percent of the problem, if we solve it at the first end of helping stop the food shortage of food rotting in the fields, because they can't get the labor because we failed to address immigration from an economic agriculture supply labor standpoint. When we get to the changing of the human behavior, we have to get into a coordinated partnership with the media, with television, with radio, to be able to change human behavior, educate the public.

Now, we did this with smoking, so it can be done. We changed that human behavior. Many people say you are not going to be able to change people, but there was a coordinated effort with the leaders in the media industry to help with the kinds of public announcements, commercials that we could.

So I would like to get your response to that. First, let's address, am I right on this labor issue, Mr. Oxford?

Mr. OXFORD. Without a doubt, one of the biggest challenges for us as growers is not having adequate labor to harvest the crops at times. And when we leave crops in the field, sure, we can disk them in and use those as nutrients for the soil, but that really means the crop is not going to its highest and best use, which is feeding people.

Mr. DAVID SCOTT of Georgia. Yes. And how about your ability, am I right in assuming that you would be able to work with food banks in a much better resource allocation way to be able to get that food so it gets to the needy people, rather than rotting in the fields?

Mr. OXFORD. Absolutely. And we already do, as I mentioned in my testimony, supply hundreds of thousands of pounds to food banks annually ourselves, a product that doesn't meet specifications for the customers that we have and so forth. But, distribution is a big part of the equation that has to be figured out. There are no silver bullets here. It has to be a collaborative effort from all parts of the supply chain.

Mr. DAVID SCOTT of Georgia. Right. And now, the reason I mentioned the human behavior as I looked at this, clearly, 45 percent of food is wasted at the dinner table. And, Mr. Chairman, it might be helpful if we began to address a way in which we can coordinate some resources at the Federal level to help get public service announcements, to get and work with many of our partners in the media and engage them, much as the same way we did in changing the human behavior of smoking.

Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back.

Chris Gibson, 5 minutes.

Mr. GIBSON. Thanks, Mr. Chairman. I appreciate this hearing.

And I just want to come in behind Mr. Scott and concur with his statements. And I appreciate the Chairman, I know he has been

looking at this too. We have a number of Members on the Committee who have been concerned about ag labor, serious issues there. I have introduced a bill on this. I certainly don't claim that it corners the market on any ideas here. In fact, I think perhaps at this time, maybe what we should do as a Committee is just to have a hearing and look into it more. And I know the Committee is looking at that, and I appreciate that.

The second is, and I apologize, I was a few minutes late, but I did learn from the testimony from Ms. Broad Leib, I was interested to hear your comment, really your analysis of the Emerson Act, which is, from what I hear from you, very helpful in its intent, but perhaps needing some refinement, some amendments. And I thought you were very clear in what could be done. And I certainly would be supportive of an effort on that score. I just want to make that comment.

And then third, and this is really the question, I am curious for the panel, in your experiences, have you seen any best practices as far as information is concerned, a not-for-profit that is a clearing-house in a community where all restaurants and farmers can provide information about what they have so there is sort of in a community, there is a place where people can go and say, "Well, here is our inventory of all the perishables and the nonperishables, what is available." Has anybody seen anything like that?

Mr. FINK. Yes, in addition to what Feeding America is doing with their new platform, there are a few other local start-ups that are doing it. There is a small company based in Boston that is doing it for New England right now, that is creating a platform that has knowledge of tractor trailers that are being rejected at particular places, and are not going to find their intent, and then matching those with locations that could use that. So there are large organizations like Feeding America, and there is a lot of innovation that is happening at the local level as well.

Ms. AVIV. I would say that there are lots of efforts by Feeding America to try and get to the very issue that you have raised. Obviously, part of the challenge that we face is to make sure that this whole food labeling issue is not an unimportant issue, because we want to be sure that the food that gets picked up is then put in, if it is perishable, it is put in a refrigerated truck, is transported to a safe place, is housed in a safe place, before it is distributed, so that even as we are very encouraged by efforts of small groups to do the same thing, we want to be sure that we have a safe protected standard, because if we have stories that come out of somebody getting food poisoning or something as a result of this, that might be perceived by the public as the tip of the iceberg, when, in fact, it was an isolated incident. So we have to proceed here quite carefully.

Our effort with Starbucks that we are now going to do over the next 5 years and hundreds and hundreds of stores, will give us an opportunity to test this effort, because it is a small amount of food from each store, but they are incentivizing us through providing us with enough financial support to be able to purchase refrigerated trucks, so that the food banks can go by and pick that food up every single day. Multiply that by every store in the cities, in a variety of cities that have food left over, we have to make sure that

the infrastructure, or the people that pick it up, are picking it up and carrying it safely to the place where it then can be distributed to people who need food.

So it is a logistics and transportation and safety issue. It is not a lack of will issue.

Ms. GUNDERS. Just to add to that, there is quite a bit of innovation on that front. There is a startup in Chicago that has been training Uber and Lyft drivers in safe food handling practices, and then allowing restaurants to broadcast via text to a number of food pantries until someone accepts it, and then they bring it over very quickly so that it can get to people quickly.

And I would say that there is a long tail to the food wasting. There are big organizations and sometimes they have large quantities, but there is also a lot of small restaurants and such that have small quantities, but it is still worthwhile to donate. As Mr. Fink mentioned, really encouraging the innovation there can serve that sort of long tail.

Mr. GIBSON. I thank the panelists. And my time has expired. Thanks, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Mr. Walz, 5 minutes.

Mr. WALZ. Thank you, Mr. Chairman. And thank you, all of you. This is a critically important topic. Thank you to my colleague, Ms. Pingree, who I have had the honor and pleasure of sharing a meal at her home over this. She takes this to heart, and takes food as an important part of our cultural life.

Which kind of brings me back to what Mr. Scott and Mr. Kelly, and you are hearing it up here, are saying, I am, by training, a cultural geographer. This is an attitude issue as much as it is a logistics. I think these are important from labeling and all that, you are really getting at it, but it is interesting when you hear people up here talk, those of us of a certain generation, there is a pride in the thriftiness around food. I come from a family, until I was 12 years old, I thought head cheese was really cheese that my mom was making. And when we found out, we still ate it, but it was the idea of that sense of waste that was probably passed on from a previous generation where food insecurity was a real threat to them. And you see this around the world. And so I do think getting at that because there are some really interesting phenomena here. We take great pride out in southern Minnesota that we feed and clothe and fuel the world, and we have the most efficient producers of food the world has ever seen. And so because of that, and then working in conjunction with all of you, and, Ms. Stasz, your organization, you have become so incredibly efficient at delivering foods from all over the world to our local grocery store and to our homes that it has changed that cultural perception. Not that we have gotten lazy or whatever, we don't have to be as thoughtful about it. And I am amazed this week of looking at it when I go to shop for bananas, it is a fine art because I don't want them green because I want to eat them that night, but when I buy them yellow they are bad the next day, almost. And it is really that supply chain along there that we are trying to get at.

So I am curious, Mr. Scott was talking about putting things out in the public, public awareness and all that, but, Ms. Gunders, you

did this right, and if anything I have learned from this job, and as a school teacher too, Maslow's hierarchy of needs, appeal to the bottom of the hierarchy first, how it impacts their safety, their pocketbook, and things like that, and then they will eventually self-actualize, this is the right thing to do, it saves the planet, it saves those types of things.

Are we getting at the heart of the things that can make a difference at the bottom of that for people? Is the food labeling one of those? And then maybe throw it out to each of you for some of your points on this.

Mr. Fink, you talked about the data, which I think is incredible what you have been able to do to gather data on this, but it is very hard. And then maybe the last one to you, Ms. Aviv, how do USDA food inspectors interact with food banks and some of these on the large scale, because I have some fantastic ones in Minnesota that do some really incredible field-to-plate type of things?

So I know that is very broad and general, but the rest of the country is maybe catching up where all of you are at, and there are win-win-wins in this if we get this right. This is one of those issues that are incredibly positive, economically, health-wise, reducing government spending on things that all of us want to see done.

So I will leave my last 2 minutes for you to give us some points on that. I know it is very generalized, but we have to get at this.

Ms. GUNDERS. Yes. So as I mentioned, NRDC has partnered with the Ad Council on a campaign to try to shift the cultural paradigm around food waste. It is absolutely correct that if I walk down the sidewalk right now and I throw half a sandwich on the sidewalk, people will think I am crazy because I am littering, but if I throw it in the garbage can, people won't quite think much of it. And that is really the paradigm that we are trying to shift.

There was over 12 months of research that went into the campaign, and found things like people don't know they are wasting food. If you ask somebody if it is okay, nobody will say yes, but nobody realizes they themselves are doing it, and it is kind of flying under the radar. And the other thing is that it is a byproduct of sort of peoples' good intentions. You want to host a good dinner party, you want to feed your kids healthy, fresh food, and there is this byproduct of waste. So the campaign is trying to create kind of a wake up call that, yes, this is happening, and then also create a positive message that this is something people can get onboard to do better, and trying to shift that culture.

And so we are trying to get at some of the motivations behind it through really positive messaging and empowering people to make changes in their kitchens, because a lot of it is happening right there.

Mr. FINK. I think your question had to do a little bit about the data and what do we do with it. The intent of ReFED was actually to comb the data that was out there and to create this advisory council of the 30 experts from all the different industries and non-profits to understand the data, and to create a roadmap with essentially an action plan of what are all the areas where food is being wasted, and what are the solutions, and how can investment be made in one case to accomplish that. And that is where we came up with the 27 solutions. And there are investment opportunities

for private investors, for philanthropic organizations like foundations that can make grants to Feeding America, and other non-profits, and for corporations to make investments in their own infrastructure.

So the first step was collecting the data and creating the roadmap. Now, it is an opportunity for individual organizations to figure out how they can invest in the solutions.

Mr. GIBSON. Well, thank you. Maybe if we get a second round, I will wait until my time is up to come back around. I want to explore the economic potential that comes from this, and how you are already doing that.

The CHAIRMAN. The gentleman's time has expired.

Mr. Moolenaar, 5 minutes.

Mr. MOOLENAAR. Thank you, Mr. Chairman. And I also want to thank you all for being here.

Just this number of 40 percent is pretty staggering. And I wonder if most people wouldn't be aware of that, and if there was one takeaway that you wanted me to be able to communicate back in my district from each of you, as you have been thinking about this today, and throughout your work, what would that one takeaway be that you would want me to be able to communicate? Because that number is pretty staggering. And then when you look at the supply chain aspect of it, it becomes a much more complicated issue in terms of how to resolve. But is there one thing that you would want me to be able to communicate in my district? And maybe just go right down the panel.

Ms. GUNDERS. I think it is that this is very addressable, and it just takes easy steps to do it. It can be overwhelming when you think too much about it, but ultimately, if everyone cares about this and we all think food shouldn't be wasted, it won't be as much.

Mr. FINK. I would say that most people are not aware of how much food they waste personally, and that this problem can be solved starting so much by the consumer, and then the consumer can push that to restaurants and to retailers.

Mr. OXFORD. What I would say is that there is a misperception with a lot of consumers that if the fruit or the vegetable doesn't look just absolutely perfect in the store when they are picking it out, then it can't be good. And that is simply not true. And so support for and encouragement of some of the imperfect or the unusual-looking fruits and vegetables, that those are still very healthful products for consumers, would be terrific.

Ms. STASZ. And I would say the number one takeaway is the importance of measurement. Whether you are a business, whether you are a household, a city, a state, understanding, getting some numbers behind how much food you are wasting, you immediately find opportunities to improve. I for one need to stop buying grapefruits. Right? I just don't eat them. I can understand how much money I save as soon as I track that every week. And I think that measurement is far and away the best practice.

Ms. AVIV. I think there are no silver bullets here. Because we can't solve all of it, doesn't mean that we shouldn't try and solve some of it. And one step at a time will get us all the way there.

One of the great successes, in regard to this area, that we think is helpful was the passage of the tax legislation that made the do-

nation of food by small businesses and possibly, incentivizing them to give. So instead of that food going to waste, now, because of this charitable tax deduction, they can donate that. If we can educate our farmers and our small business people in the communities about this opportunity, we can save a heck of a lot, and that will be the first step of many that we can take.

Ms. BROAD LEIB. And I would say sort of two. First, on date labels, that for the most part, foods are really indicating quality to you, and that hopefully you can say you are working on trying to make them clearer. And I think the other on the liability. I mentioned the Emerson Act is incredible. I mean it is an enormous amount of protection, and the biggest challenge is that businesses don't know about that. And having Representatives from Congress say to them we have this legislation, you are really protected, this is a priority for us, could go miles in getting more people to feel comfortable donating food.

Mr. MOOLENAAR. Thank you very much. I appreciate it.

I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields back.

Ms. FUDGE, 5 minutes.

Ms. FUDGE. Thank you very much, Mr. Chairman. And thank you all so much for being here.

Mr. Chairman, let me just take a point of personal privilege. Today is Congressional Foster Youth Shadow Day, and today I have a foster student with me. Her name is Regine Jordan Wells, who was in the system for 5 years, and is now a student at Cleveland State University. So let's welcome—

The CHAIRMAN. Will she stand up and wave at us?

Ms. FUDGE. Regine.

The CHAIRMAN. There she is. Welcome. Glad you are with us.

Ms. FUDGE. Thank you. And now to my questions.

First, let me again thank you all. This has been most enlightening and very timely. Mr. Chairman, thank you for this hearing.

Certainly, I do represent the Cities of Cleveland and Akron, and 20 cities in between. I represent one of the poorest districts in America, so this is extremely important to me. As I work closely with my food banks on a fairly regular basis, and have my staff go on a regular basis to assist and volunteer.

So it is good, Ms. Aviv, to have you here, as I wanted to just remind you that earlier this year, Mr. Rodney Davis, my colleague from Illinois, and I did, in fact, request that the Appropriations Committee provide an additional \$100 million for the cost of storing, transporting, and distributing food. We know that refrigerated storage, we know that moving food is very, very important to making this whole thing work, because a lot of times if it is difficult for them to donate the food, they won't do it. And so I just want you to be aware that we did it, and thank you for your assistance, Feeding America's assistance in helping us do that. And I am happy that my colleagues have heard today how important it is to make sure that we have the transportation and the refrigeration that we need.

Ms. Broad Leib, we have been talking about the Emerson Act for some time this morning, but unlike other statutes, there has never been a Federal agency that really is over this particular Act. Would

it help if, in fact, there was some kind of guidance by a Federal agency, would that make persons who come under this Act feel better?

Ms. BROAD LEIB. I think so. One issue is really that there is a lack of awareness, which can also be addressed by having an agency that is really tasked with putting guidance out, telling people about it, sharing information. And then the other question, it is intended to be incredibly strong. If you read it, you can get that, but as an attorney myself, I can imagine if I were advocating on behalf of a company, looking at it and saying there are a few terms in here that are unclear. Apparently wholesome food, what does wholesome really mean? Is something that is past-date wholesome or not? There are other questions like that as well. The Act says, for example, that food has to follow Federal, state, and local quality and labeling standards, but some of the labeling standards are not related to safety. So even having an agency be able to say the allergens certainly are safety-related, that is important to be on food when it is donated, but if the net weight is wrong, someone who is going to get this food that is being donated, if it says it is 3 ounces and it is really 4 ounces, or *vice-versa*, that is not an issue.

So there are a bunch of places like that where having an agency be able to provide clarity and raise awareness would go a really long way.

Ms. FUDGE. I mean I have heard on two occasions today that there is some role for the Federal Government, and I am happy to hear that. I am happy to understand that my colleagues would agree that we don't want to have 40 or 50 different states with all different rules. And second that, with the Emerson Act, there should be some, at least, interpretive guidance as to how it goes. So I thank you for that, and hopefully we can take care of some of those things.

You talked about labor. I mean you kind of talk around it. Are you talking about immigration? What are you talking about?

Mr. OXFORD. Well, certainly, immigration is a part of the discourse. And I know that is a tough issue to tackle politically, but yes, that is a big part of it. It affects our ability to get the products grown and harvested and to the marketplace. And simplistically, we can probably either import labor or import our fruits and vegetables. And that is a tough pill to swallow sometimes, but yes, it is a big part of it.

Ms. FUDGE. Thank you very much.

I yield back, Mr. Chairman.

The CHAIRMAN. The gentlelady yields back.

Mr. Yoho, 5 minutes.

Mr. YOH0. Thank you, Mr. Chairman. I appreciate you all being here.

And today, as you brought out, Ms. Fudge, the Foster Youth Shadow Program, we have one with us from the great State of Florida, Ms. Samantha Rodgers. If you would raise your hand up. She is a young lady doing great things, and congratulations for being here and sharing with us.

Ms. Broad Leib, I wanted to hit on the Emerson Act. And you have talked extensively about it. And, to make it further to incentivize the tax things, and the clarification in laws, the work

that you have done with that, if there is any recommendations that you can give us on this Committee that we could help draft that, that would surely facilitate that, because the incentives and the things that Ms. Aviv brought up, the tax incentives for people to be able to go ahead and donate those things, because we see it so often. And I grew up like Mr. Walz. I was from Minnesota. I have five brothers; four of them were older, and when we sat down all six of us, it was like puppies at the dish, and if you are the last one there, you didn't get anything. So there wasn't any food waste when we were growing up. And then growing up, I was on food stamps for a period of time, and we were good misers with that. And then my mom, she taught us how you saved all your food, and at the end of the week you had stew, and it was always really good.

So saying that, being in the agricultural sector since I was about 15 years of age, we have seen a lot of waste. I have worked at produce markets, I have worked at loading docks, and then working with the farmers, we have seen the crops left in the fields. And so any recommendations you can give as far as things that we can do up here as far as legislation would be great along those lines.

And then I have had a specific question here for Mr. Fink. You mentioned consumer education as a crosscutting action to reducing waste. Have you found any specific best practices in educating the consumers? And what have you found is the most effective ways to educate the consumer, not just the consumer, I wanted to add to that awareness in the industry. I know industry does a good job, from the grocery stores, the restaurants, to the farmers, and to the families, and is there any cooperation with USDA on public service announcements? Yes, sir.

Mr. FINK. Thank you. The first question on the consumer side, we are getting a great start with the Ad Council and NRDC, and a few of the Congressmen mentioned ad campaigns over the years that have changed behavior, and I believe that this will do that. It is a start. It needs to be backed-up by companies providing awareness at supermarkets and at restaurants. There are chefs who are circling the Hill today who are interested in food waste, and chefs actually can play a role in changing peoples' behavior. So it starts with the Ad Council, but then companies can play a role, and the government can play a role.

I would also say on the industry side, we have personal experience, we have a farm, and we collect leftover produce from the local market. Every day we go and there is a new person, and they are not doing it the same way. So employee training is huge. It was one of the things that came out of the ReFED was not just the consumer training, but employee training.

Mr. YOHO. Okay, thank you.

Ms. Stasz, you brought up the grapefruit, you buy some, and I have done that myself, we buy things that sometimes we shouldn't. And I mean that is just up to us and it is a cost-benefit analysis there that we have to make. Mr. Oxford, you brought this up too, the bruised tomato, nobody wants to buy that, but if you are in the restaurant business that is different, you can utilize that. And it is kind of like buying a new car, I don't want the one with the dent in it. And so, again, if the retail market or the restaurants move

to, like on Wednesdays, it is Brunswick stew, because that is the leftovers, and those aren't the things that are the shiniest.

Have you guys seen a difference in the handling of food waste in the rural *versus* the urban areas? In the grocery stores, restaurants.

Ms. STASZ. Yes, I will say there are some marked differences, but overall the general bottom-line there is a real struggle with infrastructure. So depending upon what kind of business you are operating and where you are, urban or rural, your infrastructure options are going to be really different. Right? So if you are a restaurant and you have small amounts of pickup, you are going to have to get someone to come pick up that material really, really frequently if you are in a city, and then it has to go a really long way away to go to a composting facility or an anaerobic digestion facility, and you could lose your environmental benefit by putting it on that diesel truck.

So, for all businesses, increasing infrastructure options to make sure we are meeting the 50 percent reduction goal is going to be really critical.

Mr. YOHO. Okay. Thank you. I yield back.

The CHAIRMAN. The gentleman's time has expired.

Mr. McGovern, 5 minutes.

Mr. MCGOVERN. Well, thank you all for being here. This has been excellent testimony, and it is all common sense, and it is all doable. It doesn't seem like it is rocket science to be able to implement a sensible food waste policy in this country. If I have a suggestion, we should just put you all in a room where you write the policy and tell us to fund it, and then we are done, because you represent the vast array of the players that need to be at the table.

A few weeks ago, I was invited by the Amherst Cinema in Amherst, Massachusetts, to react to a film they were showing called *Just Eat It*. It was about a couple that decided to live for 6 months on food waste. At the beginning of the film they thought they couldn't do it, they wouldn't be able to find good food waste to be able to live on. By the end of the film they gained 20 pounds because it was so plentiful. And they were able to eat relatively healthy, but they ended up eating a lot because they uncovered so much discarded food. They went to dumpsters in supermarkets and uncovered huge amounts of discarded food. They went into the supermarkets to try to buy food, like bananas that were being taken off the shelf, and they were told by the people at the supermarket they couldn't sell it to them. And so when they discarded them, they went into the dumpster and got them. And they had so much food left over, they had a banquet at the end for all their friends.

The bottom line is, we waste an enormous amount of good, nutritious, healthy food that not only could feed hungry people, but, quite frankly, that could be utilized in our schools and in so many other places, and we need to fix this problem.

And there is an environmental aspect to this too. Moving away from landfills, going into digesters and composting and feeding animals *versus* the way we are doing it with landfills.

But, I come at this issue primarily from the hunger aspect. We have close to 50 million people in this country who are hungry. We should all be ashamed of that. And while what we are talking

about here today is not a substitute for SNAP or WIC or other food and nutrition programs, clearly, getting good nutritious food to people who are struggling is really important.

And so then we get to the infrastructure issues. I was on a panel with a farmer who, out of the goodness of his heart, brings his excess produce to the Food Bank of Western Massachusetts, but he didn't get any incentives. It is hard and he is a small farmer. I think a lot of people are faced with this. They don't have the labor force, or they don't have the refrigerated trucks to do the transporting of the food. And then even at food banks, there is a limited amount of refrigeration. You can talk about trying to get it to smaller stores or whatever, but they have a limited amount of refrigeration.

In TEFAP we authorized \$100 million for transportation and storage. We never funded at that. It was $\frac{1}{2}$ of that. So at some point we have to figure out a way to fund this.

And, Ms. Aviv and Mr. Fink, maybe we could talk a little bit about the infrastructure challenges, especially when it comes to feeding the hungry in this country, and how do we piece together the funding? How much does it cost, how do we do this?

Ms. AVIV. Gosh, I would have to get back to you on how much does it cost all together. We were hopeful that it would be funded at \$100 million. I couldn't tell you whether \$100 million would solve the problem, but it would sure solve more of a problem that \$59 million, and simply because the need is so great. And with 50 million people, or near 50 million people facing hunger in the United States, we have a big problem. And all of the food that we provide, which is well over 3.5 billion meals, is just a small part of what we are able to provide.

The infrastructure is on two levels. It is what I mentioned before, the one side is the refrigeration and the transportation and being able to harvest it and to keep the food safe. The other side of it are the people who need to access this. In rural communities, it is much more difficult, but within the cities it is a problem as well.

Mr. MCGOVERN. Right.

Ms. AVIV. We also have big challenges, when we get donations, there may be a whole lot of one item, and it may be nutritious, but not everybody can live on carrots alone. So we need diversity mixing centers and a variety of things that make it possible for people to have access to all of this.

Mr. MCGOVERN. Right.

Ms. AVIV. I think that being able to harness more of the food that is going to waste would go a long way to solving the problem, but it wouldn't solve the whole problem.

Mr. MCGOVERN. Mr. Fink?

Mr. FINK. Yes, I think that the good news is there really isn't that much capital needed on the infrastructure side in the grand scheme for the recovery standpoint, and it is needed, and we have all talked about a need for information technology and infrastructure, like refrigerator trucks and refrigerators at food banks, and places like that. In the grand scheme, that isn't a huge amount of capital. And you just even think, when we talk about Uber for food waste, and that is really, when you look about it, it is sort of infrastructure light in that perspective.

The other point you mentioned is the environmental aspect and there is a large need for capital for composting and anaerobic digestion.

Mr. MCGOVERN. Yes. Yes.

Mr. FINK. And that requires a significant amount of capital. I guess I will say that the private-sector is very interested in participating in that capital structure. Foundations and impact investors are very interested. So there is the opportunity for public-private partnerships. There needs to be some signaling from you all of what needs to be done, but there are very willing investors on the other side.

Mr. MCGOVERN. Thank you. Thank you.

The CHAIRMAN. Thank you. The gentleman's time has expired.

I would tell the group that we are working on getting a screening for our members and staff of *Just Eat It* and we will keep everybody posted on that so that all of us can have a chance to take advantage of watching that experience and seeing what we can learn from it.

Mr. MCGOVERN. Great.

The CHAIRMAN. Mr. Crawford, 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman. And I thank the panel for being here today.

I want to switch gears a little bit. We had an awful lot of pushback from schools, superintendents, teachers, parents, coaches, when the National School Lunch Program rules changed back, I think it was 2012. It was starting to being implemented that school year. And the complaint we got from school districts was just huge amounts of waste, where children were just not used to the menu items and so they would essentially turn up their nose at what they had been offered. The standards aside, the waste was one of the biggest issues. Superintendents are challenged by trying to take their food budget and cash flow with general funds. Anybody given any consideration to how you analyze food waste in schools, and what we might do to help alleviate that problem? Anybody want to comment on that?

Ms. BROAD LEIB. I will say one thing briefly. I think there is really great opportunity in schools, both in the cafeteria and in the classroom. And a couple of people have alluded to other places where we have made a lot of progress and social change, and a lot of that is also things like smoking, recycling, where we actually talked about them in schools. So there is a really good opportunity to kind of point this out to kids.

And then in terms of the cafeterias and the school lunchrooms, there is still some confusion, like so many things we talked about around liability protection, so there is opportunity within even the Emerson Act to really clearly, with guidance, say to schools here is how this also applies to you.

USDA is doing good work on this. They have put out some infographics and information about opportunities to have sharing tables and donate food, but more can be done definitely.

Ms. GUNDERS. I would add that the flipside of that, the more we can do to kind of get kids to eat their fruits and veggies, the less waste there will be. And so the solutions are the same. And there has been a lot of documentation of efforts like the farm-to-table

work and marketing produce to kids, and some of those things that recipes that make the food taste good, so it is not just sort of veggies out of the can that look drab, or things like that. That can really help to both address waste as well as health and fruit and vegetable consumption. And also the ideas around share tables in schools is very opportune because you have these kids who are taking a full carton of milk because they have to take it, and throwing it straight in the garbage can.

Mr. CRAWFORD. Yes.

Ms. GUNDERS. And that is just a shame and a huge waste. And there is real opportunity for guidance along with the funds that are delivered through the school program to really direct schools to allow for sharing of that food.

Mr. CRAWFORD. Mr. Oxford?

Mr. OXFORD. There is a new program in Texas called Brighter Bites, and it is a unique partnership between food banks, schools, and growers and packers, to provide 50 servings of fresh fruit and vegetables to students in at-risk schools for free. And this program introduces new products to children at a very early age, while providing educational materials to their parents on menu ideas for using them, and so forth. Ninety-eight percent of the parents reported that their children ate more fruits and vegetables while participating in the program, and 74 percent were able to maintain that increased consumption after the program ended.

So as Ms. Gunders said, trying to increase the consumption of fruits and vegetables would be a big help.

Mr. CRAWFORD. Yes, ma'am.

Ms. AVIV. Maybe our experience in other areas might be helpful here. We have a program that focuses on foods to encourage, and our experience is that, even though we might think that there are a whole range of foods, grains, and produce, and proteins that are healthy and good for folks to eat, it doesn't mean necessarily that they will lean into that if their life experience was different. And we have learned from the work that our food banks and pantries have been doing is that the way in which it is presented, the way in which it is talked about, the way in which it is approached makes a big difference. So simply putting it on the plate, if kids have never seen it before and adults for that matter, won't get us to where we want to go, but an education effort and encouragement, presentation makes a big difference. It is also true for people who walk into supermarkets, when it is beautifully presented they lean into it and want to do it. We need to apply it also in this area.

Mr. CRAWFORD. Indeed. Just as an aside in the time I have left, we actually had a hearing, this was back in my district, and collected a lot of comments to address the School Nutrition Program, and one of the most productive comments came from one of the moms on the panel who suggested that these programs be implemented on a gradual scale, that is, K-2, as opposed to K-12, and graduate that into implementation over time so that children grow into, as you suggest, making healthier food choices. Do you agree with that?

Ms. AVIV. I am not an expert on whether that is the right age group, but certainly the notion of encouraging people and not forcing them, and making it a delightful thing to do rather than a re-

quired thing to do, is likely to succeed. The particular age I will leave to other experts.

Mr. CRAWFORD. Thank you. I yield back.

The CHAIRMAN. The gentleman's time has expired.

The gentlelady from North Carolina, Ms. Adams.

Ms. ADAMS. Thank you, Mr. Chairman. And thank you all for being here. It has been really great testimony.

But let me just take a moment to recognize my foster student from Greensboro, my home, Jamie Warton. If Jamie is here, if she will stand up.

The CHAIRMAN. Jamie, thank you for being here.

Ms. ADAMS. Thank you.

Next week will be the 1 year anniversary of the Adams Hunger Initiative that I launched in the Twelfth District in North Carolina to raise awareness of the high level of hunger and food insecurity in the communities that I represent. North Carolina ranks ninth in the nation, and my district, first in the state in terms of food insecurity. So we have a serious problem and I have been concerned about that.

But hunger is a consequence of not having a good-paying job that earns enough food to put on the table and to raise a family. And as some of you have mentioned today, developing food recovery as a business model will help local farmers stay in business, create jobs to help with the additional transportation and distribution of donated food to those who need it.

My first question is to the North Carolinian on the panel, Mr. Oxford. Mr. Oxford, your testimony lays out several ways that your company and other members of the Produce Marketing Association are finding innovative ways to reduce food waste and to maximize the use of leftover produce within our nation's food system. So what support can both the public- and private-sector provide to farmers to educate them on opportunities and incentives to move more food products that are not destined for market to food banks?

Mr. OXFORD. Thank you, Representative Adams, and we appreciate your support here in Washington, D.C.

We believe there is opportunity for greater education across the board. Our experience with L&M has been very positive in working with the Florida Association of Food Banks and the Feeding America program, and others. And ensuring that producers understand the options is helpful, but equally important in reducing food waste is educating consumers. We have already talked a little bit about some of the things, we have talked about the need to change behavior that one of your colleagues mentioned, and I think that is very critical if we want to make a real difference and move the needle here.

Changing behavior in our sense is, speaking on behalf of the Produce Marketing Association, beginning that dialogue and trying to change behaviors starts at a young age. That is where we learn our habits and our values, and so forth. One of the things that the Produce Marketing Association has been involved with, including with the Partnership for a Healthier America and the White House as well, has been a program called Eat Brighter, and I should mention Sesame Workshop, which has provided their assets, their characters, for free to put on the packaging for fresh produce.

So it is having a collaborative dialogue and getting more people involved is critical.

Ms. ADAMS. Thank you.

Ms. AVIV, several universities in North Carolina operate campus kitchens. These student-run organizations use university facilities to turn donated food into meals for those who need it. What Federal laws protect campus kitchens and food donors from liability? What recommendations would you make to encourage more farmers and food processors to donate unwanted food products to food pantries and feeding organizations?

Ms. AVIV. Thanks for your question, and also for all of the work that you do in this area.

As you know, the Federal Bill Emerson Good Samaritan Liability Protection Act, which we have talked about some today, quite a lot, makes it possible to provide protection for people donating fit and wholesome foods to a nonprofit organization, and it provides critical assurance of liability protection to donors. And while there may be some ways in which it can be strengthened, the big challenge that we face is that too many people don't know about it, including on campuses. And the degree to which we systematically educate people about this is the degree to which I think that we will be able to increase donations in a meaningful kind of a way.

Ms. ADAMS. Okay. Would Feeding America support being able to use funds from the Emergency Food Assistance Program to directly purchase leftover produce from farmers?

Ms. AVIV. That is a very complicated question because our experience is that, in fact, the TEFAP purchases right now, with TEFAP funds, we already do that, that is what we believe, and that we do it at scale, and that at this point in time, for us to change that, we are not sure that that would be the right way to go. But that said, there is an opportunity for us to take a look at how to do it with smaller donations, because we do this at scale, and we would be very happy to work with you and others to look into that.

Ms. ADAMS. Well, thank you. I would love to do that.

Mr. Chairman, I yield back. My time is up.

The CHAIRMAN. The gentlelady's time has expired.

Ms. Lujan Grisham, 5 minutes.

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman. And thanks again for such a great panel, and highlighting that, we need to do more so that individuals and families are not so food-insecure in this country. And I make this statement at every hearing because until it is resolved, it hurts me every day to remind all of my colleagues and everyone who comes before this Committee that New Mexico is still one of the hungriest states in the country. And every single day I know there are children in my district and in the state who are some of the hungriest children in the entire country. And so the work that we do that leverages, that makes sure that we are encouraging, as you do, incredible private work, as well as our responsibility to change a variety of systems so that people really have the supports that they need to be food-secure, and to have all the other necessary basic issues addressed in their lives so that they can be successful.

And I know that this question has been asked, we are limited in what we can really do and accomplish because for every donation, there is an issue about getting it picked up and storing it, and far too much money actually is needed to do that. And, in fact, I have a bill that says, look, let's put \$100 million in so that we are not asking food banks to decide between having food available for their families or paying for the *administrative*, I am going to call it administrative, or the other structural issues, which is storing and transporting this food. So I know that that has been asked, what else can we do, but maybe the thing to do is, are there any private groups who are looking at. I hope I convince my colleagues to support my request to put more money in, to not be borrowing or leveraging in this way, to be very clear that we need to pay for transporting and picking up and storing foods. I actually have a situation in my district where we had to say no to corn because we let it spoil, because there was no way to go get it from the farmer who was donating it. There was no way for us to deal with it. Are there businesses or groups who are now looking at ways to maybe invest in the transportation and the storing, and the folks in the Feeding America environment that I can reach out to until we get this problem resolved, in my state in particular, in the Southwest region?

Ms. GUNDERS. Well, I would say there are a number of burgeoning businesses that are kind of addressing that problem through a private-sector lens. So, for instance, there is a company called Imperfect Produce that just started in California, and in just a few months they have over 3,500 people subscribing to their produce box, that is all kind of segments of produce. They offer it to people who qualify for SNAP at a reduced cost. So it is already reduced because it is imperfect, and then further reduced, and it is delivered to their door so you don't have the access issues. They don't have to go to a grocery store that may not be near them, *et cetera*. And they are getting basically \$20 worth of produce for \$5, also delivered to their door. So there are some private-sector solutions like that that are coming as well.

Ms. LUJAN GRISHAM. And I love that. Do you think that private-sector solution, do you—and I will ask them directly, so thanks for that heads-up. But, the challenges, and not that they couldn't figure it out in my state, it sounds like I am diminishing, but when you are not urban, it is much harder to make those deliveries. And in a state where we have the worst economy in the country, the folks able to really do that and successfully manage that business model, it has been really tricky. Do you see ways for really challenging states, rural, food deserts, not urban populations. If you are going to deliver a basket, you are going to drive 100 miles. Do you see ways and strategies that are being developed with really challenging environments like mine?

Mr. FINK. Yes. You know, and I would say—

Ms. LUJAN GRISHAM. And I love that idea. Thank you to the panelists.

Mr. FINK. Yes.

Earlier we talked about modifying the standards for procurement, and especially in your state, and states nearby, there is so much that is grown and so much that is coming in from Mexico

that is getting rejected because it doesn't meet the absolute perfect standard. And there is a real opportunity for less perfect fruits and vegetables being processed that they don't have to be shipped and refrigerated, they could be processed and then be shipped in a different form.

And so, to me, there is a huge opportunity to take a look at all of the fruits and vegetables that either are left on the farm or are left somewhere in the supply chain, and do some value-added processing and then be able to turn them around into rural communities.

Ms. LUJAN GRISHAM. All right, I appreciate that. And I am already out of time, but I appreciate these ideas and the Chairman's continued patience with me. These are really important to feeding families in my district, Mr. Chairman. Thank you.

The CHAIRMAN. The gentlelady yields back.

I now turn to David Scott for closing comments on behalf of the Ranking Member.

Mr. DAVID SCOTT of Georgia. Yes. Well, thank you, Mr. Chairman. As I said, this is a very, very good hearing, and we accomplished a lot in this hearing. I hope we can take that away. I am particularly concerned, Mr. Chairman, I hope we have registered the point that we really have to get our farmers, get our agribusiness community to get before this Congress and share what is happening, and I really think because of our failure to deal with the immigration issue, from a labor economics issue, as it impacts food waste, which we see here, because they can't get the labor in the fields to get the food in the first place. And that is something we can do something about.

And also, Mr. Chairman, as I mentioned, we need to coordinate a whole lot better with our food banks, and have this food wasting there when it could be beneficial to our food banks.

So the pieces of this are right out there. We just have to reach out and grab it.

And finally, changing that human behavior. And, Mr. Chairman, you mentioned to me a very good thing there when you whispered in my ear something that you all had a saying in the Army. If we took that to some television people and radio people, we could turn that into what, you could grab hold and educate people. Would you share that with us?

The CHAIRMAN. Well, you are going through the mess line, and the mess sergeant would say take what you want but eat what you take.

Mr. DAVID SCOTT of Georgia. Take what you want but eat what you take. That could be a great commercial. That could be a great deal. And who better to get on television to say that than you. We say that across the country.

But seriously, Mr. Chairman, we have to change that human behavior. And, hopefully, we have touched things on that.

I thank the panel. I appreciate your coming.

The CHAIRMAN. I too want to thank our panel. And I thank the gentleman for his comments.

I want to thank our foster kids in the room. Thank you all for being here today. I hope this has been instructive and not just bored you to death. But we are talking about good stuff, and one

of the more rare bipartisan exchanges we have had today, because I don't think we could find too many people who are in favor of food waste. It is a rare individual who would argue that case.

I would also like to get into the record the fact that several of you mentioned the tax deduction and how important that was. You gave credit in the much-maligned omnibus bill that many of us on our side of the aisle just got beat to death because we were supportive of it, but it was actually in the tax bill, both of those were negotiated together, the same thing. So I appreciate you, those of us who were criticized for passing the omnibus bill. There were some nuggets of good things in there.

I am also encouraged that we are trainable. Look how quickly we adapted to sneezing into our elbows. As soon as Elmo started doing it on *Sesame Street*, that blew up and we all now do that as a matter of course.

We faced water restrictions in west Texas because of the drought. We asked people to turn their faucets off while they brushed their teeth. That became a habit and water use has dropped. It didn't change anybody's lives, but it helped a little bit at a time, every single day we went on.

I want to re-announce that at 1:30 in this space we will have the Food Waste Fair. While we have booths manned by a lot of folks coming around to show the good work that has been going on, and to begin to highlight that. I do think their role for public service announcements and other things, they help people become more cognizant of it and just sensitive to the idea that we don't throw things away.

One of those other sayings from my early youth that I am haunted by though is my mother would say, "You need to be a member of the clean plate club." Well, that had mixed messages, because today, I eat too much and I am overweight, but as a child, my mother wasn't interested in us wasting food. So all these kind of things that we can be better at, and I am encouraged by that.

I thank all six of you for coming here today, sharing. Ms. Gunders, you get the prize for coming the furthest from San Francisco, but we do appreciate all the work that you do. It is a collaborative work, and there are only winners in this deal. And this is something we should be able to get our arms around as we move forward.

Again, I thank our witnesses for being here today.

Under the rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any questions posed by a Member.

This hearing of the Committee on Agriculture is adjourned. Thank you.

[Whereupon, at 11:57 a.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY ROBERT BUDWAY, PRESIDENT, CAN MANUFACTURERS
INSTITUTE

May 25, 2016

House Committee on Agriculture,
Washington, D.C.

RE: **Written Testimony of the Can Manufacturers Institute for the House
Agriculture Committee Hearing On Food Waste from Field to Table,
May 25, 2016.**

The Can Manufacturers Institute (CMI) appreciates this opportunity to provide comments to the House Agriculture Committee pertaining to the public hearing: *Food Waste from Field to Table*.

CMI is the national trade association of the metal can manufacturing industry and its suppliers in the United States. The can industry accounts for the annual domestic production of approximately 124 billion food, beverage and other metal cans; which employs more than 20,000 people with plants in 33 states and Puerto Rico; and generates about \$13.3 billion in direct economic activity. Our members are committed to providing safe, nutritious and refreshing canned food and beverages to consumers.

Cans help waste less food, save families and individuals time and money, and reduce their impact on the environment. In fact, Americans throw away approximately 15 to 20 percent of the fresh fruits and vegetables they purchase every year. And the amount of food waste rises to 40 percent for **All** foods. Cans are a part of the solution.

Fresh fruits and vegetables are picked and canned within hours, providing safe, nutritious, quality foods for families and individuals to use all year long. This process not only prevents spoilage, but also eliminates food waste as any product that isn't canned is kept on the farm to feed the livestock and/or as fertilizer for crops. Canned food portion sizes are also just right for both individuals and families, and most recipes are designed around these sizes. The products packed in cans never require refrigeration, saving significant energy for producers, shippers, retailers and consumers.

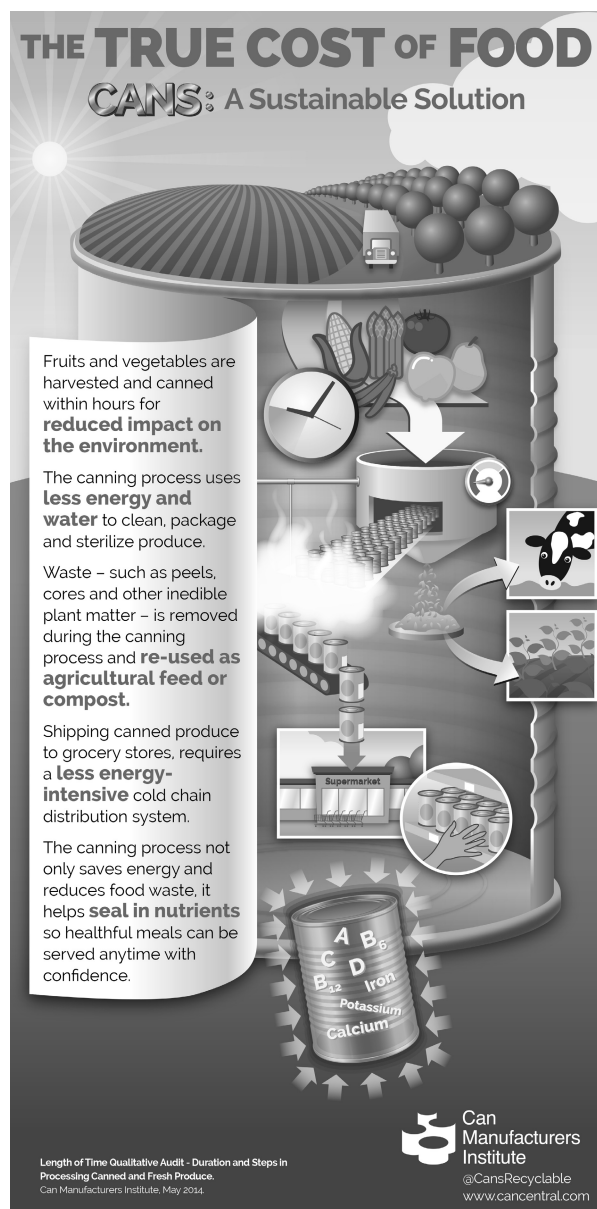
As for food waste, in general, the canned foods purchased today are good for at least 1 year. It's important to remember that "best by" or "use by" dates on canned food have nothing to do with food safety, but rather food quality and when a product may pass its peak of taste. And, the metal can itself is 100 percent recyclable and 80 to 90 percent of all steel ever produced is still in use.

CMI appreciates the opportunity to submit comments in regards to the food waste issue. If you have any questions, please contact me at [Redacted] or at [Redacted].

Sincerely,



ROBERT BUDWAY,
President,
Can Manufacturers Institute.



SUBMITTED STATEMENT BY JAY VROOM, PRESIDENT AND CHIEF EXECUTIVE OFFICER,
CROPLIFE AMERICA

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to submit written testimony as part of the Committee's hearing on food waste. I'm Jay Vroom, President and CEO of CropLife America, the trade association representing the crop protection industry in the U.S. I

proudly come from a long line of farmers and maintain ties with my family's farm in Illinois.

The problem of food waste is astronomic: the United Nations Food and Agricultural Organization estimates that saving just $\frac{1}{4}$ of the food currently lost or wasted worldwide would be enough to feed 870 million hungry people.¹ This past September, the U.S. Department of Agriculture and the Environmental Protection Agency (EPA) announced our country's first-ever national food waste reduction goal, calling for a 50 percent reduction by 2030.² Reducing this much waste will take engagement from stakeholders across the food production system, including growers.

As you examine where waste occurs, I encourage you to look at the farm level, listen to the growers and their needs, and consider the importance of crop protection products and biotechnology tools in decreasing food waste. Waste can be prevented starting from the field and continuing all the way to the consumer's home. An all-too-common occurrence throughout the food waste dialogue is the absence of the farmer's voice. As we build and improve systems that reduce food waste, it is imperative that we hear from growers and support their efforts to reduce food and crop loss. Growers are the ideal sources of information regarding what tools they need to fight threats to their crops and reduce food waste.

Globally, annual food loss and waste stands at: 30% for cereals; 40–50% for root crops, fruits and vegetables; 20% for oil seeds, meat and dairy; and 35% for fish.³ Notably, most food waste estimates do not include the amount of *potential* food loss, or crop loss, from produce that has not yet been harvested. For example, in a 2006 study, scientists from the Institute for Plant Diseases in Bonn, Germany estimated that pests alone could potentially cause the loss of $\frac{1}{2}$ of the world's wheat crops.⁴

From the beginning of the growing process, farmers deal with crop loss due to a multitude of factors, including weeds and other pests. After crops are harvested, in both storage and in transport to grocery stores or production facilities, mold and rot can damage and degrade food, decreasing the length of its shelf life. Mold and rot continue to threaten food until it is finally preserved or consumed, making it all the more important for farmers to grow fruits and vegetables that are as robust as possible. Thankfully, farmers and others in the food production chain are successfully managing many of these threats through the use of modern agricultural technologies. And that fact means that were it not for farmers and the science-based technologies that they use, food waste today could be even worse than it is!

The crop protection industry's mission is to reduce food waste and crop loss starting from the first planting of a seed. Both conventional and organic growers use crop protection products to prevent insects, disease, mold and fungus from destroying food in the field, in storage, and in transport to grocery stores. Crop protection products and other technological advancements including biotechnology also help prevent food loss during the processing and packaging stages of food production. Additional technologies in the commercial development pipeline will further help farmers reduce food loss beyond the farm, such as the development of more robust root systems that resist drought, and soil health research.

When examining the issue of food waste, we also must consider the resources used to produce food, including water, land, energy, labor and capital. This past March, National Geographic reported that, "Globally, a year's production of uneaten food guzzles as much water as the entire annual flow of the Volga, Europe's most voluminous river."⁵ On the farm, many of our nation's highly advanced agricultural methods have led to increased efficiency, preventing resource waste. Precision agriculture technologies allow growers to use inputs and resources more effectively, increasing productivity in an eco-conscious way.

¹ Food and Agricultural Organization of the United Nations. *SAVE FOOD: Global Initiative on Food Loss and Waste Reduction: Key facts on food loss and waste you should know!* (<http://www.fao.org/save-food/resources/keyfindings/en/>).

² U.S. Department of Agriculture. News Release: *USDA and EPA Join with Private Sector, Charitable Organizations to Set Nation's First Food Waste Reduction Goals.* (http://www.usda.gov/wps/portal/usda/usdahome?contentid=2015/09/0257.xml&navid=NEWS_RELEASE&navtype=RT&parentnav=LATEST_RELEASES&deployment_action=retrieve_content) September 16, 2015.

³ UN FAO, *Key facts on food loss and waste you should know!* (<http://www.fao.org/save-food/resources/keyfindings/en/>).

⁴ Institute for Plant Diseases, Rheinische Friedrich-Wilhelms-Universität Bonn. *Crop losses to pests.* (<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=431724&fileId=S0021859605005708>) THE JOURNAL OF AGRICULTURAL SCIENCE, Volume 144, Issue 01. February 2006, pp. 31–43.

⁵ Royte, Elizabeth. *National Geographic*. "How 'Ugly' Fruits and Vegetables Can Help Solve World Hunger." March 2016. <http://www.nationalgeographic.com/magazine/2016/03/global-food-waste-statistics/>.

Today, we ask you to ensure our nation's growers continue to have access to vital and necessary crop protection products. They are elemental to preventing crop loss and reducing further resource waste throughout the food production system. We are concerned that recent steps taken by the EPA, in regards to efforts to change pesticide policy abruptly, are in reaction to misinformed political activism and are not based in sound science. It is of the utmost importance that regulatory decisions balance risks and benefits using solid data.

The successful reduction of food and crop loss, and therefore resource waste, in agriculture requires commitment from all stakeholders in the food production system. The pesticide industry continues to work on solutions to help farmers prevent loss and use resources more efficiently and sustainably. By doing our part at the beginning of the food production chain, along with farmers, we can increase the likelihood that nutritious food reaches your family's kitchen table.

We are now starting up a project at CropLife Foundation to do more research on the role of modern technologies in reducing food waste—and also to help advance innovation that will bring even more solutions. On behalf of CropLife America and our member companies, I'd like to thank you for giving your time and attention to the serious issue of food waste. We look forward to working collaboratively to address this issue.

SUBMITTED QUESTION

Response from Emily M. Broad Leib, J.D., Assistant Clinical Professor of Law and Director, Food Law and Policy Clinic, Harvard Law School

Question Submitted by Hon. Ted S. Yoho, a Representative in Congress from Florida

Question. The EPA food recovery hierarchy shows a continuum of preferred efficiency in food production. In the meat sector, we use advanced meat recovery techniques to ensure we capture the greatest amount of protein possible which might otherwise end up in rendering, a use much farther down on the EPA's hierarchy. How important is it to be efficient in the manufacturing link of the food chain with technologies such as advanced meat recovery?

Answer. Dear Representative Yoho,

Thank you for your interest in reducing food waste and recovering more food along the supply chain, and thank you for your question. I am not personally knowledgeable about meat recovery techniques, but agree that we should make sure to follow the EPA Food Recovery Hierarchy when making decisions about where to invest so that we keep food at the highest level on the hierarchy. Methods like Advanced Meat Recovery Systems, if done safely and in accordance with FSIS Directive 7160.3, is a promising place for investment of resources. Investments can and should be made to find similar areas that could also reduce loss in food trimming or processing of other food products.

Best,

EMILY BROAD LEIB.

