

PRESSURE COOKER: COMPETITION ISSUES IN THE SEED AND FERTILIZER INDUSTRIES

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PRESSURE COOKER: COMPETITION ISSUES IN THE SEED AND FERTILIZER INDUSTRIES

TUESDAY, OCTOBER 28, 2025

UNITED STATES SENATE,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The Committee met, pursuant to notice, at 10:17 a.m., in Room SH-106, Hart Senate Office Building, Hon. Charles E. Grassley, Chairman of the Committee, presiding.

Present: Senators Grassley [presiding], Cornyn, Lee, Hawley, Britt, Moody, Durbin, Klobuchar, Blumenthal, Booker, and Welch.

OPENING STATEMENT OF HON. CHARLES E. GRASSLEY, A U.S. SENATOR FROM THE STATE OF IOWA

Chairman GRASSLEY. This is kind of the order of business for today. I'll have an opening statement, Senator Durbin will have an opening statement, then we have the Chairman and Ranking Member of the Subcommittees to make an opening statement—that's the Antitrust Subcommittee—and then we'll introduce and swear in the witnesses and take the testimony.

Today, the Judiciary Committee turns its attention to the problem Iowa farmers talked to me about at the kitchen table and at the local co-op. This time of the year, farmers are buying the basics they need to plant and harvest a crop. These farmers don't feel like they have a real choice, let alone a fair price. America's farmers are the most productive in the world. They take the risk, put in the work, and feed the United States and much of the world, but they also operate on thin profit margins, if they have a profit. If input costs go up or switching suppliers is too hard, that pinch is felt by every farmer, family, and consumer in the world.

Farmers across the country are shouldering significant higher input costs, particularly for seed and fertilizer. According to the USDA's agricultural price reports, the price indexes farmers pay for these categories were notably higher in January 2025 than at the start of 2021. This was obviously due in part to the record high inflation that took place during the last 4 years. Rising input prices squeeze already thin margins, especially when combined with volatile commodity markets, higher borrowing costs, and weather risk. Today's hearing will examine the drivers behind these trends: energy markets that influence nitrogen production, global supply disruptions, logistic bottlenecks, and market concentration. This hearing will evaluate practical steps that increase transparency and competition so processors and producers can remain viable and resilient. One such step would be to pass my legislation, the Fer-

tilizer Research Act. The bill would require Department of Agriculture to do a comprehensive study on fertilizer industry to shed light on the reason farmers are paying so much for fertilizer. The Department would be required to give recommendations and do regular reporting to the public.

This hearing is focused on competition issues. However, there is something that the Trump administration can do right now to help ease the burden for farmers: lowering the countervailing duties on phosphate from Morocco. In 2024, the Biden administration increased the duties on Moroccan phosphate to 18 percent. The Biden phosphate duties have only hurt farmers by boxing out access to this important market on an essential input with no substitute. I'm calling on the Trump administration to help American farmers and get rid of that phosphate duty.

Over the last 20 years, a few big companies have bought up many of the smaller seed and chemical businesses. Those same companies now sell not just the seeds, but also the pesticides and digital farming tools that tell farmers what to plant and when. Because all these products and data systems are tied together, it's hard for farmers to switch to a different brand. Their data and recommendations are locked in to one company's system. On the fertilizer side, global energy and trade shocks hit prices fast. Regional markets, those prices can be slow to fall. On top of that are the contracts and dealer practices, like loyalty rebates, most-favored clauses, and early order calendars, that can lock in a farm or a local retailer even when there's better options on paper.

Now, nobody here wants to punish innovation. We want better yields, healthier soils, quality products, and we've been vastly improving in that area for the last 40 years, but we also want competition that's fair, transparent, and local competition that a farmer can actually express when he or she sits down to make a purchase. Competition law is about making sure the rules don't give a few players the power to decide what everyone else pays and which choices are even available.

This hearing focuses on problems and workable solutions. First, transparency: farmers deserve to know the effective price that they're paying, including how rebates and clawbacks really work, and whether wholesale fertilizer declines are being passed through in a timely way. Second, portability: farmers ought to control their own data and move it quickly, completely, and affordably so they can seek independent agronomic advice without fear of losing their history. Third, fair dealing: contracts and dealer programs shouldn't operate as a de facto exclusive arrangement in rural counties where there might only be one or two full-service outlets. And fourth, accountability: when mergers don't deliver what was promised on paper, agencies should look back and fix it. I represent Iowa, so I'm thinking about anhydrous ammonia logistics, early season timing, and the reality that a lost multiline dealer can mean a long drive and fewer options. But these issues cross State lines, and the principles are the same whether you farm in Iowa, Illinois, or anywhere else. More sunlight, more choice, less fine print, level playing fields.

I appreciate Senator Durbin's partnership in setting this constructive, bipartisan tone today. We'll hear from farmers, pro-

ducers, and industry experts. My goal is pretty simple: identify practical steps, legislative and regulatory, that respect innovation and property rights, but restore real, on-the-ground competition. We're also joined today by Gail Slater, the assistant attorney general for antitrust at the Department of Justice. Her presence is a strong showing of good faith and continued collaboration on ag antitrust issues that I hope to have with her and have had already. When farmers win fair choices at fair prices, the rural communities win, consumers win and American food security wins. I look forward to the discussion and now turn to Senator Durbin.

**OPENING STATEMENT OF HON. RICHARD J. DURBIN,
A U.S. SENATOR FROM THE STATE OF ILLINOIS**

Senator DURBIN. Thanks, Senator Grassley. We are of different political faith, but we are friends and we have many issues in common, particularly as they relate to agriculture. I concede—reluctantly, but concede—that Iowa is the number one producer of corn among States—

[Laughter.]

Senator DURBIN [continuing]. And add quickly, Illinois is first in soybeans. We have one category where I think we are comfortably ahead of Iowa and I want it noted this week, and that's in the area of pumpkins, so we are proud of that fact. I thank you for this hearing.

I think we need to take a look at the overall state of the farm economy as we address this particular challenge today. More than 50 years ago, in 1973, the U.S. economy was in turmoil. Inflation and the cost of living were up, food prices were high, and American families were angry. At the same time, there was a global shortage of livestock feed, causing the price of soybeans to spike. President Nixon, in an effort to stem inflation, stopped all U.S. soybean exports, including those headed to Japan, then our biggest customer. This interruption lasted about 3 months, but for Japan, it was the last straw. The Japanese wanted a more reliable soybean supplier, so they found a handful of small soybean farms in Brazil and started investing. Today, Brazil is the second largest soybean producer in the world and the biggest competitor to Illinois soybean farmers. All it took was one Presidential misstep and 3 months of trade uncertainty. Three months.

Sadly, President Trump is not a student of history. His tariffs on China, even as they change from one week to the next, are bad news for Illinois farmers and good news for Brazilian farmers, who've seen their sales of soybeans to China increase by \$2 billion this year. Tariffs are also good news for Argentina, which has sold \$708 million more in soybeans to China this year, yet President Trump is propping up Argentina's government with a \$40 billion lifeline when American farmers are struggling to stay in business. The President is in Asia for trade discussions with China. I hope that they will be positive, but China is now investing heavily in South American farming, even building mega ports there to manage massive shipments of soybeans, corn, and sugar. It is a replay of what we saw with Japan and Brazil in the 1970's, and China is playing the long game at the expense of American farmers.

Illinois farmers are concerned about the increasing cost of doing business, especially the cost of seed, fertilizer, and equipment. One problem is that there are just three—pardon me—just a few big companies in these sectors where market concentration reduces competition. The Committee has examined these dynamics in other parts of the food industry, such as meat packing and groceries. It's a complex issue, which is why I joined Chairman Grassley back in April to question why the Department of Justice plan to close its Chicago field office that specializes in agriculture antitrust issues. The administration has not provided a response.

Farmers need policy certainty from Washington, but these past 10 months, that's not what we've given them. The Chairman and I co-sponsored a bill to allow for year-round E15 ethanol sales. It almost passed Congress until Donald Trump and Elon Musk stopped it and opposed the bill. Farmers also face severe workforce shortages. Seventy percent of farm workers in the United States are foreign born, but the way this administration targeted immigrant farm workers is another sign of how this administration values farmers. USDA has forced out more than 15,000 employees since January, and farmers are seeing widespread delay in services as a result.

My farmers—all farmers—need help, but no amount of financial relief can replace lost markets, especially if relief payments simply go from farmers straight to the handful of seed, fertilizer, and equipment companies. Big companies say their size helps them compete and survive while providing consumers with a consistent, reliable product. Farmers disagree, saying feed, seed, and fertilizer are not affordable, come with strict contracts and requirements that prevent farmers from exploring the alternatives, pressure tactics that keep farmers trapped as customers, and zero transparency on how personal farming data gets collected and sent to who knows where for who knows what.

This month, the Nobel Prize for Economics was awarded to three economists who believe that economic growth happens when conditions exist that allow new innovation and technology to rise up to replace old ones. Today's witnesses will report on whether that is actually happening. Thank you, Mr. Chairman.

Senator GRASSLEY. Chairman Grassley. Before I call on Senator Lee, Chairman of the Subcommittee, and Senator Booker, the Ranking Member, I think we all saw the TV reports over the weekend that Secretary Bessent feels that he's making progress with the Chinese counterparts, and I suppose, to some extent, that comes from the fact that the President has used tariffs as a carrot and stick to make progress in this area, but we hope that when President Trump gets done with his meeting with President Xi this weekend that we have good reports on soybeans going to China. Senator Lee.

**OPENING STATEMENT OF HON. MICHAEL S. LEE,
A U.S. SENATOR FROM THE STATE OF UTAH**

Senator LEE. Thank you, Chairman Grassley and Ranking Member Durbin, for holding this important hearing on competition in American agriculture.

Agriculture is, of course, one of our greatest strengths as a country. Our farmers work hard to produce nutritious food, not just for families here at home, but to feed hungry people around the world. And yet today, farmers are facing mounting pressure from market consolidation that's been squeezing them from both sides, creating a bottleneck. The companies that farmers buy from keep raising prices on some of the essential supplies they have to have in order to produce their commodities. At the same time, buyers that farmers try to sell to continue to negotiate down, and they're negotiating down what they'll pay for crops and for livestock. Farmers are caught in the middle, very often watching their margins shrink year after year.

Market consolidation has, of course, raised some additional concerns. Just two companies now control about 90 percent of corn seed genetics. Four firms produce roughly 75 percent of the nitrogen fertilizer used in this country. In cattle, four meat packers handle about 85 percent of fed cattle slaughter capacity in America. Consolidation's impacts are felt not just on the farm, but all the way to the grocery store where consumers face fewer choices and, fairly consistently, higher prices at the same time. In addition to consolidation, sometimes regulations add to the problem, even when this is unintended as it sometimes is. Federal regulations often impose compliance costs that small operators simply can't shoulder. What often may start as safety measures can become barriers that keep new competitors out of the market altogether. They serve as a sort of moat an anticompetitive moat around the industry, and they can exclude people from becoming competitors who might otherwise reach that status.

Now, this is why I've been an original co-sponsor of the Processing Revival and Intrastate Meat Market Exemption Act, also known as the PRIME Act. This bill takes a commonsense approach. It would let States set their own inspection standards for meat that's processed and sold entirely within a single State's boundaries. The Constitution, properly understood and understood based on its text and based on its original public meaning at the time of its adoption, simply does not support the proposition that Federal regulatory authority should extend to commerce as to products that never cross State lines to begin with. By removing this onerous Federal regulatory footprint and allowing States to play their role where it's appropriate for States to play, we could help small processors compete far more effectively. More processors would mean farmers would have more options as to where they could sell their products, which would strengthen local economies and build resilient food systems.

We also need strong enforcement efforts to address some of our competition issues. President Trump's Agricultural Competition Task Force is a joint effort between the U.S. Department of Justice Antitrust Division and the U.S. Department of Agriculture. It's an effort that brings together DOJ's enforcement authority and USDA's deep knowledge of agricultural markets. It's a comprehensive approach designed to root out anticompetitive behavior.

The Task Force is tackling these problems head on. DOJ is investigating price-fixing schemes and allegations of collusion. They're taking a fresh look at past mergers to see how they may have im-

pacted the state of competition. They're examining whether dominant firms are sharing information in ways that let them illegally coordinate their actions. The Task Force is also going after predatory pricing where dominant corporations deliberately sell at prices below cost to drive smaller rivals out of business so that they can then seize a dominant position and, of course, addressing patent abuses that stifle innovation and keep new competitors locked out.

The Task Force also recognizes that we need to address the structural problems that created these issues in the first place. Take the cost squeeze farmers face every planting season. When essential inputs, such as seed and fertilizer, become more expensive, farmers' profit margins inevitably shrink. These costs stay high because of limited competition, and when farmers face these market conditions, we're not just looking at an agricultural problem, we're looking at a broader threat that reaches across the economy and into our Nation's food security, something that we pay a lot of attention to in this town.

Competitive markets are essential infrastructure, you might say, within our economy. When competition works, innovation flourishes because new ideas can break through because they have every incentive to do so. Consumers benefit from better products at fairer prices, rural communities prosper because farmers can earn a decent living, but when competition breaks down, we tend to see the opposite of that. Costs climb while innovation stalls. Farmers and ranchers look at those shrinking markets and wonder if the next generation will have any future in farming at all, and we can't let that happen.

Agricultural markets are not exempt from the rule of law, certainly not exempt from our antitrust statutes. Farmers, ranchers, and American consumers deserve markets where success comes from innovation, efficiency, and hard work, not from consolidation or collusion. I look forward to hearing from our witnesses today and doing all this with an eye toward keeping American agriculture strong for generations to come. In order to do that, we all understand that we need robust competition. Thank you, Mr. Chairman.

Chairman GRASSLEY [off mic]. Now to the distinguished Ranking Member of the Subcommittee on Antitrust, Competition Policy, and Consumer Rights, Senator Booker.

**OPENING STATEMENT OF HON. CORY A. BOOKER,
A U.S. SENATOR FROM THE STATE OF NEW JERSEY**

Senator BOOKER. Mr. Chairman, I'm grateful for you and the Ranking Member for organizing what I think is a vitally important hearing. I want to thank Senator Mike Lee. He and I have a whole bunch of overlap, a wide swath of agreement of the urgency of these issues, and a lot of common ideas about what we need to do about them.

I want to just start by saying something that doesn't really need to be said because it's happening all over this country, but American farmers are in crisis. Farms in New Jersey and across our country are facing unprecedented conditions, and we're seeing a loss of American family farmers in a way that could be described as an extinction-level event. These are incredible Americans who

scratch from the soil the food that feeds our families and makes us competitive globally, but year after year, they have seen the cost of seed, fertilizer, fuel, and land go up while the prices for their crops barely budge. And we're going to hear testimony today about the serious financial challenges facing our soybean farmers really created by the Trump administration's chaotic trade policies, and I want folks to hear that because, again, I've gone across this country in multiple States and met with soybean farmers and seen their true fealty to this Nation and their mission.

But while soybean farmers are struggling, unnecessarily so, we need to also remember that many other farmers, including farmers growing fruits and vegetables, are also struggling and in need of assistance from Congress. They need action from this body. They need not us to only rightfully point out the problems, but come up with solutions because our food system today suffers from, as my colleague, Mike Lee, was saying, hyper concentration. A handful of mega corporations now dominate every step of the supply chain, and that begins with seeds. The seed March market, which used to include hundreds of small, regionally based seed companies, is now controlled by just a few powerful global corporations: Bayer, Corteva, Syngenta. Through mergers and acquisitions and aggressive patent practices, these firms have driven out nearly all the smaller competitors. As a result, these three companies can dictate what seeds are available, what traits they carry, and, ultimately, what crops farmers grow.

Seeds aren't just another input. They are unique because they are living organisms, the foundation of our food system, which used to be controlled and dictated by great Americans—individual farmers who know their soil, who are stewards of the land—but you have to have good seeds to grow, and they know that. For thousands of years, these stewards of our lands, these great Americans, saved seeds from one harvest to the next and fed America, but in recent decades, this fundamental right of farmers to save seeds has literally been stolen from them by corporate greed. Monsanto, now Bayer, locked up seeds with sweeping utility patents and sued our American farmers for doing what they had always done. Saving and replanting the progeny of seeds that they planted, that their parents planted, that their grandparents planted. Since the 1990's, companies have engineered genetically modified seeds with desirable traits, like herbicide tolerance or insect resistance. These patented seeds are bundled with their own pesticides by corporations so farmers are forced to buy the whole package. This traps farmers in an expensive system they may not want or even need.

Last November, I sent a letter to the EPA urging them to deny the pending re-approval for the pesticide, dicamba. Dicamba is notorious for drifting and damaging neighboring farms with crops that aren't engineered to withstand it. This creates an inescapable lose-lose for our American farmers, either by dicamba-resistant seeds or risk your crops being destroyed by pesticide drift. It forces farmers into seed pesticide bundles and expands corporate control. That's not real choice. That's not a free market. It's coercion through chemistry.

Choice is disappearing across our farm economy. It is anti-free market, and our public research institutions, who have the tools to

innovate, are steered to serve Bayer and Corteva's interests. These corporations not only control research funding, but distribution, blocking independent seeds from reaching the market. The result: fewer varieties, weaker resilience, and lost opportunities to adapt to a rapidly changing climate. This is corporate capture of the very first link in our food chain, and when you control the seed, you have unjust control over farmers, and, ultimately, you control the food.

We are America, the home of the brave and the land of the free, but freedom is being stolen by this corporate concentration, and it's not just farmers that are hurting because of this broken, corrupt system. Consumers also pay the price. We must do better. We must restore competition and fairness in this system because I know American farmers. Give them a fair playing field and they can compete, and they can compete with the world, and when our farmers compete, all of America wins. So, this means enforcing our anti-trust laws and placing a moratorium on any new Big Ag mergers. It means protecting farmers' rights to save seeds and choose inputs based on need. It means continuing the ban on dicamba and investing in public research that serves the public interest, public research that serves farmers and not corporations. This is a moment of urgency. If we do not act now, we will reach a point where so many farmers are driven off the land that they have been on for generation after generation, land their grandfathers and great grandfathers and mothers cleared with their own bare hands. What's happening in America is dire. Congress must not just talk about the problems. We've got to fix them, or American farming as we know it will be forever changed.

I look forward to hearing from the witnesses. Thank you, Chairman.

Chairman GRASSLEY. Thank you, Senator Booker. Now I'll introduce the witnesses.

Noah Coppess is an Iowa farmer. He co-owns Coppess Family Farms, Cedar County. He also co-owns Lincoln Way Ag Services, a grain-hauling custom pesticide application business. He holds an associate degree in applied sciences and agricultural mechanization from Kirkwood College. We also have John Latham, another fellow Iowan. Mr. Latham is president of Latham Hi-Tech Seeds, a company his grandparents founded in 1947. To this day, Latham Seed offers corn, soybean, alfalfa cover crop products. Mr. Latham holds a Bachelor of Science degree in agriculture business from Iowa State University.

Mr. Caleb Ragland is president of the American Soybean Association. He leads also the Kentucky Livestock Coalition. Caleb and his wife co-own Magnolia Green and Stock Farm where they raise soybeans, corn, and winter wheat. Mr. Ragland holds a bachelor's degree in business management and economic finance from Bryan College. Mr. Corey Rosenbusch, president and CEO of The Fertilizer Institute. Mr. Rosenbusch previously led the Global Cold Chain Alliance and worked in Indonesia on the USDA-sponsored Agricultural Development Initiative through the Borlaug Institute. Mr. Rosenbusch holds a degree in international development from Harvard and a Bachelor of Science degree in agricultural education from Texas A&M.

Lastly, or not lastly. Andy LaVigne is president and CEO of the American Seed Trade Association, which represents companies involved in plant breeding, seed production, distribution, and related industries. Mr. LaVigne holds a Bachelor of Arts degree in political science with a minor in economics from the University of Florida. Last, we're joined by Dr. Diana Moss, who serves as vice president and director of competition policy at the Progressive Policy Institute. Her work includes studying antitrust enforcement and sector regulation, including agriculture. She previously served and led the American Antitrust Institute and served at the Federal Energy Regulatory Commission. She has a master's degree from the University of Denver and a Ph.D. from Colorado School of Mines.

I thank you all for appearing. Now I would ask you stand, and I will swear you in.

[Witnesses are sworn in.]

Chairman GRASSLEY. They all answered affirmatively. Mr. Coppess, will you start out with your testimony please, and then we'll go to Latham and down the table that way. Proceed.

**STATEMENT OF NOAH COPPESS,
FARMER, COPPESS FAMILY FARMS, STANWOOD, IA**

Mr. COPPESS. All right. Hey, everybody. My name is Noah Coppess. I'm a fifth-generation farmer from Cedar County, Iowa. My wife, Jess, and I farm full time and run an agriculture business while raising our two teenage kids, Tucker and Ellie, on the farm. We grow commercial corn, seed corn, soybeans, and have a small cow herd. Today, I'm here to represent my farm, my customers, my county, and my fellow members of the Iowa Farm Bureau. I've been involved in my family's row crop farm for my entire life. After college, I spent 12 years working in the local farm equipment dealership before I left to work on our farm full time. After getting our ag service business established, we have grown into the fertilizer and pesticide sales market and can discuss the challenges we have had and the pressures we see on our row crop farm.

The reality in farming today is we're price takers rather than price makers. That's especially true when consolidation limits our options. It's further complicated by lack of price transparency. With farmers forced to operate at the liberty of the market at the front and back end, I have concerns with our input and equipment supply chains and their ability to manipulate our costs. I recognize that consolidation can offer benefits, including cost efficiencies and technological adoption, which are critical for meeting our global food demand. However, if the market becomes too constricted, it is ultimately the farmer who loses.

Fertilizer pricing has become very volatile with, at times, wild swings and costs varying as much as 25 to 50 percent from year to year. We are asked to prepay for fertilizer 3 to 6 months prior to it being applied to the soil and up to 14 months before the crop will be harvested. Many of the contracts are written with a narrow window to get the products applied, or the contract expires and the input is repriced at a higher value or monthly fees can be applied to extend the contract. Phosphate fertilizer has become a bare-minimum usage fertilizer on our farm due to the cost. We have invested significant capital and time trying to find other ways to

manage our phosphorus needs as the cost of this input is at a point of negative return.

Following a profitable 2022, farmers lost nearly a quarter of their income in just 2 years due to slumping commodity prices and record high input costs. That pain was felt on our farm, and we're feeling it today. In our ag business, we are a startup. We struggle with the supply chain's willingness to sell us product due to our low volume and competition with their bigger customers. In our area, there are several retail locations to buy fertilizer from. However, there are very few wholesale options. Regardless of who I work with, we will be competing with bigger customers, therefore, struggle to get access.

We use John Deere Operations Center to provide connectivity between our equipment, record data in our fields, and implement strategic placement of seed, fertilizer, and pesticides. John Deere's user agreement mandates they have access to all of the data we record from our equipment and the right to do as they please with it. We utilize a tool called See & Spray to minimize the application of certain herbicides to the weeds the sprayer can see from a highly advanced camera and processing system. This has reduced the use of pesticides by 50 to 80 percent. This machine comes with a tech fee charged per acre, not applied, so we are paying a usage fee on 50 to 80 percent of the fields that we don't even use the product for. We also have to pay a significant fee to purchase the upgrade on the machine at the beginning. There are other platforms where equipment manufacturers have gone to per-acre usage fees that we don't use on our farm. We are under heavy pressure to find safer and environmentally friendly ways to produce our products. How is it that we need to pay for the equipment up front and then pay a usage fee in addition to achieve these goals?

We struggle in the seed industry with genetic options. If we want a traited seed for pesticide or disease defense, we can be at the mercy of what one company has bought from another. In effect, we are often getting, genetically, the same or similar hybrid from multiple companies in a different bag. This situation is prevalent in the soybean side within list traits being slow to the marketplace and in rootworm protection with corn. We lack options. The consolidation of the companies has narrowed up the development of new genetics. On our farm, we raise non-GMO and specialty crops when the opportunity aligns with our resources. We're struggling with advancements in seed genetics to support those areas. With only a couple companies owning the majority of the seed production, we're at the mercy of what they choose to focus on. We've been planting the same soybean variety for 5 years now due to lack of competitive options. This limits the resiliency of our farm.

It's time to take a look into these areas and assess what bargaining strength the farmer has today. We have no doubt that consolidation will continue, and the challenge for lawmakers and the ag industry will be to balance the efficiency with fairness and resiliency.

[The prepared statement of Mr. Coppess appears as a submission for the record.]

Chairman GRASSLEY [off mic]. Thank you, Mr. Coppess. Now, Mr. Latham.

**STATEMENT OF JOHN LATHAM,
PRESIDENT, LATHAM QUALITY, INC., ALEXANDER, IA**

Mr. LATHAM. Thank you, Chairman Grassley, Senator Durbin, and the entire Committee, for the opportunity to speak with you today. My name is John Latham. I'm a third-generation seedsman from Alexander in North Central Iowa. My grandfather, Willard Latham, started our business in 1947. I own Latham Quality, Incorporated, with my wife, Shannon, and my brother, Chris. Our independent seed company sells corn, soybeans, and alfalfa seed under the Latham brand in seven Upper Midwest States. We also operate a soybean production plant and have a corn breeding program.

Independent companies are the lifeblood of rural America because we are connected to the farmer customers we serve. Independent seed companies can offer products better suited for specific geographies than the multinationals. Unfortunately, many independent companies are going out of business as these multinational companies have become more powerful and, frankly, predatory. The seed corn industry is 90 percent controlled by two companies—90 percent—including their own brands and licensing. Due to this massive consolidation, the price of technology on our seeds has gone up significantly since 2021. These higher seed royalty prices are contributing to higher input costs for farmers and forcing many family farms to close.

Prices aren't just increasing for the newest and latest seed technology, but also in older technologies that are going off patent or soon to be off patent. One example is NK603, a glyphosate-resistant corn product which went off patent in 2022. Farmers are being charged the highest royalties ever for this off-patent technology. More than 90 percent of biotech-traded corn in the United States is glyphosate resistant, so farmers are paying billions of dollars for seed royalties on a trait that has been off patent for 3 years.

As difficult as it's been for independent companies across America, I believe we have been hit the hardest. Latham started corn breeding in 2020 with the belief that we could create niche corn products that could help our customers fight corn diseases, like tar spot. We created products that weren't available from our suppliers, but our very modest corn breeding program was met with anger from our leading Big Ag provider. After a heated discussion about our corn breeding program, in April 2022, we were told Latham's corn products would have the largest price increase in company history, and it did. Every technology, even older technologies that had gone off patent or soon to go off patent, were increased.

Imagine having to license all your technology from your largest competitor and then having to give your competitor internal company information, including the names and orders of all your customers. Imagine putting your hard-earned money into a breeding program to help your customers but being forced out by the dominant firms in the industry. Imagine being subjected to restrictive rebate programs that require you to sell, near exclusively, one company's technology in order to qualify for those rebates, and imagine relying on those rebates to generate any kind of profit. Imagine having your entire year of profits being tied to off-the-record fund-

ing that can be taken away at any time by your largest competitor. Imagine being in a business where you don't know your costs of goods before you buy it and your competitor can raise your costs at any time. Imagine being in a business where the older products that you can't sell increase in price, leaving you with a mountain of expensive inventory and higher prices for farmers. Imagine being in a business where the technology royalty continues to increase even after it goes off patent. Seed prices increase even when commodity prices are low, and farmers can't even break even. Imagine being in an industry where it is impossible to capture off-patent genetics because of restrictive licenses and scrambled codes of the seed depository. These are the unfortunate realities of an independent seed company in an industry without competition or oversight. Farmers are paying the price with higher input prices. The lack of new breeding programs and diversity of genetics is a national security risk where a bioterror attack or disease could threaten the Nation's corn supply.

I appreciate very much the opportunity to tell our story and the story of other independent seed companies. I do so at great personal risk, but I believe our company's story and the story of independent, family owned seed companies, and the farmer customers that we serve must be told. I look forward to taking your questions. Thank you.

[The prepared statement of Mr. Latham appears as a submission for the record.]

Chairman GRASSLEY [off mic]. Thank you, Mr. Latham. Now, Mr. Ragland.

**STATEMENT OF CALEB RAGLAND, PRESIDENT,
AMERICAN SOYBEAN ASSOCIATION, MAGNOLIA, KY**

Mr. RAGLAND. Good morning, Chairman Grassley, Ranking Member Durbin, and Members of the Senate Judiciary Committee. It is an honor to join you today to testify on behalf of the American Soybean Association regarding the State of the farm economy and the impacts of rising input costs for farmers. My name is Caleb Ragland. I'm a ninth-generation farmer from Kentucky. I also serve as president of ASA.

U.S. agriculture is facing significant challenges, which are illustrated by rapidly plunging margins for farmers. Commodity prices are down nearly 50 percent from highs experienced just 3 years ago, and farm production costs continue to skyrocket for land, seeds, fertilizers, pesticides, and farm machinery, while high interest rates create additional pressure. For soybean farmers, the loss of our largest export market due to trade retaliation by China has made financial problems even worse. We are hopeful that this market will be restored following the meeting between Presidents Trump and Xi. Still, high production costs and market losses mean soybean farmers are expected to face a loss of around \$109 an acre for this year's crop.

Farmers are paying more than ever to grow their crops. In just 5 years, seed prices have increased by 18 percent, fertilizer by 37 percent, pesticides by 25 percent, machinery by 23 percent, and interest expense by 37 percent. Seed is a key cost consideration for farmers. Advancements in seed technology and pesticides have de-

livered real agronomic benefits but at an added cost. The importance of seed quality and pesticides to crop protection means farmers cannot cut these costs. Fertilizer is a major component of overall production cost. Unlike most other farming inputs, fertilizer relies on global supply chains, which makes the cost unpredictable. This is also a significant input risk that can impact the farmer's ability to have an accurate budget.

While agribusiness has faced much consolidation, ASA has not done analysis to provide the Committee with an informed position regarding the impact of consolidation on our input cost. However, other factors are contributing to higher input cost. The U.S. imports \$33 billion in inputs annually. For high-cost products, like fertilizer and pesticides, tariffs create a heavy financial burden. IEEPA tariffs have raised tariff-related input expenses for farmers from 1 percent to over 12 percent this year. Inputs also depend on the global market. Many fertilizers and half of the active ingredients for pesticides are imported. Global dynamics, like demand shifts and geopolitical issues, also impact prices. The high cost of farm production has eroded the financial safety net of soybean farmers and has made it harder to weather trade-related market losses this year. ASA appreciates actions to investigate competition and market dynamics impacting input price increases, like the USDA and DOJ competition partnership and the introduction of Chairman Grassley's Fertilizer Research Act, which ASA supports.

If high input costs continue on this path, farm profitability for row crops, like soybeans, remains dire. As Congress and the administration continue to address the overall cost of farm production, I would like to highlight three immediate achievable opportunities to improve economic conditions for soybean farmers. One, remove IEEPA tariffs on critical inputs, machinery, and parts, which will immediately lower cost of production for farmers. Two, the 45Z tax credit and proposed RFS volumes will drive investment in soybean processing and biofuel production. That needs to be finalized this year. And three, given the state of the farm economy, targeted farm assistance is desperately needed to offset trade-related losses and negative basis being experienced in many regions.

Thank you again for the opportunity to testify on behalf of U.S. soybean farmers regarding the impact of rising input cost on our industry. ASA appreciates the Committee seeking to identify opportunities to improve the state of the farm economy. I look forward to your questions.

[The prepared statement of Mr. Ragland appears as a submission for the record.]

Chairman GRASSLEY. Thank you, Mr. Ragland. Now, Mr. Rosenbusch.

**STATEMENT OF COREY ROSENBUSCH, CEO,
THE FERTILIZER INSTITUTE, ARLINGTON, VA**

Mr. ROSENBUSCH. Thank you, and good morning, Chairman Grassley, Ranking Member Durbin, and Members of the Committee. The Fertilizer Institute is made up of importers, wholesalers, retailers, and manufacturers that serve our American farmers. There are over 200 producers of fertilizers globally, and the U.S. is 1 of 3 countries in the world that has more than 20 unique

companies producing fertilizer. Half of the crop yields in this world are made possible by the use of fertilizer. I grew up in a small rural Texas town of Glenrose where we raised hogs and my dad was the FFA advisor, so the highlight of this job is to get out into the real world and visit with growers. I was recently at a farmer's co-op meeting, and there were two critical conversations that came up: the lack of market demand for their crops and high input costs.

Fertilizer prices were at historic lows just a few years ago, followed by record highs. This kind of volatility is a challenge for growers and for the fertilizer industry because without farmers, there would be no fertilizer industry. We often speak of fertilizer as a single product, but it is actually many different materials, and most of our focus today will be on the three macronutrients: nitrogen, phosphate, and potash. They're each different resource-dependent materials with very different markets.

The United States does have significant production of nitrogen in phosphate. However, we only have a small amount of production of potash and import almost 98 percent of our need, 87 of which percent comes from Canada. The U.S. only accounts for about 7 percent of total global fertilizer production, and we are a net importer. Overall, 90 percent of all fertilizer used in this world is used outside of the United States, so if you hear nothing else I say today, please hear this. Fertilizer is a globally traded commodity subject to fierce global competition and supply and demand.

To understand that supply and demand, we have to begin with geopolitics. China is the world's largest producer of fertilizers with about a third of all nitrogen and 40 percent of phosphate production. They are currently restricting their exports, which are forcing growers to source those tons elsewhere. India, which is the second largest consumer of fertilizers behind China, procure their products centrally through the Federal Government, which is then heavily subsidized for their farmers. Conflicts in the Middle East have interrupted Egyptian and North African nitrogen operations due to the natural gas supply, which is the feedstock for nitrogen, largely coming from Israel. When Iran's nuclear facilities were destroyed recently, it also seriously disrupted their fertilizer production. Iran is the world's second largest supplier of urea behind Russia. So, speaking of Russia, it's the largest global exporter of fertilizer, and, of course, we all know they're still facing sanctions because of the War in Ukraine. Russia also supplied a lot of Europe's natural gas, which resulted in about 70 percent of Europeans' nitrogen production being curtailed a few years ago. That made Europe the new marginal producer.

So, you can see we've had significant global supply shortages for fertilizer, but we've also had demand growth. Fertilizer demand is tied to crop demand, and 50 percent of all the crop nutrients used in the United States is driven by corn, and while commodity prices have been low, we saw 8 million additional planted acres of corn this year, which created even more demand for fertilizer. Many of the largest globally traded agricultural commodities that are experiencing price growth, thus creating high fertilizer demand, are not even grown in the United States, such as canola, coffee, and palm oil. We recognize how challenging and frustrating this must be for our customer partners at a time when they're experiencing very

low prices for the crops that they grow, and that's why we want to be a partner with our growers and with policymakers to develop some solutions.

In the interest of time, I'll refer to my written testimony for a detailed description of those policy solutions, but I can summarize it by saying that fertilizer production facilities are very capital intensive, sometimes costing as much as \$5 billion for a nitrogen facility or 10 years to develop a potash or phosphate mine. But I do want to be very clear that fertilizer is a globally traded commodity, so while we cannot directly influence prices, we can bolster domestic supply to help mitigate geopolitical risks for our American farmers. Thank you.

[The prepared statement of Mr. Rosenbusch appears as a submission for the record.]

Chairman GRASSLEY [off mic]. Thank you, Mr. Rosenbusch. Now, Mr. LaVigne.

**STATEMENT OF ANDREW LAVIGNE, PRESIDENT & CEO,
AMERICAN SEED ASSOCIATION, ALEXANDRIA, VA**

Mr. LAVIGNE. Thank you, Chairman Grassley, Ranking Member Durbin, and Members of the Committee for the opportunity to testify for the hearing today. I'm Andy LaVigne, president and CEO of the American Seed Trade Association, or better known as ASTA. We were founded in 1883 and are one of the oldest trade organizations in the United States. Its membership consists of nearly 700 companies involved in seed production, distribution, plant breeding, biotechnology, and related industries in North America. Our members produce seed, from alfalfa to zucchini, and in production systems, from conventional to organic to biotechnology.

Every season, farmers choose seeds that have been improved through plant breeding, biotech, and seed treatments. Our members ensure that farmers have access to reliable, resilient seed varieties tailored to local growing conditions, helping them reduce risk and boost crop productivity. Seed development and production begins with advanced breeding and research programs, moves to seed production with practices ranging from large-scale crops to hand-pollinated varieties, then the seed crop is harvested and concludes with conditioning, treatment, and testing of the seed quality and purity prior to commercial sale. This process could take place in multiple countries as companies rely on different regional climates and leverage multiple growing seasons per year to accelerate the rate of both research and seed production activities. Even with this highly efficient and optimized process, it can take 8 to 10 years and several million dollars just to bring a new variety to market. Plant breeding and seed improvements is an ongoing iterative process that depends on the market, pest and disease evolution, and constant fluctuations.

In the case of seed companies developing biotech products or biotech seed, the cost of domestic and international regulatory compliance are significant. A study in 2022 estimates the cost and time to bring a new biotech trade to market at roughly \$115 million and over 16 years. In export markets, particularly for a subset of biotech crops, the seed industry faces severe constraints from non-tariff trade barriers, including countries that deliberately use their

regulatory system to stymie American seed innovation and exports of American grain products.

The seed sector has a long history of delivering seed choice and ensuring seed performance for America's farmers, gardeners, and landscape managers, ensuring the best seed is available to meet the needs of the wide range of environments, soil types, and management practices. International trade and global movement of seed is critical to the U.S. seed industry to efficiently develop and commercialize and improve varieties for U.S. farmers. Across all seed varieties, the continued escalation of tariffs on seed poses a unique challenge. For example, a tomato seed can cross six or seven different international borders for research and development to do seed multiplication and clean and package seed before it's sold to a farmer. For each crossing, a tariff may be levied on that same seed, burdening the same seed producer multiple times.

Our industry believes there's a path forward to alleviate some of the pressures that both farmers and seed producers currently face. First, we're advocating, both domestically and internationally, for risk-proportionate, science-based regulatory reform to right-size regulatory compliance processes and the associated costs that impact companies of all sizes. Our advocacy applies to plant breeding innovations, like gene editing, as well as biotech crops. Reform is needed to ensure that rapid pace of scientific innovation is not hampered by unjustified regulatory obstacles. Second, and I'll hit this very quickly, but most important is our investment in agricultural research, not only from the private sector but from the public sector. Our partners in our land grant institutions and our research institutions are vital in this process as we go forward in discovering the genetics-based science, and that needs to continue, and they're stressed as all of you know right now. Research at the land grant institution is even more important as we look at our lower acreage crops. Fruits and vegetables, forages, grasses, turf is very important to help in that public/private partnership to bring improved varieties to the marketplace.

So, in closing, from seed to table, the entire agricultural value chain is navigating pressures from the brunt of inflation and economic uncertainty. We know that farmers are taking this economic challenge head on to continue feeding, fueling, and clothing the world. Seed producers are weathering it alongside them while working to deliver the high-quality, professionally produced seed U.S. farmers expect season after season. And when farmers buy that bag of seed, they're investing in yield potential, resilience to pest and weather, and the ability to produce more with less. They're investing in better seed for better crops for better quality of life. Thank you, Chairman Grassley, Ranking Member Durbin, and Members of the Committee. I look forward to answering the questions.

[The prepared statement of Mr. LaVigne appears as a submission for the record.]

Chairman GRASSLEY. Thank you, Mr. LaVigne. Now, Dr. Moss.

STATEMENT OF DIANA MOSS, VICE PRESIDENT AND DIRECTOR OF COMPETITION POLICY, PROGRESSIVE POLICY INSTITUTE, WASHINGTON, DC

Dr. MOSS. Thank you, Chairman Grassley, Ranking Member Durbin, and Members of the Committee. It's an honor to be here today. I am Diana Moss, director of competition policy at the Progressive Policy Institute.

Seeds and fertilizers feature highly concentrated markets with only a few firms, high prices, and little choice. Both sectors have been the subject of massive consolidation and strategic business practices. In the late 2010's, the six large agricultural biotechs merged to form the Big Three. Today, two firms control 72 percent of the corn seed market and 66 percent of the soybean market. Three firms control 83 percent of the cotton seed market. Fertilizer markets are also highly concentrated. The four-firm ratio for nitrogen in the U.S. is about 77 percent, and the four-firm ratio for potash and phosphates is 100 percent. These are big numbers. Highly concentrated markets are far more conducive to anticompetitive coordination rather than the hard-nosed competition that lowers prices, lowers licensing fees, tech fees, and royalty rates.

So, what does high concentration mean for input costs and food prices? To be sure, they are affected by the dynamics of supply and demand, shocks to supply chains, such as weather and disease and U.S. trade policies. But as seed and fertilizer markets have become more concentrated, it is hard to dispute that consolidation and business practices have played a major role. U.S. farmers struggle with the high cost of intermediate inputs, such as seeds, pesticides, and fertilizers, which account for almost 40 percent of their total intermediate production costs. In the last 30 years, the average price farmers paid for genetically modified seed rose by almost 450 percent, while their commodity prices increased by only 50 percent. In fertilizers, prices for phosphorus, potash, nitrogen spiked dramatically in 2008, again in 2012, and again in 2022, raising concerns about the potential for collusion amongst global fertilizer producers. All of this puts the squeeze on farmers' margins.

The Crop Farm Index for prices farmers receive for their commodities has remained consistently below the index for prices paid by farmers for feed, fuels, seeds, and fertilizers. These supra-competitive input prices initially harm farmers, but they quickly translate into high food prices for consumers who are already grappling with a high cost of living. Consumers spend 13 percent of their limited budgets on food, the third-largest budget item behind housing and transportation. Public concern about food price inflation is at an all-time high.

In light of these troubling trends, I believe we need to widen the lens on competition and agricultural inputs. Antitrust's role has been less than exemplary as concerns over excessive consolidation in ag biotech and potential price fixing in fertilizers has gone largely unpursued. The agencies have also ignored other costs of consolidation, such as delaying entry of generic GM seed, bundled cropping systems that are engineered not to operate with other products and lock out smaller innovators. Antitrust has also ignored the loss of stability and resiliency in supply chains that are created by

market power bottlenecks. These issues now transcend traditional competition policy concerns.

U.S. farmers should be able to count on fair commodity prices, input costs, and sustainable margins. Consumers should be able to count on low food prices. Both farmers and consumers—most important—should be able to count on having choice in what they buy and who they buy it from. A more coherent policy approach is to strengthen antitrust enforcement. Another approach is to require more or better coordination between the DOJ, the FTC, and USDA, including better data collection to promote price transparency. We might also consider giving USDA authority to intervene if consolidation raises supply chain safety, stability, and resiliency issues. With farmers in the middle of this vortex, we should also be very worried that high concentration costs, prices, and a lack of choice risk the permanent loss of U.S. agricultural productive capacities if farmers hang up their hats and close down their farms. This all means that promoting competition should garner broad bipartisan support.

I appreciate the opportunity to appear here today and look forward to your questions.

[The prepared statement of Dr. Moss appears as a submission for the record.]

Chairman GRASSLEY. I compliment all of you for staying within the 5 minutes. We're going to have 5-minute rounds of questioning. You'll see Members in and out because there's two votes on the floor, so we'll take turns questioning.

Mr. Rosenbusch, in 2014, the Obama administration discontinued annual reports on the fertilizer industry. Since then, prices have become more and more opaque, making it harder for farmers to know if they're getting a fair deal. My Fertilizer Research Act seeks to fill in these reporting gaps. So, could you tell us what measures are being taken to ensure transparency and pricing mechanisms so farmers aren't unfairly penalized by last-minute price increases?

Mr. ROSENBUSCH. Mr. Chairman, thank you for that question, and we fully support your efforts to provide transparency to growers. We believe them having information about what's going on in the marketplace is very critical. We've been working with your staff, your team, as well as on the House side to reinstate the position at the United States Department of Agriculture that has been vacant for more than 20 years now that was focused on fertilizer pricing and transparency. We believe growers having that independent source at USDA would be of tremendous benefit to growers and to farmers to be able to recognize and understand all of these dynamics that are going on and help them make decisions.

Chairman GRASSLEY. Would that also cover price transparency that you're talking about?

Mr. ROSENBUSCH. Yes. They would also be doing research on prices globally, United States. They would be looking at a variety of different factors. Iowa State also did a research or a report on this a couple of years ago, but we believe that position would be helpful long term.

Chairman GRASSLEY. Okay. Dr. Moss, in your opinion, what types of public reporting could provide the necessary transparency in fertilizer markets for farmers looking for a fair price?

Dr. MOSS. Thank you for the question, Chairman Grassley. I think, first and foremost, increasing price reporting to promote transparency would be incredibly helpful not only for members of the industry, but for organizations like mine, think tanks, and university researchers to be able to do analysis of the markets and the prices that are emerging from highly concentrated markets. Price transparency remains a problem in agricultural inputs, but also in cattle and ranching, so I think that, in fact, the starting point is to improve and to promote coherent, efficient price collection data bases so that we can have better tools to work with.

Chairman GRASSLEY. For Mr. Latham, Mr. Coppess, major mergers and business transactions over the last decade reduced the Big Six ag companies to only four. U.S. Department of Agriculture Economic Research Service reports that Bayer and Corteva together account for more than half of the U.S. sales of corn, soybean, and cotton seed. What impact does this have on your business? Has there been an impact on the number of corn or soybean varieties available to farmers?

Mr. LATHAM. Thank you for the question, Senator. It's been a huge impact on our business, especially in the last 5 years. My brother and I, who's with me today—Chris—we were looking at prices over the last 5 years. Five years ago, 42 percent of a bag of seed went to seed royalties. Now 70 percent of a bag of seed goes to seed royalties, and, unfortunately, there's been no new innovation. These are the existing products that we had 5 years ago. There's been no new innovation, no upgrade. There are some new products but, overall, from 42 percent to 70 percent has risen prices tremendously, and they did it because commodity prices were good at the time a few years ago, and they said, well, farmers can afford it now. So, the prices went up significantly, and now, unfortunately, commodity prices are down, and those prices haven't gone down at all.

Chairman GRASSLEY. Mr. Coppess.

Mr. COPPESS. Thanks for the question, Senator Grassley. On our farm, when we purchase seed, I have a relationship I enjoy with a company and a seed person that we work with, and I'm not looking to change that relationship, but we have very little to no price bargaining. The price is the price, and it's consistently gone up every year with some slight changes. If a product doesn't perform, it might be a little cheaper the next year, but we've seen no relief in pricing of our seed commodities.

Chairman GRASSLEY. Okay. Dr. Moss, in your opinion, if a trade owner conditions access in ways that predictably raises rivals cost or limit stacking with competing traits, is that a problem and should it trigger enforcement?

Dr. MOSS. Yes, I do believe that is a problem. One of the biggest issues that we face right now is with the large ag-biotech mergers. We now see highly integrated, engineered systems of traits development, traited seed, agrochemicals, and now digital farming. It is very, very difficult for smaller innovators—say, independent seed companies or independent trade innovators—to penetrate markets,

to get into a market, get a foothold, and to compete and effectively distribute their technologies when they are facing an enormous castle wall of a vertically integrated platform. And if companies hold a dominant position in any of those markets, that makes the walls even higher to scale.

Chairman GRASSLEY. Yes. Senator Durbin, before you go, has the vote started yet? Well, we'll wait and see. If we do, then Senator Lee's going to take over. Go ahead.

Senator DURBIN. Thanks, Senator Grassley. I'd like to say a word and get your reaction on the question of agricultural research. Since the 1930's, U.S. Government-funded ag research has helped to boost our farm output by 170 percent, according to the USDA. Today, most agricultural research in the U.S. is funded by large private sector companies, not the Government. Agricultural research funded by the U.S. Government has plummeted in the past 30 years, while Chinese Government investment in ag research has risen 8 times, surpassing the U.S. 10 years ago. Today, China is the world's biggest funder of government-funded farm research. The Trump administration and the DOGE cowboys want the USDA to close and consolidate a federally funded laboratory at the University of Illinois, the Soybean Germplasm Collection, which is the genetic seed bank whose scientists, since the 1940's, have cured soybean disease, improved soybean yields, and developed new varieties and uses, again, creating new markets for farmers. If this lab and its resources are closed or diminished, there is only one other remaining lab. You want to guess where it is? China. Is there anyone on this panel that thinks that's a good idea?

[Nonverbal responses.]

Senator DURBIN. Obviously not. Mr. Latham, that kind of resource in agri and Federal research has to be part of your calculation as well when you talk about innovation, is it not?

Mr. LATHAM. Yes. I would love to see more investment in ag research from public universities. That'd be very helpful.

Senator DURBIN. Well, I hope you'll all express that to your Members of Congress and the people you talk to.

Dr. Moss, over the last decade, as you've noted and others as well, a series of mergers and acquisitions produce Big Three companies that dominate different sectors. In the seed sectors, it's Bayer, Corteva, and Syngenta. A similar trend produced the Big Three in fertilizer, Mosaic, Nutrien, and CF. Should antitrust enforcers at the FTC and Department of Justice have done more to block these mergers that produces the Big Three in seed and fertilizer?

Dr. MOSS. Thank you, Senator Durbin. The answer is an unequivocal yes. These massive mergers, which have completely restructured our seeds and fertilizer industries, are now responsible for high prices, limited choice, and less effective innovation. The major problem with antitrust today, especially in food and agriculture, is a very narrow view that antitrust takes in defining markets. The divestitures that were taken in the Bayer-Monsanto and the Dow-DuPont mergers were very targeted, very small, and there was a lot of deference to giving companies their mergers so that they could innovate better or innovate faster. We now know that

high levels of concentration are not necessary to drive innovation, and these mergers, on balance, produced more harm than good.

Senator DURBIN. Do you believe the FTC and DOJ need new legal tools to stop the anticompetitive practices of these dominant firms, or is it simply a matter of stepping up oversight and enforcement?

Dr. MOSS. I think antitrust plays a very important role given the limited set of tools, but powerful tools antitrust works with. The consumer welfare standard can approach concerns about high prices, about lower quality, about less innovation, but the bottom line is most of antitrust enforcement just focuses on prices. The kinds of problems we see in food and ag are bottleneck supply chains, loss of resiliency and stability, a delay of generic entry. These are all things that are much, much harder for antitrust to approach in the normal course of a merger investigation or a monopolization investigation, which is why I mentioned we might want to start thinking about giving USDA more authority.

Senator DURBIN. Mr. Rosenbusch, how do you respond to those observations?

Mr. ROSENBUSCH. Thank you, Senator, for that question. We believe we need a strong domestic fertilizer industry to compete in a global marketplace, especially when you're looking at countries that are often State-owned enterprises producing fertilizers. We think the FTC has taken a close look at this. As a matter of fact, in the last 2 years, the two acquisitions in this space were carefully studied by the FTC and reviewed, and we've also seen the USDA, 2 years ago, go through a competitive analysis of the industry to ensure that we are competing on a global level and global supply and demand for—

Senator DURBIN. Excuse me for interrupting, but I have just 20 seconds left. The farmers who are buying your product say you're killing them. You've consolidated, so they have few choices, take-it-or-leave-it choices, and your prices are killing them. When you say you're competitive globally, it doesn't help the farmer in Illinois and Iowa to know that the global market is competitive. How do you respond to that?

Mr. ROSENBUSCH. We need the farmers to succeed. They need access to fertilizer—

Senator DURBIN. But you're killing them with your prices.

Mr. ROSENBUSCH. And those are all driven by global supply and demand. A lot of these geopolitical events and reliance on some of that foreign supply coming in is a huge impact on that.

Senator DURBIN. Thank you.

Senator LEE [presiding]. Mr. Latham, I'd like to start with you, if that's okay. Where are the main barriers that independent seed companies face when licensing or stacking patented traits in this industry?

Mr. LATHAM. Where do I begin? There's a long list, a lot of areas that I could go into. You know, one thing that I think has hurt the industry in general, we have these restrictive rebates that we're under, which really stifle competition because if a new breeding company comes into the market and if the whole industry is under a rebate, that if they go to that new innovator, they're going to lose their rebate and could fall off a cliff there. So, I think that's one

thing that's really impacting the whole industry, and there's a whole longer list, and I know you have short time.

Senator LEE. Now, when we think about intellectual property laws, they're kind of a paradox because, on the one hand, the whole point of intellectual property laws is to give someone at least a temporary monopoly in something, but on the other hand, they are pro-competitive to the extent that it fosters innovation. In your view, how does our current intellectual property framework either help or hinder competition or innovation?

Mr. LATHAM. Yes. I think I'm all for patents and intellectual property protection. Obviously, that can create innovation. You have to have that to have innovation, but, unfortunately, we see some of these patents where the products get stacked with some new product only to be able to use to extend that patent, and so the patents go from 20 years to many more years. And unfortunately, in 2014, a lot of different corn traits went off patent, and we still don't have any market now for off-patent technology on the corn side of the business, so something needs to fundamentally change.

Senator LEE. What about consolidation? When there's consolidation among the major players in the seed industry and among trait owners, how does that influence your research and development strategy internally?

Mr. LATHAM. Yes. Unfortunately, on the corn side, and you mentioned the stat, too—90 percent—and that includes licensing as well as their own brands. But when you have that big of consolidation, it makes it very difficult for any new innovator to get into the market. Especially if they want to do traited or just even conventional, it makes it very difficult, so, we've seen. Since 2016, when the Committee met last, we've seen massive consolidation, we've seen less innovation, and we've seen much higher prices, unfortunately, for our farmer customers.

Senator LEE. Those two things naturally lead one to another, right? I mean, diminished competition pretty much always is going to result in higher prices—

Mr. LATHAM. Absolutely.

Senator LEE [continuing]. Or at least diminished quality, sometimes both.

Mr. LATHAM. Absolutely.

Senator LEE. And there's no exception to that here and the more consolidation you see, regardless of what the cause of that is. But let's suppose if it's prompted by an excessive Federal regulatory footprint, that can do it, but regardless of what the cause is, there are fewer competitors. There is often less competition, and, always, when you see less competition, that causes other problems. Mr. Coppess, have you noticed reduced competition or consolidation among local dealers or fewer independent options over time?

Mr. COPPESS. Thank you for the question. Yes, the independent seed companies, when somebody retires, moves on, oftentimes that doesn't get replaced by a younger person or a new person taking on that business. That dealership just goes away oftentimes.

Senator LEE. Okay. That's helpful. And, Mr. Ragland, how does dependence on imported potash and imported nitrogen affect the U.S. growers' resilience and planning?

Mr. RAGLAND. Well, as we mentioned in our testimony, it's a global market, requires a lot of planning ahead. There's global forces at work, and we have a very limited number of options where we can purchase, and the less competition, oftentimes the higher the prices are.

Senator LEE. Right.

Mr. RAGLAND. And we have some data we provided that shows that since the Ukraine War, in particular, prices spiked up drastically when that started. They came back down, but they have plateaued at a much higher cost than they were before.

Senator LEE. Than they were before the war.

Mr. RAGLAND. Yes. Yes.

Senator LEE. They never fully retreated.

Mr. RAGLAND. No, not anywhere close, and that has had a major impact across all of production and agriculture.

Senator LEE. Right. Somewhat reminiscent of what happened during COVID.

Mr. RAGLAND. Yes.

Senator LEE. And finally, Mr. Rosenbusch, how did dealer incentive programs work in practice, and did they inadvertently limit fair competition?

Mr. ROSEBUSCH. Thank you for that question, Senator Lee. On the fertilizer side, we do not have dealer incentive practices. That's more of a crop protection practice.

Senator LEE. Okay. Thank you. My time has expired. Senator Klobuchar is up next.

Senator KLOBUCHAR. Okay. Thank you very much, Senator Lee, and thank you to the Chairman and Ranking Member for holding this hearing. I'm used to seeing many of you. I'm Ranking Member, as you know, on Ag, especially you, Mr. Ragland. I know you've testified before. I also note that Gail Slater is here, the head of anti-trust for the Justice Department, who has had widespread support on this Committee.

So, one of my farmers, a soybean farmer actually, described this situation right now as a perfect storm of ugly. He talked about the input costs, some of which are caused by consolidation that we've been so well talking about today, talking about what's happening with labor and the fact that we are missing some ag workers right now, and I think there's another way this could be handled. Talked about the tariffs and IEEPA, and I note that with soybeans, and I am, you know, glad that there's discussions going on, but even if that somehow that market came back immediately, as you know, Mr. Ragland, which it won't do, it's still a horror for our farmers in terms of half of their market is China, but the other half is other countries, nearly all of which are also subject to these tariffs.

And so, I just think that if you look at this as a whole, and not just with soybeans, but for other crops, and what's happening with machine parts, as you point out, that this is a really hard thing that's going on right now, and I would like to see a reversal of these tariffs. I think that would be the quickest way to solve many of these problems, but let's start with market consolidation, and I'll start with you, Mr. Latham. What would it mean to you to have real competition in the seed market?

Mr. LATHAM. Thank you for the question, Senator.

Senator KLOBUCHAR. Yes.

Mr. LATHAM. It would mean everything to us, I think, if you had no restrictive rebates. The rebates are very punitive for independent companies. If you had broad licensing, I think you could see a flood of new breeding companies into the market, which is vastly needed. I think with gene editing, there's a whole host of new technologies we could take advantage of, but right now, when you've got a couple different companies that are controlling the whole market, it makes it very difficult for our company—

Senator KLOBUCHAR. Okay. Thank you.

Mr. LATHAM [continuing]. To invest in new technology.

Senator KLOBUCHAR. Thank you. That's helpful. Ms. Moss, quickly, how does consolidation affect the resiliency of the ag system?

Dr. MOSS. Thank you, Senator Klobuchar, for the question. Consolidation is now responsible, in many food ag supply chains as well as in healthcare, for creating enormous market power bottlenecks where you have powerful companies, oligopolies, or dominant firms controlling prices paid to producers, but then also controlling prices that consumers have to pay in the grocery store. These bottlenecks are really susceptible to instability. If a supply chain is hit by some sort of exogenous shock, like weather or disease as we saw with COVID, then there are very few other competitors to step in, and so supply chains go down, and that is not only a national security issue, but a health and human safety issue.

Senator KLOBUCHAR. And just a quick answer on this because I called you as a witness many times when I Chaired the Antitrust Subcommittee, now working with Senator Blackburn on the Tech Subcommittee. Would reform to our antitrust laws with either the CLARITY bill or the bill that Senator Grassley and I have introduced, which is just beyond specific industries, would that be helpful when it comes to these issues?

Dr. MOSS. Absolutely, yes.

Senator KLOBUCHAR. Okay.

Dr. MOSS. Anything to strengthen, modernize, and clarify our laws.

Senator KLOBUCHAR. Okay. Thank you. Mr. Ragland, could you talk about the market for soybeans outside of China and what's happening with some of that as well because I think all the focus gets on China, but there's a lot of other countries.

Mr. RAGLAND. Well, those markets outside of China are roughly half of our exports. China's the other half of our exports, and those markets are fairly strong, but they're only a limited amount of the demand for our product, and that gaping hole that is left by the lack of the China involvement is—

Senator KLOBUCHAR. Mm-hmm.

Mr. RAGLAND [continuing]. Very detrimental on our prices right now.

Senator KLOBUCHAR. And is the tariffs under IEEPA affecting all of these markets?

Mr. RAGLAND. Yes.

Senator KLOBUCHAR. Mm-hmm. That's what my—

Mr. RAGLAND. Yes.

Senator KLOBUCHAR. So, in my State, about 60 percent of the soybeans are exported, which is pretty high. Do you want to talk

about, just in general, the export market, which we cherish, and not just for soybeans, but corn and other things, why that's such an integral part of American agriculture because we're not going to eat everything we make.

Mr. RAGLAND. Yes. Soybeans are the largest ag export from this country, and it's so vital to the economy, not just of agriculture, but of rural America.

Senator KLOBUCHAR. Mm-hmm.

Mr. RAGLAND. And that gaping hole that is left by the lack of the China involvement right now is going to trickle down to our rural communities and rural economies——

Senator KLOBUCHAR. Mm-hmm.

Mr. RAGLAND [continuing]. And have a very detrimental impact because rural America agriculture is the backbone of rural America.

Senator KLOBUCHAR. Right. I think we make about 20 percent more than we use here, and that is what allows us to keep going and why this is such, as my farmer called it, a perfect storm of ugly. Thank you.

Mr. RAGLAND. Thanks.

Senator GRASSLEY. Senator Britt is next, but I hope we can keep this hearing on [off mic] competition and price transparency. Go ahead, Senator Britt.

Senator BRITT. Thank you. Mr. Chairman, thank you for holding this hearing on this critical and timely issue.

Agriculture is the bedrock of Alabama's economy. So, 1 in 5 jobs in our State are tied to the agriculture industry. I am so proud of our farmers and what they do, knowing that they feed and clothe people, not just coast to coast, but across the world, you know, ranking in the top States in the country, Alabama does, when it comes to poultry, when it comes to catfish, peanuts, cotton, and we are really proud of the work that our farmers do. And Alabama farmers are acutely familiar, though, with the impact of skyrocketing input costs and what that's done on the bottom line. When we look at, like, the last 4 years, knowing that input costs, I mean, have gone up across the board, but that our agriculture community has been hit the hardest, and just knowing that farmers are experiencing record-breaking yields, but yet losing hundreds of dollars an acre. And so, when you try to square these things up, you know that we have to do something. In fact, based on historical yields, every major row crop, from peanuts to cotton to soybeans, will be produced at a loss in 2025.

And so, food security is national security. We say that all the time, but we also know that our agriculture community and our farmers are the bedrock of our rural communities, and if farmers are not thriving, our rural communities are not either, and so there is so much at stake in making sure that we get this right. There are real concerns with the limited number of companies that provide seed, fertilizer, and crop protection products to our farmers, but that consolidation doesn't stop with inputs. We also see the same consolidation in packers, in equipment manufacturers, and in farms to a certain extent. Crop input suppliers, manufacturers, and farmers have generally been forced to grow larger to achieve econo-

mies of scale and increase productivity while attempting to decrease costs.

I want to start with Mr. LaVigne. It's clear that the primary driver of consolidation across the industry is a desire to lower costs. We've seen the consolidation, but instead of prices going down for our farmers, we've actually seen the opposite. Can you speak to some of the outside pressures that have prevented the industry from achieving true economies of scale?

Mr. LAVIGNE. Senator Britt, thank you for that question very much. As we've continued to innovate in the agriculture industry, especially on the seed side, the cost of the regulatory compliance, especially in the GM or the biotech arena, has increased dramatically, and working with the grain industry to ensure that the markets that we export to, or our farmers export to, are open and have transparent processes to review those new products that come to market has been extreme. We've seen that in China, and we share the Chairman's comments that we hope to see good news come out of that this week because we were supposed to have those approvals in a phase one deal with China, and now we don't have those. So, the regulatory costs have become extremely high and challenging as we try to bring new products to market.

But I think we've got several regulations in place that are out of date. We have a very strong safety record with the production of new varieties and biotech traits. Over the last 30 years under the Coordinated Framework, that has not evolved. We've not changed that process to make it more efficient for new companies to come into the marketplace as well as new products, and it's become harder and less science-based. The same with new varieties. As we look at, as John mentioned, gene editing as a tool, how is FDA, EPA, and USDA going to manage those policies coming into the marketplace? If they're too burdensome, it will be restricted to large companies that can afford the regulatory process.

Senator BRITT. Thank you so much for that, and I want to stay on that theme. Look, I've been encouraged by many of the things that Administrator Zeldin has done and the things he is looking at doing in the future. My question, Mr. Rosenbusch, is, in what ways do Federal regulations impact your member's companies' ability to bring innovation and affordable products to market?

Mr. ROSENBUSCH. Thank you, Senator Britt, for that outstanding question because it is a huge impact on our manufacturers that are wanting to innovate and bring new products or even grow supply domestically. As we look to expand mining operations or build a new ammonia plant, you've got environmental permitting that needs to be streamlined. You also have new products. That you know, it's difficult to know where they get regulated, and so as you think about some bio-stimulant products that we're looking at or even tools that help nitrogen be more efficient, getting through the process at EPA or ensuring that it's regulated to the State level, which is where most fertilizer is regulated, is critical to giving farmers additional tools, especially in these difficult market times.

Senator BRITT. Thank you so much. Thank you, Mr. Chairman.
Chairman GRASSLEY. Senator Booker.

Senator BOOKER. Mr. Chairman, as always, I'm grateful for the deference. I want to thank all the witnesses. Your testimony was very, I would say, frankly, invaluable.

Mr. Latham, I'd like to start perhaps with a question for you. Despite two court orders in 2020 and 2024 banning dicamba use because of its damage to neighboring farms, causing millions of acres of crop loss, the Trump EPA, headed by a former industry lobbyist, recently proposed to reauthorize the herbicide. What impact would it have on your rural community and the farmers that you serve if EPA again approves dicamba for over-the-top use?

Mr. LATHAM. Yes. Thank you very much for the question, Senator Booker. I, frankly, believe, I mean, we've seen enough issues that I think the technology is good and is needed because we need to be able to fight against weed resistance, but yet over-the-top causes so many issues that I don't think that it should be approved for over-the-top use.

Senator BOOKER. That's great, because if it was, what would happen to the communities if it was again approved for over-the-top use?

Mr. LATHAM. I mean, unfortunately, we've seen volatilization, we've seen drift into other crops, and, you know, and vineyards and different things, so it's become an issue in rural areas.

Senator BOOKER. So, knowing what you know, what you just stated about how harmful it is and would be, as a practical manner, if it's once again approved, would your seed company have any discretion in whether or not to sell dicamba-tolerant seeds?

Mr. LATHAM. You know, unfortunately, probably with the rebates, we would probably have to sell it to be able to make our rebates, unfortunately.

Senator BOOKER. I mean, that seems stunning to me that something that you know should not be used in this way, but just to stay competitive in the market, you would have to sell it. Does that strike you as indicative of free market capitalism?

Mr. LATHAM. It does not, and I don't like it either. I mean, I think we should be able to sell what our customers want and the best value for them.

Senator BOOKER. Yes, and it really strikes me as not just an assault on free market capitalism, but something almost akin to an authoritarian system where you're told what you have to do, what you have to plant, what chemicals you have to use, and that's something that is very un-American to me. Would you agree?

Mr. LATHAM. I agree.

Senator BOOKER. Dr. Moss, I'm going to soon be introducing legislation to not only require—excuse me—not only place a moratorium on any new Big Ag mergers, but also require the DOJ to do a lookback at the biggest mergers over the last 20 years in the food and agricultural sectors to unwind any mergers that the DOJ finds caused material harm to competition, or to farmers, or to workers or consumers. Dr. Moss, do you think that this type of lookback would be beneficial, and if it was conducted, do you expect that many of the previously approved mergers would be found to have caused material harm?

Dr. MOSS. Thank you, Senator Booker, for that really good question. Yes, I think the value of retrospective studies for con-

summated mergers is really critical and invaluable. We in the economics community have agitated and urged and encouraged enforcers to spend more time doing lookbacks. Of course, they're resource intensive, and I know there are a number of pieces of legislation that would fund those types of efforts. I think at the stage we are at in food and ag, with the high levels of concentration and demonstrable evidence of high prices and slower innovation, the lookbacks would be really important. Ultimately, it's really up to the agencies to enforce very strong structural presumption against highly concentrative mergers. Unfortunately, we're still not there, and in the Dow-DuPont and the Bayer-Monsanto mergers, those structural presumptions for high concentration did not get a lot of attention, and now we're paying the price for that.

Senator BOOKER. I mean, we consumers are paying the price for it, but our farmers are paying a tremendous price as this concentration of these very powerful companies, who now, frankly, thanks to Citizens United, poured millions and millions of dollars advocating for their mergers down here in Washington, but the real people being harmed are consumers, but, frankly, are our farmers themselves. And that brings up a final question, and I'm hoping Noah, I really appreciated your testimony, but given the extreme consolidation within America's agricultural industry, do you have any flexibility to purchase seeds or fertilizers from firms other than the Big Four?

Mr. COPPESS. Thank you for the question, Mr. Booker. We have retail locations that serve the needs for the fertilizer. We don't have the on-farm storage to handle some of those products. It's unclear often who the wholesale manufacturer is for that product, but you can tell when you go from retail to retail to retail and the price is the same, that we're coming from the same place.

Senator BOOKER. Thank you. As the Chairman knows, I spent a lot of time in Iowa and met a lot of farmers from across the political spectrum. This gentleman here moved me when he said five generations on his farm, and I still remember sitting with farmers who still had that original deed going back to the 1800's and the pride of every generation being able to not just make a living, but raise their families, and strengthen their communities, and provide for American hunger and demand, and suddenly, the economics that worked for five generations just barely add up. There's a nobility, sir, about what you do for America. You are great patriots, and I know how much you care about American farmers, sir. So, I'm really hoping we can find some bipartisan work to do together and keep people, like Noah and his family, at the center of our thought process because we can do something. This is not inevitable. This is un-American. This is a perversion of the free market. If we give them a chance to compete, I promise you that family will have another five generations of success on their farm.

Chairman GRASSLEY [off mic]. Senator Moody.

Senator MOODY. Thank you, Mr. Chairman, for holding this important hearing. I don't know that many people across the country have an understanding of how American agriculture touches not only their everyday lives, but their security. And I think this hearing is so important, whether they live in Iowa or Florida's heartland, which is where I am from, Plant City, Florida, the winter

strawberry capital of the world—proud to hail from them from there—and also now represent Florida as their newest U.S. Senator. But agriculture is so important to our cities and States, indeed our Nation, and if there is one takeaway from everything that we're hearing and what every witness, I think, would agree with is that our food supply chain, its success, its security, is a matter of national security.

COVID-19 really put this into focus for us as a country. For a long time, we never really thought about food, where it came from, many people, but then suddenly we were facing shortages in, certainly, many areas—PPE, other products—and we had to start looking to China. So, the same country that was responsible for COVID, we then had to import products from them to protect Americans. We faced medicinal shortages. Where did we have to look? China. I mean, there were so many places when it came down to a crisis point that we had to go back to our foreign adversaries when we determined we had weaknesses in our supply chain, and there is risk that comes with relying on a foreign country for critical supplies.

Corporations, over time, have focused more and more on lowering costs by offshoring, relying on foreign inputs, minimizing their inventories, and we're now seeing how that affected jobs here in America, certainly. And there's interest in making sure we have fair markets, both domestically and internationally, but we can't lose focus of the effects of that on our domestic supply and security and America's interest, and it took that one pressure test in 2020 to see how vulnerable we are now.

So, one event can jeopardize our access to PPE, formula for infants, essential medicine, so imagine how important it is for American agriculture to prosper and be resilient so that we have a food supply that withstands foreign interference. Florida is a big part of that. Not many people think of agriculture when they think of Florida. They think of flamingos, beaches, weather, all kinds of things, but they don't think of agriculture, but it is truly the lifeblood of our Nation's agriculture. So much of the supply chain that goes to supporting growth in our farms comes from Florida. When it comes to phosphate and the natural resources we need to put food on the table, Florida leads the way, and truly Florida feeds the world in that sense.

It's in the best interest of American farmers in our State and our country to pursue a balanced approach. That is one that unleashes the full potential of American mineral production and American products that support agriculture and our food supply at the same time, ensuring we have a fair global market supply. There is no question that we must fortify our domestic food supply chain, and that starts with shoring up American products that are necessary to sustain a critical base of domestic food production. The industry that feeds us, that is life sustaining, is much bigger than any economic impact statistic, and we should take every step we can to make it more resilient. Securing the supply chain is a matter of national security, and if American agriculture stumbles, if fertilizer production is overburdened and neglected, our adversaries profit. We will become more and more reliant on those adversaries. I hope to avoid all conflicts. I think that should be every American's inter-

est, but should a conflict occur, we will start weakened at the gate if we rely on our adversaries for food. We don't need the Art of the War to tell us that that is common sense.

I want to start with and ask a former national FFA president, which I have great respect for being from Plant City and from FFA, Mr. Rosenbusch. Thank you for being here. Is phosphate essential to growing food?

Mr. ROSENBUSCH. Well, thank you, Senator, for that question, and Plant City has had more national FFA officers than any other city in the United States, so congratulations on that.

Senator MOODY. I didn't know that. You just taught me something.

Mr. ROSENBUSCH. Yes, you do.

Senator MOODY. Go, Plant City.

Mr. ROSENBUSCH. Yes. Phosphate is one of the critical minerals. You cannot grow half the world's food on this planet without phosphate, and, of course, as you know, Florida is the center of that phosphate production, and we have tremendous opportunities in this country to expand if we can remove some of the regulatory burden around mining and manufacturing.

Senator MOODY. And ahead of the United States in terms of natural reserves—China, Russia—so if, in fact, we do not support and ensure that we have domestic production, we will become more and more reliant on China and Russia. Is that correct?

Mr. ROSENBUSCH. Absolutely, and, Senator, China has restricted those exports, and they produce 40 percent of phosphates, which is one of the nutrients that's really challenging growers right now. And frankly speaking, one of the reasons they're doing so is to invest in lithium phosphate battery production, and so they definitely have policies that are impacting our growers here.

Chairman GRASSLEY. Senator Welch.

Senator MOODY. At the same time—if I might just finish this one question, Mr. Chairman—

Chairman GRASSLEY. Yes.

Senator MOODY. At the same time that we're making sure policies are supporting American growers and American products that support those growers, in order to keep input costs low for our farmers, we also have to ensure there's a fair global market. Is that correct?

Mr. ROSENBUSCH. Yes, Senator.

Senator MOODY. All right. Thank you, sir.

Chairman GRASSLEY. Thank you. Senator Welch.

Senator WELCH. Thank you very much. I missed some of the testimony, but I have reviewed it and saw some of it. I just want to start with Mr. Coppess and Mr. Latham, and I also want to say to us, much of what the farm community is facing is a result of policies that have been allowed to take place by this Congress, and we all revere the hard work of our farmers, but we've got to do some work of our own and address these policies.

Both of you talked about the high input cost, and what I understand is that it used to be about 10 bucks a bushel a few years ago. It is now \$11 or \$12. The selling price used to be \$13 or \$14 a bushel, and it's now about 10 bucks a bushel. Is that right? So, you're losing money on every bushel, right? And of course you lost

markets. We sold \$12 billion to China. How many bushels of soybeans have you sold, either of you, to China this year?

Mr. COPPESS. Well, when I drop it off, I'm not sure exactly where it's headed, but to my knowledge, we haven't sold very many.

Senator WELCH. None.

Mr. COPPESS. Right.

Senator WELCH. The market is absolutely destroyed, and that is directly a result of the tariffs. So, you have more patience than I do about these tariffs, but this is killing these guys, and we've got to acknowledge that and get their markets back. There is discussion right now about taking some of that tariff money and sending it to farmers, and God knows I support getting some aid to farmers, but let me ask you this question. Do the soybean and corn farmers in Iowa, would they prefer to work hard and sell their product to a market or get a government handout?

Mr. COPPESS. Thank you for the question. We don't want to live by the Government's hand. We're fine being the tip of the sword if we can correct the greater problems and have a better long-term future, okay?

Senator WELCH. Okay, but the point—

Mr. COPPESS. We're okay with that, but—

Senator WELCH [continuing]. Is you want to be self-reliant. You want to sell. You want to produce. You want to work hard. You don't want a government handout, right?

Mr. LATHAM. Absolutely.

Mr. COPPESS. We would like to have fair trade.

Senator WELCH. Well, I am totally with you. You've got some supplemental income in your State on agricultural land. It's wind turbines, right? Those help the farmers?

Mr. COPPESS. We have wind turbines in our State. It's a discussion amongst different landowners whether it's a positive or negative thing.

Senator WELCH. Okay, but the farmer makes the decision. If we as a Congress take away the help for wind, that takes away some income for farmers. Is that correct or not?

Mr. COPPESS. On the farmland that has wind turbines, that would be correct.

Senator WELCH. Right, and, you know and what I know, we have dairy. That's our big farming in Vermont. Farmers are good at a lot of things, but one of the things they're astonishing at is fixing things. A headlight goes wrong on their tractor, they fix it, right? Something goes wrong, you don't have the right to repair your equipment and it costs a ton, and sometimes you lose production time because your tractor's down and you got to wait for the dealer to come out. I am introducing today a Right to Repair. So, if you buy a tractor—what do they cost, \$250,000 now—you can fix it.

Mr. LATHAM. Or more.

Senator WELCH. You can turn the screw, or do whatever it is or get the software you need. What's your view on Right to Repair?

Mr. LATHAM. Thank you for the question. The farmer needs an option to either repair himself or go to an independent repair shop if he doesn't have a relationship with his dealership.

Senator WELCH. Well, I agree with that.

Mr. COPPESS. We need that technology.

Senator WELCH. And I want to tell you something. I just came from Vermont. Our farmers across the country—it's Vermont, it's Iowa—you guys all work hard, okay, and you have to face all kinds of things. They're completely beyond your control. The things we've been talking about here—the tariffs, the high input prices, the concentration, so you can't do seeds on your own—those are political decisions. Vermont right now is facing a crisis, our worst drought in 55 years, and our dairy farmers don't have the hay crop and the feed crop. You've got a lot of soybeans that are spilling over. Would you have any problem with USDA buying your soybeans to help us get through the winter and feed our animals in Vermont, one farmer helping another?

Mr. LATHAM. I would have no problem with that, Senator.

Senator WELCH. In fact, you'd like it, right?

Mr. LATHAM. Right.

Senator WELCH. You'd be selling—

Mr. LATHAM. Right.

Senator WELCH. You'd be selling your surplus and helping our Vermont dairy farmers, who are just getting crushed by the drought that's really killed them. Well, I thank you about that. You know, we've got the phosphate, as you mentioned. That's everywhere. 14 percent increase in price in Vermont for our farmers. They have no control over that. We mostly import it from Canada. Is that an input cost that is also going up in Iowa?

Mr. COPPESS. It is. On our farm, we've minimized the use of phosphate down to an absolute necessity where we have to have it.

Senator WELCH. Right. Any—

Mr. COPPESS. It's simply a negative return to—

Senator WELCH. Any thoughts on what I understand is going to be the administration position that we should start importing cattle from Argentina? That going to help out?

Mr. COPPESS. Thank you for the question. On my farm, we have 10 cows. It's a small part of our farm. What I can tell you is I'm not a fan of the Government dramatically changing the price of something we have. I've got a 16-year-old and a 14-year-old that are two cows each into starting their cow herd, and it's a tough day for them to realize the calves they have to sell to go buy more replacement heifers today are worth quite a bit less than they were 2 days ago when they're ready to go to market next week with them. So, that's a tough lesson, but there again, we're not a fan of the Government making those large swings for us.

Senator WELCH. Well, I'm with you. Mr. Chairman, you are our best farmer on the Committee, probably in Congress. You are patient with the President and I respect you for that, but I just want to say that I don't know him like you do, but the tariffs are really hurting us in Vermont. My dairy farmers and this drought, which they don't complain about, it's just something they've got to deal with. We'd love to be able to get some of your surplus, a grain, to help our farmers who lost their crops. So, they can't control the weather, they can't control a lot of things, but we can control some policies that'll make it possible for another five generations to keep going. So, I really appreciate this hearing, and I appreciate your leadership on ag issues, Mr. Chairman. Thank you.

Chairman GRASSLEY. Well, I hope you know, Senator Welch, I've consistently expressed my views to the President's Cabinet about the impact of tariffs. I hear that all the time from Iowans, farmers and non-farmers alike, and I've expressed my views to them a bit.

I'm going continue to ask questions. I don't think anybody's coming back, and just as soon as I get called for this last vote, this will be the end of the meeting, unless somebody comes in that didn't get a first round. So, I'm going to ask Mr. Latham, across corn and soybeans today, are there still contractual or technical barriers that keep you from offering a seed where the competitor's trait stacked alongside another? Could you describe the specific clauses and data obligations?

Mr. LATHAM. Yes. Thank you, Senator, for the question. Yes, there are restrictive rebates that we fall under as an independent seed company, and it happens a lot to farmers as well. But if we use an alternative and if we fall below, let's say it's usually 85 or 90 percent, and we could fall off, basically, a cliff and could lose our whole profitability for the year.

Chairman GRASSLEY. And, Mr. Coppess, farmers report rebate clawbacks, delayed allocations, and audit threats after trying rival products and services. Could you give us some details of the recent incidence where a supplier or retailer used rebate leverage or allocation delays to punish switching?

Mr. COPPESS. Thank you for the question, Senator. Oftentimes, our pricing structure on our farm is the more we buy, the cheaper it gets. I haven't personally experienced a rebate clawback, but it is very clear when we're purchasing products, that the more we buy, the cheaper the product gets, driving us down into, you know, we need to try and stack that to stay profitable limits our options.

Chairman GRASSLEY. Mr. LaVigne, your organization says on its website that your membership includes 85 percent of all private U.S. seed companies operating in the United States, both big and small. Is there a disagreement among your members regarding antitrust and intellectual property issues, laws, and enforcement?

Mr. LAVIGNE. Thank you for that question, Mr. Chairman. We're pretty consistent with respect to intellectual property laws. It's a key pillar for our strategic plan, and it feels like that's where our companies make investments as technology continues to improve and we bring more products to farmers. We also believe very strongly that our members have their own strategies for how they implement intellectual property practices. We don't judge those by the companies. That's not our position as an association. So, whether they choose patents, or PVPs, or licensing, or just trade secrets, those are all tools that all innovators in the U.S. have available to them.

Chairman GRASSLEY. Yes. This question would be to Moss, Rosenbusch, and LaVigne. Only 1 of the 4 largest companies controlling the ag market is U.S. owned. In your opinion, does this represent any national security risk to our country?

Dr. MOSS. Thank you, Chairman. I'm happy to chime in on that. Having a concentrated market with just a few firms operating in that market, or a dominant firm, absolutely represents national security risks. Especially in food and agriculture, we've talked about market power bottlenecks where producers and consumers are at

the behest of a very powerful company in terms of prices paid for commodities and prices paid for food. So, we have to be extra vigilant in food and agriculture to enforce our antitrust laws to ensure that we have competitive markets and the ability for smaller innovative entrants to get in and to have a go of it.

Chairman GRASSLEY. Yes. If you want to add to that or express your own view, I invite the two of you to do that as well.

Mr. LAVIGNE. Thank you again, Mr. Chairman. When we look at this, we obviously have antitrust respect for the U.S. laws and for our own antitrust policies with the association, so we don't have a position with respect to how contracts are done or pricing is done, anything along those lines. From the member standpoint, we want very strong intellectual property rights. We know that the American market is one of the most competitive in the United States, and we would like to continue that process. This is where the innovation in our industry is done, and that's why we're the leaders globally. So, we would like to continue that as we go forward, and, hopefully, that competition continues to stay strong.

Chairman GRASSLEY. Do you have anything to add, Mr. Rosenbusch?

Mr. ROSENBUSCH. Thank you, Chairman Grassley. I would just say that on the fertilizer side, most of the U.S. producers are U.S. owned.

Chairman GRASSLEY. Okay. For you, Mr. Rosenbusch, when a single foreign supplier dominates an essential input, and commerce and ITC-imposed duties that may choke off that source, what specific safeguards would the Fertilizer Institute support to prevent a de facto domestic monopoly and keep farmers supplied?

Mr. ROSENBUSCH. Thank you, Chairman Grassley, for that question. The trade cases that you're referring to, they are complex and have been adjudicated through the International Trade Commission. At the Fertilizer Institute, we have both of those members on both sides of that case, so a wise man once told me, when you have two members on both sides of the issue, go with the member, and so we don't have an official policy on any of those trade remedy cases. I will tell you that there were many factors when that case came forward in 2020 that impacted the market and impacted the supply. A lot of those tons ended up being filled by Saudi Arabia and other countries.

Chairman GRASSLEY. We have some statements here from people that want to get into the record, statements and letters from several groups, including the Iowa Corn Growers Association. I am going to ask unanimous consent that those statements be put in, and there's nobody here to object.

[Laughter.]

[The information appears as submissions for the record.]

Chairman GRASSLEY. Dr. Moss, in plain English, where's the line between licensing that speeds innovation and licensing that walls off rivals, especially for stacked traits? Do you support narrowly tailored measures similar to the fair, reasonable, and nondiscriminatory agreements? If so, why?

Dr. MOSS. Thank you, Chairman Grassley. So, I think two things quickly in response to that question. Antitrust does a very difficult dance with intellectual property law. Our intellectual property laws

are extremely important for spurring incentives to engage in R&D and to innovate products. But as we've seen in the pharmaceutical industry, there can absolutely be trouble ahead when firms use intellectual property rights to shape or to control how competition develops. We've seen that with product topping and generic seeds where generics have been kept out because of small changes in patents and another 20 years of patent protection. So, that's the first answer. The second is, if we do get into the business of standard-setting organizations where the large biotech companies will be needing to figure out what the standards are, it will be a very complex and difficult process, given how much trait stacking there is. And determining what is a fair price for a license, of course, would be even more complex, and that will require a good deal of government oversight, and I would expect it would generate an enormous amount of controversy.

Chairman GRASSLEY. My last question will be to Mr. LaVigne and Dr. Moss. I want to understand why generic, insect-resistant traits haven't materialized despite patent expiration. I understand that there does not appear to be a single generic insect-resistant trait available to growers, notwithstanding frameworks touted as solutions. Why is this the case?

Dr. MOSS. My first response would be, again, the ag-biotech industry has borrowed a page from pharmaceuticals, filing for new patents based on very minor modifications, which then locks in another 20 years of patent protection and the ability to charge monopoly prices. The FTC currently has a case looking into loyalty discounts in pesticides. That is another way to lock farmers into cropping systems and limit the ability of farmers to switch. Lack of interoperability exacerbates this problem. So, we are nowhere near on top of these types of abuses of intellectual property that are really designed to stifle and to control competition.

Chairman GRASSLEY. Mr. LaVigne.

Mr. LAVIGNE. Thank you, Mr. Chairman, and as we look at it, just to reiterate, we're not in the practice of collecting what the practices of the members are or how they license or charge fees. It's against American antitrust law, so I will make comment from the respect that we support products coming to market. This is much more difficult than other chemicals or pharmaceuticals or things along those lines that come to the marketplace after that expiration. You're looking at a lot of products where it may be the BT product, but you're also looking for stacks of other products with that. And then also newer varieties as they come along, is somebody going to want to stack that on a 20-year-old variety that's off patent, or do they want a new variety that is more resistant and has disease resistance in it? So, the plant-breeding process and the track-development process is an evolving process as we go along, and it's not just static. We're not planting the same seed varieties we did 20 years ago. We're trying to bring that newest product to the farmer. The asset has been involved in driving the ag accord to try to give that platform for generics coming to the marketplace, but it's been a challenge, and it's one that we need to continue to work with Congress and work with the administration, EPA, and USDA to try to provide that pathway for companies that choose to go to the generic traits and varieties.

Chairman GRASSLEY. Before I adjourn, I thank all of you for your contribution to this debate, and if you got anything you didn't get a chance to say, we'll take it in writing.

Senator Durbin and I, as well as the entire Committee, would like to thank each witness for taking the time to share their knowledge and expertise.

Written questions can be submitted for the record for 1 week from today, and I'll ask the witnesses to answer and return the questions to the Committee within 2 weeks after you receive them.

Chairman GRASSLEY. Thank you very much. Meeting adjourned.

[Whereupon, at 12:20 p.m., the hearing was adjourned.]

[Additional material submitted for the record follows.]



Thank you, Chairman Grassley, Ranking Member Durbin, and Senate Judiciary Committee, for allowing me to testify on these important issues.

My name is Noah Coppess. My wife Jessica and I farm full-time while also running our own agricultural business in the Stanwood area of Cedar County, Iowa. We have two teenage kids. On our farm we raise commercial corn, seed corn, soybeans and have a small cow herd. In addition to raising our own crops, we do row-crop farming for hire and sell pesticides and fertilizer to our customers. Today, I am here to represent my farm, my customers, my county, and my fellow members of the Iowa Farm Bureau.

There is little doubt that the agricultural sector has experienced significant structural changes in the 21st century, with consolidation emerging as a defining trend. This process has influenced production systems, market dynamics, and policy considerations. Today, just four companies dominate U.S. beef processing (73%), pork (67%), and chicken (54%), while global giants control over 60% of agrochemical and seed markets.

While consolidation can offer benefits, including cost efficiencies and technological adoption - which are critical for meeting global food demand - it also presents challenges, like reduced competition and limited market access for smaller producers and a severe lack of price transparency.

The history of antitrust and agriculture goes back over 100 years to the era of largely unregulated business, dominated by a handful of industry titans. These business heads frequently paired their aggressive business practices with buying out or merging with competitors to establish market domination. The resulting mega-businesses often controlled large swaths of their respective markets and left little or no competition.

As these mega-companies continued to take advantage of both their suppliers and end-use buyers and forced mergers and consolidation by undercutting and pricing out their smaller competition, Congress decided to take action. The Sherman Act, signed into law by President Harrison in 1890 aimed to restore and preserve free competition and markets by outlawing practices that unreasonably restrained trade, combat the monopolization of business, and instill within the federal government the power to bring legal action against trusts. Since then, the Sherman Act has been amended and superseded in part by other pieces of legislation, and remains in effect today as an important tool against restraints of trade that restrict competition unreasonably and monopolization.

In addition to Sherman, the Clayton Act prohibits consolidation when it may "substantially lessen competition" or "tend to create a monopoly." When the Federal Trade Commission (FTC) was established in 1914, it took charge of enforcing antitrust laws, such as those found in the Sherman and Clayton Acts, and others in the same spirit. It's the establishment of the FTC that



fully brings agriculture into focus. After living costs & expenses exploded, coinciding with the outbreak of World War I, President Woodrow Wilson commissioned an FTC investigation into the back-half of the agriculture industry - livestock dealers, the stockyards, and meat packers. What the FTC found and reported on was that there was severe market manipulation and fraud occurring at the hands of a few largely consolidated companies that had slipped through the cracks of regulation under the Sherman and Clayton Acts. After continued pressure and threat of antitrust litigation from the Wilson Administration, the “Big Five” packers agreed to a consent decree which removed them from the vertical pillars of their supply chain, including retail, warehouses, stockyards, and more.

While such a decree was a start, there was still momentum to address agricultural antitrust principals via legislation, resulting in Congress passing the Packers and Stockyards Act (PSA) in 1921. While there was a similar flavor to the preceding Sherman and Clayton Acts, the PSA was much more narrowly tailored to fit the agricultural industry, with the noted intent to “regulate interstate and foreign commerce in livestock, livestock produce, dairy products, poultry, poultry products, and eggs, and for other purposes.” Other related changes over the years include amendments to the Act, such as the expansion of USDA’s jurisdiction over all auction markets in 1958, increasing non-payment protections and requiring bonding from meat packers with livestock purchases totaling \$500,000 or more in a calendar year in 1976, including additional protections for live poultry sellers & contract growers in 1987, and the requirement to perform an annual assessment of the cattle & hog industries in 2000, among many others.

From an inputs side, in the 1980s and 1990s, early mergers established regional monopolies in potash and phosphate, laying the foundation for global market influence. This trend accelerated between 2016 and 2018, when mega-mergers reshaped the competitive landscape. The potash and nitrogen supply was consolidated under fewer entities, while other mergers consolidated other inputs, reducing diversity across the sector.

Reduced competition in potash and nitrogen markets has historically correlated with price rigidity, particularly during supply shocks. The pandemic amplified these vulnerabilities, as concentrated processing capacity triggered sharp price spikes in 2020 and 2021. Today, acquisitions in biological and regenerative inputs point to emerging price differentiation, where environmental attributes command a premium.

Since 2020, Iowa’s row crop economy has seen both ups and downs. Following 2020, a year characterized by both drought and a derecho, 2021 proved to be a much stronger year for corn and soybean returns. With Russia’s invasion of Ukraine, commodity prices spiked, and 2022 also proved to be a strong year for row crop farmer returns.



It isn't only commodity prices that increased since 2020, however. The post-COVID inflationary environment combined with the Russia-Ukraine war caused input prices to skyrocket as domestic and world supply chains adjusted to both shocks.

Then, in 2023, corn and soybean prices fell substantially. In 2024, prices slid further and remained depressed due to large production numbers and even larger USDA estimates. In just two short years, from 2022 to 2024, cash receipts for crop production in Iowa fell by 26%.

Average Iowa cash prices received for corn and soybeans, \$ per bushel, 2020-2024 (Iowa State University Extension and Outreach Ag Decision Maker File A2-11)¹

	2020	2021	2022	2023	2024
Average Corn Price (\$/bu)	\$4.64	\$6.10	\$6.62	\$4.61	\$4.40
Average Soybean Price (\$/bu)	\$11.10	\$13.40	\$14.20	\$12.20	\$9.95

Unfortunately, while farm production inputs increased along with commodity prices, most production costs have barely seen a fraction of the decline. Iowa State University publishes cost of production estimates for crops grown in Iowa. Total input cost per acre has increased from \$688.54/acre in 2020 to \$926.75/acre in 2024. While Labor and Land costs contribute to some of this increase, 66% of this increase is due to the "Machinery" and "Seed, chemicals, etc." categories. The "Seed, chemicals, etc." category includes seed, fertilizer, herbicide, insecticide, insurance, interest, and other costs.

Table 2. Estimated Costs of Crop Production in Iowa, Corn Following Corn, 2020-2025 (Iowa State University Extension and Outreach Ag Decision Maker File A1-20)²

	2020	2021	2022	2023	2024	2025
Machinery	\$128.46	\$126.73	\$146.56	\$202.49	\$187.93	\$194.98
Seed, chemicals, etc.	\$299.79	\$311.84	\$415.55	\$479.49	\$425.60	\$389.35
Labor	\$41.30	\$42.70	\$47.60	\$50.40	\$53.20	\$56.42
Land	\$219.00	\$222.00	\$232.00	\$285.00	\$285.00	\$286.00
Total cost per acre	\$688.54	\$703.28	\$841.70	\$1,017.38	\$951.73	\$926.75
Assumed yield (bu/acre)	182	184	180	185	185	192
Total cost per bushel	\$3.78	\$3.82	\$4.68	\$5.50	\$5.14	\$4.83

Accounting for these costs, USDA reports that net farm income in Iowa fell 53% – from \$14.87 billion in 2022, to \$7.00 billion in 2024.

¹ <https://www.extension.iastate.edu/agdm/crops/html/a2-11.html>

² <https://www.extension.iastate.edu/agdm/crops/html/a1-20.html>



Input prices that follow commodity prices quickly upward but slowly downward raise many questions about the pricing practices of production input suppliers. Given the concentration of fertilizer, seed, and equipment manufacturers, many of those questions turn to the potential pricing implications of that competition.

The potential benefits and costs of concentration in an industry are well documented however, economic studies often find that the benefits from competition outweigh the anticompetitive costs.

Furthermore, concentration enables firm behavior that would not be possible in a less-concentrated industry. For example, The Mosaic Company, one of the world's largest phosphate producers, pushed for and successfully obtained Counter-Vailing Duties (CVD) on phosphate imports from Morocco and Russia during a period of exceptionally high fertilizer prices.

One bright spot we would highlight is that Farm Bureau has reached agreements with five leading agricultural equipment manufacturers to secure farmers' and ranchers' right to repair their tractors and other essential implements.

Farmers have started calling for strengthening antitrust enforcement and expanding USDA's role in assessing merger impacts. We have no doubt that consolidation will continue, shaped by demographic trends, technological requirements, and global trade pressures. The challenge for lawmakers and the ag industry will be to balance efficiency with fairness and resilience. Farmers need lawmakers to promote competition, support farmers, demand transparency, and encourage innovation. This will be essential for building a resilient agricultural system.



Testimony of John Latham
President, Latham Quality, Inc.

Hearing on the U.S. Senate Judiciary Committee:
Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries

Tuesday, October 28, 2025
Dirksen Senate Office Building

Thank you, Chairman Grassley, Senator Durbin, and the Members of the Committee for holding this bipartisan hearing and giving me the opportunity to speak with you today. My name is John Latham, and I'm a third-generation seedsman from Alexander in North Central Iowa. My grandfather Willard Latham started our business in 1947.

Today I own Latham Quality, Inc. with my wife, Shannon, and my brother, Chris Latham. Our independent seed company sells corn, soybeans, and alfalfa seed under the Latham® brand in Iowa, Minnesota, North and South Dakota, Wisconsin, Nebraska, and Illinois. We also operate a soybean production plant and have a corn breeding program.

Independent companies like ours are the lifeblood of rural America because we are connected to the farmer-customers we serve. Independent companies like ours have also been able to offer products better suited for specific geographies than the multinational companies can. Unfortunately, many *independent* companies are going out of business as these *multinational* companies have become more powerful and predatory.

The seed corn industry is 90% controlled by two companies, including their own brands and licensing. Due to this massive consolidation, the price of seed technology has risen sharply since 2021. These higher seed royalty prices are contributing to higher input costs for farmers and forcing many family farms to close.

Prices aren't just increasing for the newest and latest seed technology—they're also rising on older ones that are off-patent or soon will be. One example is NK603, a glyphosate-resistant corn product, which went off patent in 2022. Farmers are being charged the highest royalties ever for this off-patent technology. More than 90% of biotech-traited corn in the United States is glyphosate resistant, so farmers are paying billions of dollars for seed royalties on a trait that has been off patent for three years.

Why? Big-Tech seed companies are manipulating the system that is supposed to allow post-patent competition. Corn breeding companies like ours get post-patent genetics from the

American Type Culture Collection (ATCC) seed library. Although big-tech companies are required to deposit seed samples in the ATCC, they register many corn genetic samples with scrambled codes. This means seed producers cannot use them to produce seed that could be sold at much lower cost. It has become increasingly more difficult – sometimes even impossible – for corn breeding companies like ours to find what we want or need in the ATCC.

For demonstration purposes, let's imagine that patients must pay the highest price from a popular 20-year-old drug that comes off patent. Rather than purchasing it over the counter, patients must buy it exclusively from the original manufacturer – under the original brand name – because the formula or materials were unknown. Fortunately, we can purchase many off-patent pills today for much less than the brand name prescription drugs.

In the seed world, when a corn trait patent expires, big-tech companies prevent the rest of the industry from producing low-cost generic versions. Off-patent traits remain locked up, so farmers keep paying high “brand” royalties on older technology. This is what happens when a few companies hold the market power, so they're effectively writing all the rules of engagement for an industry. These companies can monopolize a technology well beyond the 20-year patent by using restrictive licensing agreements and stacking components on products to prevent competition.

Independent companies suffer. Farmers suffer. Consumers suffer.

As difficult as it has been for independent seed companies across America, I believe we have been hit harder than most. Latham started corn breeding in 2020 with the belief that we could create niche corn products to help our customers fight corn diseases like Tar Spot. Tar Spot in corn is a very prevalent disease in Illinois, Iowa, Wisconsin and Minnesota. We have had great success in finding Tar Spot-resistant products and have two of these products in our lineup today.

That seems pretty innocent, right? We focused on creating products that weren't available from our suppliers, but our modest corn breeding program was met with anger from our leading big ag provider. After a heated discussion about our corn breeding program in April 2022, our supplier told us that Latham's corn products would have the largest price increase in our company history. Every technology—even older technologies that had gone off patent or would soon go off patent—was increased.

Almost 80% of Latham's sales in 2022 were in one older but viable, double-stacked technology. Our price for this technology was increased more than any other. That fall we were forced to raise our prices drastically for the second consecutive year, and then that same company from whom we licensed that technology, attacked us at the farmgate.

That attack made it financially impossible for us to continue investing in corn breeding, which I believe is exactly the result they were seeking. If a small breeding program like Latham's is met with this type of predatory behavior from a company with such market power, how can new corn breeding programs enter the marketplace? The biggest losers from this behavior are U.S. farmers who don't have choices to fight corn diseases or find less expensive options in areas that don't need expensive trait technologies.

To make it even more challenging for independent seed companies to compete, we must disclose our trade secrets to our competitors.

Imagine having to license most of your technology from the same company that is your largest competitor. Our largest competitor drives up our prices, but we are required to give this competitor all our customer information, including the products our customers plant. We also are required to give them all our financial information, as well as get all our customers to sign technology stewardship agreements that make sure that the farmer doesn't sue that technology provider.

And then there's the financial penalties for selling seeds from vendors other than the dominant companies.

We are subject to restrictive rebates that require us to stay loyal to that technology provider. The penalties are so steep that some years we could save money by buying seed and destroying it. If that isn't bad enough, the vendors dangle "discretionary" funds (off the record, of course) that can be taken away at any time. Many times this funding can mean the difference between profit and loss for an independent company.

Time is also on the multinational trait providers' side. Independent companies are forced to pay technology providers before most of their farmer-customers order seed and before the seed is delivered. Independent companies aren't given final pricing until after their production is in the ground for the year. Our 2026 products are planted before we know our costs from our suppliers, making independent companies even more captive in this market.

Can you imagine a business where a company produces a product without knowing the price you'll have to sell it for? Or being in a business where leftover inventory rises in cost year after year? These terms are so one-sided because of this massive consolidation. So few companies control the industry that the monopolists write the rules.

From 2021 to 2025, our technology royalties have risen by 40% to 80% even on off-patent technologies. Remember, when these trait royalties rise, costs to farmers rise too – not just for the new products – but also for the unsold seed from prior years. So, a product produced in 2021 (even with 15-year old genetics and a 20-year old trait patent) is increasing in price over \$50 per unit. Farmers are often not getting innovation or new value for their money. Independent companies that produced the seed are forced to sell it to farmers at much higher prices than when it was first produced. It's like trying to sell an iPhone 8 for the same price as a new iPhone 17. Can you imagine if this happened in the cellular industry? I can't either, but this is the reality in a consolidated seed industry – and it has led to warehouses filled with unsellable corn seed inventory for independent companies and higher prices for farmers.

Input prices for farmers have risen so much that they can't be profitable on \$4 corn and \$10 soybeans. These are the same commodity prices as in 2007—but production costs for farmers were much less—allowing them to be profitable. Small- and medium-sized farmers are paying the highest price in a consolidated industry and are the most vulnerable. They also tend to be younger and minority farmers—the next generation we need to feed the world.

Finally, I want to emphasize that the lack of competition and diversity in the seed industry poses a national security threat. With two companies controlling 90% of corn genetics and traits, we lose the genetic diversity needed to withstand diseases or even potential bioterror attacks. Genetic diversity is food security.

I appreciate the opportunity to tell our story and the story of other independent seed companies. I do so at great personal risk, but I believe our family's story – and the story of independent, family-owned seed companies – must be told. I look forward to taking your questions.

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Written Testimony

Andrew W. LaVigne
President and CEO
American Seed Trade Association

Senate Judiciary Committee
Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries
October 28, 2025

Thank you, Chairman Grassley, Ranking Member Durbin, and members of the Committee for the opportunity to provide testimony during today's hearing. My name is Andy LaVigne, and I am honored to appear before you today in my role as President and CEO of the American Seed Trade Association (ASTA).

BACKGROUND

Founded in 1883, ASTA is one of the oldest trade organizations in the United States. Its membership consists of nearly 700 companies involved in seed production and distribution, plant breeding, biotechnology, and related industries in North America. ASTA is the leading voice, representing the U.S. seed sector, on the research, development, marketing, and movement of seed throughout the world. ASTA members produce better seed to grow better crops for a better quality of life. From alfalfa to zucchini, and from conventional to organic to biotechnology seed production systems, our membership includes a wide range of seed producers. In fact, ninety-five percent of ASTA's active members are small businesses as defined by the Small Business Administration.

Seed producers are proud of their role as the first step in the agriculture value chain that feeds, fuels, and clothes our world. Season after season, our members provide high-quality seed choices for farmers, providing the foundation for a bountiful harvest.

As part of their production planning, each planting season farmers choose seeds improved through plant breeding, biotechnology, and seed treatments. Our members' investment ensures that farmers have access to reliable, resilient seed varieties tailored to local growing conditions, helping to reduce risk and boost crop productivity. By supporting farmers at the start of the production cycle, seed producers strengthen rural economies, contribute to national food security, and help American farmers remain the most productive in the world.

SEED PRODUCTION

The development and production of seed begins with advanced research and breeding programs, proceeds with production practices ranging from large-scale crops to hand-

pollinated varieties, moves to the harvest of the seed crops, and concludes with conditioning, treatment, and testing of seed quality and purity prior to commercial sale.

The process from research to final sale may take place in multiple countries, as companies rely on different regions' climates and leverage multiple growing seasons per year to accelerate the rate of both research and seed production activities.

Even with this highly efficient and optimized process, it can take 8 to 10 years to commercialize new, improved seeds. In many cases, seed companies, informed by their customers' needs and trends in the food value chain, begin to develop new breeding strategies years in advance of anticipated seed production and sale. Plant breeding and seed improvement is an ongoing, iterative process that continually responds to shifting market demands, broader economic conditions, environmental fluctuations, and evolving agricultural pests and plant diseases.

In addition to their investments in research, development, and production, seed companies developing biotech seed also bear the costs of domestic and international regulatory compliance. A study in 2022 estimates the cost and time of bringing a biotech variety to market at roughly \$115 million and over 16 years.¹ Almost 40 percent of the cost is tied to regulatory compliance, a tremendous barrier to entry for small and medium sized businesses as well as for biotech varieties in smaller acreage crops, where the differences in economies of scale make it harder to recoup the investment.

In export markets, particularly for the subset of biotech crops, the seed industry faces severe constraints posed by non-tariff trade barriers, including countries that deliberately use their regulatory system to stymie American seed innovation.

The U.S. seed sector has a long history of successfully delivering seed choice and ensuring seed performance for America's farmers, gardeners, and landscape managers, ensuring the best seed is available to meet the needs of the wide range of environments, soil types, and management practices. Just like other agricultural producers, seed producers shoulder the same pressures of inflation and other macroeconomic drivers. Those factors increase costs along the value chain – from inputs, to labor, to transportation, to land.

Furthermore, seed companies often make seed planting and production decisions two or more growing seasons in advance of seed sales. Despite the long lead time of seed

¹ AgbiolInvestor, "Time and Cost: A Study on the Discovery, Development and Authorisation of a New Biotechnology-derived Genetic Trait," April 2022, accessed via "AgbiolInvestor–CropLife International – Trait R&D Study," CropLife International, <https://croplife.org/wp-content/uploads/2022/05/AgbiolInvestor-Trait-RD-Branded-Report-Final-20220512.pdf>. (croplife.org)

production, our members have consistently met the evolving needs of their farmer customers by offering choice in seed.

Across all varieties, international trade and global movement of seed is critical to the U.S. seed industry to efficiently develop and commercialize improved varieties for U.S. farmers. The continued escalation of tariffs on seed poses a unique challenge. Tomato seed, for example, can cross 6 or 7 different international borders from R&D to multiplication to cleaning and packaging before it is sold to farmers. For each crossing, a tariff may be levied on that same seed, burdening the seed producer multiple times. Those costs are highly significant and disproportionately hurt small businesses in the U.S. seed sector.

OPPORTUNITIES FOR THE FUTURE

Our industry believes there is a path forward to alleviate some of the pressures that both farmers and seed producers currently face.

First, ASTA, in partnership with other associations and the U.S. government, is advocating both domestically and internationally for risk-proportionate, science-based regulatory reform. Reforms should right-size regulatory compliance processes and their associated costs for companies of all sizes. Our advocacy applies to biotech crops, and just as importantly to applications of plant breeding innovation. Reform is needed to ensure that the rapid pace of scientific innovation is not hampered by unjustified regulatory barriers.

Modernizing policies and reforming regulatory approaches both in the U.S. and foreign markets can reduce these unjustified barriers to entry. With fewer roadblocks comes greater innovation, enabling growth of new seed companies as well as growth and diversification of improved seeds commercially available and accessible to U.S. farmers.

Second, the United States has a long history and tradition of entrepreneurship founded on successful systems of technology transfer from the public sector to the private sector. Decades of public and private research, including USDA Economic Research Service studies, show that genetic improvements in seed have been a key driver of yield gains. The global competitiveness of the U.S. seed sector, farmers, and food value chain is built on sustained investment in U.S. public sector research, including investments in our land grant universities, research institutions, and the USDA. This public investment is complemented by private sector investment. On average, ASTA's members reinvest substantial portions of annual revenue in research, development, and production, enabling continuous innovation and genetic improvement in seed and plant varieties.

Especially true for low acreage crops, public and private partnerships are essential in deploying the strengths of both sectors to bring improved varieties to the marketplace. Strong intellectual property protection encourages investment in new products and promotes continued innovation that has been critical to improving seed to support on-farm resilience in recent years.

Seed producers work tirelessly to provide farmers access to the most innovative seed to increase yield, combat pests and disease, address environmental challenges, and meet consumer demand. The expertise and innovation generated by our member companies drive agricultural progress, including through investment in rural communities to spur economic development. We recognize the important role we serve supporting American farmers in providing for a growing global population and a more prosperous America. Working with our farmer partners in the field, and informing science-based, risk-proportionate policies that unleash American innovation, the U.S. seed sector is up to the task.

CONCLUSION

From seed to table, the entire agricultural value chain is navigating pressures from the brunt of inflation and economic uncertainty. We know that farmers are weathering these challenges head-on to continue to feed, fuel, and clothe the world. Facing these same challenges, seed producers are committed to delivering the high-quality, professionally produced seed U.S. farmers expect, season after season. When farmers and other growers buy a bag of seed, they are investing in yield potential, resilience to pests and weather, and the ability to produce more with less. They are investing in better seed for better crops for a better quality of life.

Thank you, Chairman Grassley and Ranking Member Durbin, for the invitation to speak today on behalf of America's seed producers. I am happy to answer any questions you and other members of the Committee might have.



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**Pressure Cooker:
Competition Issues in the Seed & Fertilizer Industries**

**Testimony of Dr. Diana Moss
Vice President & Director of Competition Policy
Progressive Policy Institute**

**Before the United States Senate
Committee on the Judiciary**

October 28, 2025

Thank you Chairman Grassley, Ranking Member Durbin, and Members of the committee. It is an honor to be here today to lend the Progressive Policy Institute's (PPI's) perspective to competition issues in the seed and fertilizer industries. PPI is a catalyst for policy innovation and advocates for competition policies that support consumers and workers, with pragmatic proposals that champion the economic prospects and outlook for working Americans.¹ PPI applauds Senate lawmakers for turning their attention to the question of competition in critical agricultural input markets and how uncompetitive markets harm American farmers, working families, and innovation.

I. High Input Costs Put the Squeeze on U.S. Farmers and Consumers

Agricultural supply chains for crops such as corn, cotton, soybeans, canola, and vegetables are increasingly complex. They can vary in scope from small systems to large networks. Farmers in these supply chains often share one thing in common – they are reliant on agricultural inputs to produce and distribute their commodities. These inputs can be costly, often accounting for a significant portion of a grower's cost of production.

Agricultural input costs are driven by the prices paid by farmers to suppliers for fertilizers, seed technologies conventional and genetically modified (GM) (or "transgenic") seed containing genetic traits for herbicide tolerance or insect resistance, agrochemicals, equipment, and digital farming technologies and systems. These costs affect both small and large agricultural supply chains and vary with plantings, weather, soils, and natural resources.

Input costs for crop farmers are affected by any number of factors, including: (1) the dynamics of supply and demand (i.e., surpluses and shortages), (2) consolidation and anticompetitive business practices in concentrated markets that raise prices to businesses and consumers, (3) shocks to regional, national, and global supply chains resulting from weather, disease, and political events; and (4) U.S. trade policies such as import tariffs and retaliatory responses to those policies by other countries.

¹ For more information, please see www.progressivepolicy.org.



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Regardless of the source, two major stakeholder groups bear the brunt of higher input costs for fertilizers and seeds: U.S. farmers and consumers. Perversely, farmers and consumers represent the two groups with the least amount of economic power in the markets that make up the food and agricultural supply chains. For example, farmers pay steep technology fees for GM seed for corn, cotton, soybeans, and canola, and high prices for fertilizers, with little choice in suppliers and cropping systems.

High input prices squeeze farm margins. The cost of intermediate inputs such as seed, pesticides, and fertilizers and soil treatments accounted for between 36-39% of total intermediate production costs for U.S. farmers between 2016-2025.² The average price farmers paid for seed rose by 270% between 1990-2020.³ For crops planted predominately with GM seed, such as corn, soybeans, and cotton, seed prices rose by an average of 463%.⁴ These price increases compared with commodity price inflation of 56% over the same period.⁵

Between 2016-2024, the all-farm index for the prices farmers receive for their commodities such as crops and livestock has remained consistently *below* the index for prices paid by farmers for feed, fuels, seeds, and fertilizers.⁶ This gap is *even bigger* for the crop farm index.⁷ Farmers also have little price transparency due to the practice of rolling seed technology prices into the total price of GM crop seed, making it harder to compare seed costs over time. Farmers also see lower quality as previous generations of technology begin to lose their effectiveness.

At the other end of the supply chains are consumers. Based on 2023 U.S. Census data, consumers spend 13% of their limited budgets on food.⁸ Food is the third largest budget item for the average U.S. consumer, behind housing and transportation. As measured by the volume of internet searches, public interest in U.S. food prices stepped up in mid-2017, with another marked surge in early 2022.⁹ Concern has been rising even since. Consumers are heavily affected by food price inflation. And as they grapple with the high

² USDA-Economic Research Service (ERS), Farm Income and Wealth Statistics - Production expenses, updated Sep. 9, 2025, https://data.ers.usda.gov/reports.aspx?ID=4059#P02f2458c0f2342aca5b31bd4a78131cb_3_xA.

³ James M. MacDonald, Xiao Dong, and Keith O. Fuglie, *Concentration and Competition in U.S. Agribusiness*, USDA-ERS, https://ers.usda.gov/sites/default/files/_laserfiche/publications/106795/EIB-256.pdf?v=43762.

⁴ *Id.*

⁵ *Id.*

⁶ USDA-National Agricultural Statistics Service (NASS), Prices Paid and Received: All Farm Index by Month, US, https://www.nass.usda.gov/Charts_and_Maps/Agricultural_Prices/allprpd.php.

⁷ USDA-NASS, Prices Paid and Received: Crop Farm Index by Month, US, https://www.nass.usda.gov/Charts_and_Maps/Agricultural_Prices/cropfarm.php.

⁸ Diana L. Moss, *Can Antitrust Be Doing More to Protect Consumers?* Progressive Policy Institute, Dec. 2024, <https://www.progressivepolicy.org/wp-content/uploads/2024/12/PPI-Antitrust-Consumers-1210.pdf>.

⁹ <https://trends.google.com/trends?geo=US&hl=en-US>.



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cost of living, only 14% said in a recent poll that they are not concerned at all about food prices.¹⁰

Both farmers and consumers are now well-versed in the fallout from shocks to the agriculture and food supply chains. The collapse of the beef packing supply chain during the COVID-19 pandemic, resulting in empty meat cases and high beef prices.¹¹ This exposed the grim reality that highly concentrated markets in supply chains cause “market power bottlenecks,” threatening their stability and resiliency when subjected to an outside shock.

II. GM Seed Markets are Highly Concentrated With Significant Price Increases

The impact of technology in increasing yields in the U.S. and globally is reflected in the prevalence of U.S. crop acreage planted with GM crop seed. Since about 2013, the percentage of acreage planted with GM crop seed for corn, cotton, soybean, and canola has exceeded 90%.¹² Traits that are incorporated into GM crop seed, which carry significant intellectual property protections, confer a variety of characteristics on plants, such as herbicide tolerance, insect resistance, and other functional attributes (e.g., high oleic soybeans). The complexity of “trait profiles,” or combinations of patented genetic events through “stacking,” has increased over time, largely to combat growing resistance of weeds and insects to an aging mode of action. In 2019, 80% of corn acres and 89% of cotton acres were planted with stacked varieties.¹³

A. The Current Landscape in Ag-Biotech

The three large agricultural biotechnology firms that dominate the genetic traits, GM seed, agrochemical, and digital farming markets are the product of three mergers. These mergers — Monsanto-Bayer (now Bayer), Dow-DuPont (now Corteva), and Syngenta-ChemChina (now Syngenta) — occurred in quick succession between 2016-2018. Before them, the then six largest agricultural biotechnology firms were formed from two previous waves of consolidation.¹⁴ Between 1985-2000, for example, about 75% of the small to medium-size enterprises engaged in biotechnology research were acquired by

¹⁰ Chris Clark, *Grocery prices a major stress for majority of Americans — with only 14% able to say they’re not worried at all*, Yahoo Finance, Sep. 20, 2025, <https://finance.yahoo.com/news/grocery-prices-major-stress-majority-110000472.html>.

¹¹ Sanya Mansoor, *‘The Food Supply Chain Is Breaking,’ Tyson Foods Warns of Meat Shortage as Plants Close Due to COVID-19*, Apr. 26, 2020, <https://time.com/5827631/tyson-foods-meat-shortage/>; and Taylor Telford, Kimberly Kindy and Jacob Bogage, *and Trump orders meat plants to stay open in pandemic*, Apr. 29, 2020, <https://www.washingtonpost.com/business/2020/04/28/trump-meat-plants-dpa/>.

¹² MacDonald, et al., *supra* note 3.

¹³ USDA-NASS, *Acreage* (June 30, 2001 and June 30, 2019).

<https://downloads.usda.library.cornell.edu/usdaesmis/files/f098zb09z/0k225n39n/jw827p632/acrg0619.pdf>.

¹⁴ See Diana L. Moss, *Competition, Intellectual Property Rights, and Transgenic Seed*, 58 S.D. L. Rev. 543, 551-52 (2013). See also Gregory D. Graff, Gordon C. Rausser & Arthur A. Small, *Agricultural Biotechnology’s Complementary Intellectual Assets*, 85 Rev. Econ. & Stat. 360-61 (2006).



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larger firms.¹⁵ In the second wave, Monsanto alone acquired almost 40 agricultural biotechnology firms and independent seed companies.¹⁶ Today, Bayer and Corteva control about 72% of the corn seed market and 66% of the soybean market.¹⁷ Bayer, Corteva, and Americot control about 83% of the cotton seed market.¹⁸ These combined shares signal extremely high levels of market concentration, which is generally associated with higher prices, lower quality, and less innovation.

B. High Concentration is Not Needed to Drive Innovation

Contrary to claims that higher concentration is needed to spur investment in R&D necessary to innovate, economic analysis supports the concern that concentration can produce the opposite result, or stifle incentives to innovate.¹⁹ For example, the U.S. Department of Agriculture Economic Research Service observed that R&D intensity, as measured by the ratio of R&D investment to net sales, was 11% in 1994, increased to 15% in 2000, then declined to 10.0% in 2009.²⁰

The decrease in R&D to net sales ratio occurred at the same time that concentration was rising rapidly in genetic traits and GM crop seed. One reason why innovation may slow down with high concentration is that firms can appropriate returns from innovation more easily with less competition. New product development increases the risk that an innovator cannibalizes its sales of existing products or loses out to a rival's new product, both of which dampens incentives to stay ahead of the innovation curve.

C. Mega-Mergers Raise Several Competitive Concerns

The mega-mergers that produced the Big 3 agricultural biotechnology firms were all approved by the U.S. Department of Justice (DOJ) and Federal Trade Commission (FTC). Instead of moving to enjoin these large, complex transactions in light of past significant price increases and loss of choice for farmers, the agencies required limited divestitures to address overlaps in narrow markets. At the time the mergers that produced

¹⁵ Keith Fuglie, John King, Paul Heisey & David Schimmelpfennig, *Rising Concentration in Agricultural Input Industries Influences New Farm Technologies*, Amber Waves, Dec. 3, 2012, <https://www.ers.usda.gov/amber-waves/2012/december/rising-concentration-in-agricultural-input-industries-influences-new-technologies/>.

¹⁶ Carl Pray, James F. Oehmke & Anwar Naseem, *Innovation and Dynamic Efficiency in Plant Biotechnology: An Introduction to the Researchable Issues*, 8 *AgBioForum* 52, 60 (2005); U.N. Conference on Trade and Development, *Tracking the Trend Towards Market Concentration: The Case of the Agricultural Input Industry*, Apr. 2006.

¹⁷ MacDonald, et al., *supra* note 3.

¹⁸ *Id.*

¹⁹ James M. MacDonald, *Mergers and Competition in Seed and Agricultural Chemical Markets*, Amber Waves, Apr. 3, 2017, <https://www.ers.usda.gov/amber-waves/2017/april/mergers-and-competition-in-seed-and-agricultural-chemical-markets/>.

²⁰ Keith O. Fuglie, et al., *Research Investments and Market Structure in the Food, Processing, Agricultural Input and BioFuels Industries Worldwide*, USDA-ERS, Report No. 130, Dec. 2011, http://www.ers.usda.gov/media/193646/eib90_1_.pdf, at 15.



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Bayer, Corteva, and Syngenta were proposed, competition advocates raised several competitive concerns. Aside from likely adverse effects on farmers, through higher input prices and limited choice, and on consumers, through higher prices and less choice in how their food is grown and sourced, opponents of the mergers raised other concerns.²¹

1. Risk of Tacit or Explicit Agreements to “Specialize” in Trait Collaborations

One concern is that the collapse of the industry into three large companies increased the risk of tacit or explicit coordination where firms would “agree” to specialize in certain crops or traits. Most stacked trait products require collaborations between the large developers by cross-licensing traits. Without competitive incentives driving these pro-competitive collaborations, and instead strong incentives to maximize profits by dividing up markets, there would be less choice in stacked trait profiles, or profiles that are less likely to meet the growing region or climate-appropriate needs of farmers.

2. Delaying Generic Entry of GM Seed

A second concern over the high concentration created by the ag-biotech mega-mergers is staving off entry of smaller traits, GM seed, or agrochemical innovators. In borrowing a page from the pharmaceutical industry, the large ag-biotechs have dabbled in ways to block generic seed entrants. For example, well in advance of Roundup Ready 1 soybeans coming off patent in 2014, Monsanto attempted to switch farmers to the newly patented, marginally different, and more expensive Roundup Ready 2 soybeans.²² Monsanto’s “hard switch” strategy met with some resistance, but apparently was successful, since only one generic soybean using the RR1 trait was introduced in 2015.²³ The FTC also opened a case in 2023 against Corteva and Syngenta for using loyalty discounts for pesticide products that have the effect of raising prices to consumers and delaying generic entry.²⁴

3. Proprietary Cropping Systems That Lock in Farmers

Third, the ag-biotech mega-mergers have created behemoth integrated, proprietary cropping systems of traits, GM crop seed, and crop protection. Such systems are engineered to work only with other proprietary products, which are often bundled together, eliminating switching opportunities for farmers and locking them into single

²¹ Diana L. Moss, *Consolidation and Concentration in Agricultural Biotechnology: Next Generation Competition Issues*, CPI Antitrust Chronicle, Jan. 2020.

²² Diana L. Moss, *Generic Competition in Transgenic Soybeans*, American Antitrust Institute, Aug. 16, 2011, <https://www.antitrustinstitute.org/wp-content/uploads/2018/08/AAI-Paper-generic-comp-TG-seed8.16.11.pdf>.

²³ The University of Arkansas released UA 5414RR. See, Seedworld.com, June 2015, http://www.seedworld.com/flipbook_june2015/files/inc/c409c86a78.pdf.

²⁴ FTC v. Syngenta and Corteva, Federal Trade Commission, <https://www.ftc.gov/legal-library/browse/cases-proceedings/191-0031-syngenta-corteva-ftc-v>.



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cropping systems, with limited flexibility and choice.²⁵ Early consolidation foreshadowed this problem when farmers complained that they could not mix chemicals with other companies' products to remedy Monsanto's Roundup glyphosate herbicide resistance for first-generation transgenic soybean technology. This level of vertical integration raises entry barriers for unintegrated rivals competing in seeds or crop protection and who cannot enter at multiple levels.

4. Digital Farming Systems That Appropriate Grower Data

Fourth, the mega-mergers spurred the development of "integrated systems" through digital farming services that are tightly integrated into traits, seeds, and agrochemicals.²⁶ Digital farming is defined as the use of "[e]xtensive data collection and computation" and "[p]redictive analytics"...to provide data-based insights to optimize field-specific decision-making.²⁷ While partly innovative in nature, digital farming is also another way to combat flagging yields and resistance with more complex and expensive products.

Digital farming will also likely enhance incentives to amass and appropriate valuable farm data for potential use as a strategic competitive asset. Leveraging data across integrated, proprietary cropping systems will strengthen them and increase the lock-in effect for farmers. With a tight oligopoly, the Big 3 have stronger incentives to appropriate data from farmers through terms and conditions of licensing and technology agreements.

III. Fertilizer Markets Are Highly Concentrated and Price Spikes May Signal Tacit or Explicit Coordinated Conduct

Fertilizers are a critical input in the agricultural sector. Industrial farming in much of the world is heavily dependent on external inputs of nitrogen, phosphorus, and potassium or potash. Following an industry shakeout from 1998 to 2004, fertilizer prices increased dramatically in 2008, dipped in 2009, increased again in 2010 to peak in 2012, then gradually fell between 2013 and 2020.²⁸ However, in Fall of 2021, through the Spring of 2022, anhydrous ammonia prices in the U.S. more than doubled, topping out at a record-high \$1,300/ton, squeezing U.S. corn producers.²⁹

²⁵ Letter from AAI, FWW, and NFU to Acting Assistant Attorney General Andrew Finch, Jul. 17, 2017, https://www.antitrustinstitute.org/wp-content/uploads/2018/08/White-Paper_Monsanto-Bayer_7.26.17_0.pdf.

²⁶ DuPont and Dow to Combine in Merger of Equals, Dec. 15, 2015, <http://www.dow.com/en-us/investor-relations/investor-presentations>; and Creating a Global Leader in Agriculture, Sept. 14, 2016, <https://www.investor.bayer.de/en/handouts/archive-investor-handouts/>.

²⁷ *Id.*

²⁸ C. Robert Taylor and Diana L. Moss, *The Fertilizer Oligopoly: The Case for Global Antitrust Enforcement*, 2013, <https://www.antitrustinstitute.org/wpcontent/uploads/2013/10/FertilizerMonograph.pdf>.

²⁹ Bart L. Fischer, Joe L. Outlaw, Henry L. Bryant, J. Marc Raulston, and George M. Knappek, *Concentration and Competition in the U.S. Fertilizer Industry*, Texas A&M University, Agricultural and Food Policy Center, Briefing Paper 24-1, Mar. 2024.



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These trends in fertilizer prices over the last 25 years signal a potentially troubling pattern. Numerous studies have established that price changes are not totally accounted for by changes in demand for crop commodities, or by changes in input costs, such as fuels needed to produce fertilizers (e.g., natural gas for nitrogen). Instead, price patterns marked by an unexplainable price spike, followed by a price decrease, then another price spike, may well indicate anticompetitive coordination.

These dynamics may reflect the formation of a tacit or explicit agreement among producers, followed by a breakdown due to a defection(s) from the agreement, followed by the reconstitution of the agreement. At the same time, other dynamics may have been in play in past fertilizer price changes, especially the role of large buyers of fertilizer such as China and India in putting downward pressure on high prices. Analysis of collusive behavior would look at the possibility of regional cartels or a global “super” cartel among fertilizer producers, or the more complex interaction between private companies, government sanctioned export cartels, and governments themselves.³⁰

For example, fertilizers are produced by, among others, U.S. firms (CF Industries), Canadian firms (Nutrien and Mosaic), a state-owned Moroccan company OCP; and by various companies in Russia and Belarus. That market power has likely played a role in fertilizer prices is especially salient in light of the highly concentrated nature of the U.S. market. For example, most domestically consumer nitrogen fertilizer is produced by foreign companies and reliance on imports has decreased since 2014.

The 4-firm concentration ratio for nitrogen in the U.S. (including CF Industries, Koch, Nutrien, and Yara-USA) was 77% in 2018-2019.³¹ The 4-firm ratio for potash and phosphate is 100%.³² As noted earlier, highly concentrated markets with just a few players are far more conducive to high prices because of coordinated interaction. Supra-competitive fertilizer prices initially harm farmers and quickly translate into higher food prices throughout the world. This problem raises related strategic, food sustainability, and environmental issues for the U.S. and other countries. As such, it transcends traditional competition policy concerns.

Despite strong evidence of potentially anticompetitive behavior and consumer harm, however, antitrust authorities throughout the world have done little on the enforcement front. The FTC has investigated mergers in fertilizer markets, including the Canadian PotashCorp and Agrium merger (2018), which it challenged and settled with divestitures. After Koch Industries’ recent buyout of the Iowa Fertilizer Company, CF Industries, Koch, and Nutrien control 74-82% of the nitrogen fertilizer production capacity in the U.S.

³⁰ Taylor and Moss, *supra* note 23.

³¹ Fischer, et al., *supra* note 24.

³² *Id.*



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IV. Stronger Antitrust Enforcement and Competition Policy In Ag-Biotech Should be a Public Policy Priority

Promoting competition in U.S. agricultural and food markets, and protecting farmers and consumers should garner broad bipartisan support. U.S. farmers should be able to count on fair commodity prices and input costs, sustainable margins, and choice in inputs. They should also expect consistency and transparency in regulatory and trade policy designed to support sustainable, stable, resilient, and safe food supply chains. This directly benefits consumers through competitive food prices, which keep down an already high cost of living, and promotes choice in food products and systems.

Antitrust's role in the agricultural input markets since the turn of the century has been diminutive. Large mergers have been allowed with minimal fixes and concerns over price fixing or market manipulation have gone largely unpursued. Together, a permissive antitrust stance on agricultural input mergers and business practices have fostered highly concentrated markets in supply chains that feature little competition and weak incentives to compete hard on price, quality and innovation. This scenario is opposite that of a stable food system that features competition at multiple levels and resiliency in adjusting to unexpected shocks.

At the time of the 2010 DOJ Workshops on agriculture and antitrust enforcement, U.S. farmers held out much hope that the abuses and inequities they witnessed in input and other agriculture markets would be addressed by federal enforcers.³³ This was generally not the case. After multiple field hearings, many of the farmers around the U.S. that spent valuable savings to attend the workshops were disappointed when antitrust enforcement did not appear to invigorate or step up in any way.

Fast-forwarding 15 years, the agricultural input sectors are even more concentrated and less competitive. This shines the light on antitrust's traditionally narrow focus in going market-by-market to assess potential harms, versus considering both market-level effects and those related to the formation of monolithic, vertically integrated ag-biotech systems. Such systems lock in farmers to proprietary technologies, at great expense; lock out smaller rivals that can only compete at one or two levels; and foster information sharing and coordination that reduces competition. Moreover, most of the buyer-side, or monopsony, effects of past mergers on farmers were not fully recognized.

It is time for a more coherent public policy approach to promoting competition in U.S. food systems and the key market participants – farmers and consumers – that stake out either end. This may require more or different coordination between the DOJ, FTC, and the U.S. Department of Agriculture (USDA) to consult on potential investigations and improve data collection, especially on prices and costs. It may also mean giving USDA

³³ Voices from the Workshops on Agriculture and Antitrust Enforcement in our 21st Century Economy and Thoughts on the Way Forward, U.S. Department of Justice, May 2012, <https://www.justice.gov/archives/media/1244621/dl?inline>.



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more authority to challenge systemic competition concerns and supply chain safety, stability, and resiliency issues that do not fall within antitrust's relatively narrow ambit. Finally, it also means acknowledging that trade policies that heavily impact farmers by slashing grower incomes may result in the permanent damage and loss to U.S. agricultural productive capacity, making the U.S. more reliant on imports where regulators have less oversight of food safety and quality issues.

I appreciate the opportunity to submit testimony for this hearing and look forward to answering questions from the committee members.

Respectfully submitted,

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Prepared Testimony of:

Caleb Ragland
President
American Soybean Association

Before the U.S. Senate Committee on the Judiciary
Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries

October 28, 2025

Introduction

Good morning, Chairman Grassley, Ranking Member Durbin, and distinguished members of the Senate Judiciary Committee. It is an honor to join you today to testify on behalf of the American Soybean Association regarding the state of the farm economy and the impacts of rising input costs for farmers. My name is Caleb Ragland. I am a ninth-generation farmer from Magnolia, Kentucky, where I farm soybeans, corn, and wheat with my wife, Leanne, and our three sons. This year, I have the privilege of serving as president of the American Soybean Association (ASA). Our association, founded in 1920, represents U.S. soybean farmers on domestic and international policy issues important to the soybean industry. ASA has 26 affiliated state soybean associations representing nearly 500,000 farmers in the 30 primary soybean-producing states.

The U.S. soybean industry has a profound, positive impact on the U.S. economy. We have long been U.S. agriculture's number one export crop, and a by-the-numbers look demonstrates the value of the soybean industry to our domestic economic health. The U.S. Department of Agriculture (USDA) estimates that over 80 million acres of soy will be harvested in 2025, with production of 4.3 billion bushels. Soybean production accounts for more than \$4 billion in wages and over \$80 billion in economic impacts, according to a study by the United Soybean Board (USB)/Soy Checkoff and National Oilseed Processors Association (NOPA). This economic impact does not include secondary soy markets and supporting industries like biofuels, grain elevators, feed mills, ports, rail, refining, barges, etc., which bring the national total economic impact of the soybean value chain to a significant \$124 billion.

U.S. agriculture is facing significant challenges, which are illustrated by rapidly plunging margins for farmers. Commodity prices are down nearly 50% from highs experienced three years ago, while farmers are still facing elevated prices for land, seeds, fertilizer, pesticides, and farm machinery. For U.S. soybean farmers, 2025 has proven to be a remarkably challenging year. We are facing immense export market losses with our largest customer – China – turning to our South American competitors for soybean purchases. Due to retaliatory tariffs imposed by China, soybean farmers have lost our biggest export market. Meanwhile, on the domestic front, we cannot realize potential biofuel market opportunities until the administration finalizes the rule for 2026-2027 Renewable Fuel Standard volume obligations and guidance for the 45Z Clean Fuel Production Credit.

Last year, soy farmers were grateful to see Congress pass the American Relief Act, which included \$10 billion for economic assistance to agricultural producers to address unprecedented losses resulting from poor market conditions. While this package was much needed, it did not fully offset the combination of falling commodity prices, historically high input prices, and inflation. As farmers once again must turn to the administration and Congress to request assistance, we welcome the Senate Judiciary Committee's interest in exploring one facet of these economic challenges: input prices.

State of the Farm Economy

Farmers are facing significant economic challenges, due to the continued decline of crop prices paired with production expenses that increased rapidly in recent years and remain high. As noted above, commodity prices have fallen by an average of 50% since 2022. At the same time, farm production costs continue to skyrocket. According to USDA, farm production expenses are expected to reach \$467.4 billion for 2025 – a \$12 billion increase over 2024. While farmers would normally celebrate a harvest season with high yields, today's economic conditions mean many still will not break even.

For soybean farmers, market losses due to the ongoing trade conflict with China are only exacerbating financial problems. As trade negotiations continue deep into our marketing window with China, it is likely that a quarter of U.S. soy production will need to find new customers. When considering high production costs, soybean farmers are expected to net a \$109/acre market loss on their crop this year, according to an ASA economic analysis.

However, when you remove the outside factor of trade losses from the equation, the rising cost of farming inputs continues to squeeze on-farm profitability. Year over year, the number of Chapter 12 farm bankruptcies filed has surged. In 2024, farm bankruptcies were up 55% over 2023. For the first half of 2025, there were 57% more bankruptcies than in the same period last year. In the past two years alone, the U.S. has lost 20,000 farms. This is a deeply concerning trend that is illustrative of what occurs when farmers have depleted their safety nets due to rising costs and lower crop prices.

While there is no silver bullet that can resolve the economic crisis facing the U.S. farming sector, policies included in the One Big Beautiful Bill Act will provide some relief. Finalizing biofuel regulations would create expanded domestic opportunities, and the restoration of the Chinese soybean market would be welcome news. However, none of these items will address the rising production expenses that continue to plague the farming industry.

Rising Costs and Diminishing Returns

Farmers are paying more than ever to grow their crops, and declining revenues are creating a business environment that is not sustainable. While this is not a novel phenomenon in 2025, additional market pressures facing farmers have shed a spotlight on agribusiness. Last month, the U.S. Department of Justice (DOJ) and USDA announced a coordinated partnership to investigate competition concerns in the agribusiness industry. The interest in addressing potential factors which may be impacting the rise in input costs is a welcome development for farmers who have been struggling to break even for years.

Looking back at the past five years, input prices have risen significantly (Figure 1). According to the USDA Economic Research Service (ERS), seed prices have increased 18%; fertilizer prices have increased 37%; pesticide prices have increased 25%; and fuel expenses have increased 32% since 2020¹. Add to this a 37% increase in farmer interest expenses², and it becomes hard to imagine how any farming operation can remain solvent.

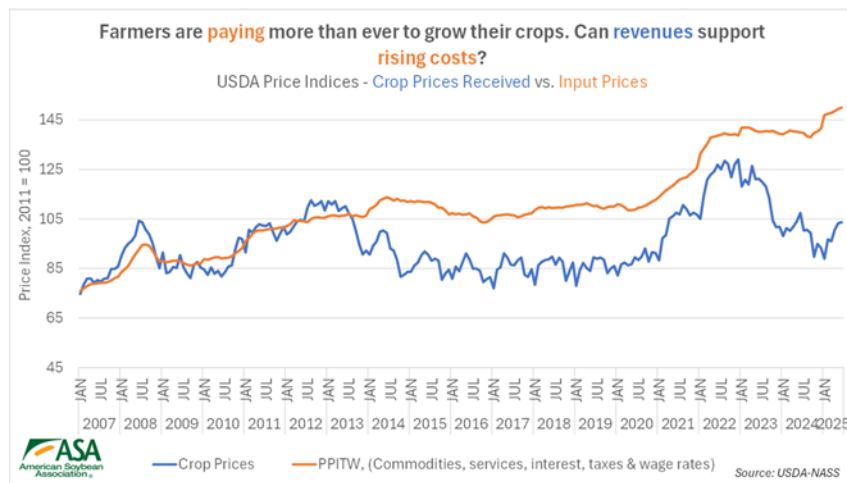


Figure 1

Seed purchases are a key cost consideration for farmers. Modern advancements in seed technology, such as pest resistance and unique genetic traits, have delivered real agronomic benefits, including higher yields and stronger crop performance, but at an added cost. Because of the importance of seed quality to the outcome of a crop, this is not a cost farmers can cut. In 2023, farmers saw a significant increase in the cost of seed, which has remained consistent over the past three growing seasons (Figure 2).

¹ Farm Income and Wealth Statistics - Production expenses. Economic Research Service, U.S. Department of Agriculture, September 3, 2025. <https://data.ers.usda.gov/reports.aspx?ID=4059>

² Price Paid Surveys and Indexes. National Agricultural Statistics Service, U.S. Department of Agriculture. https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Prices_Paid_and_Prices_Paid_Indexes/

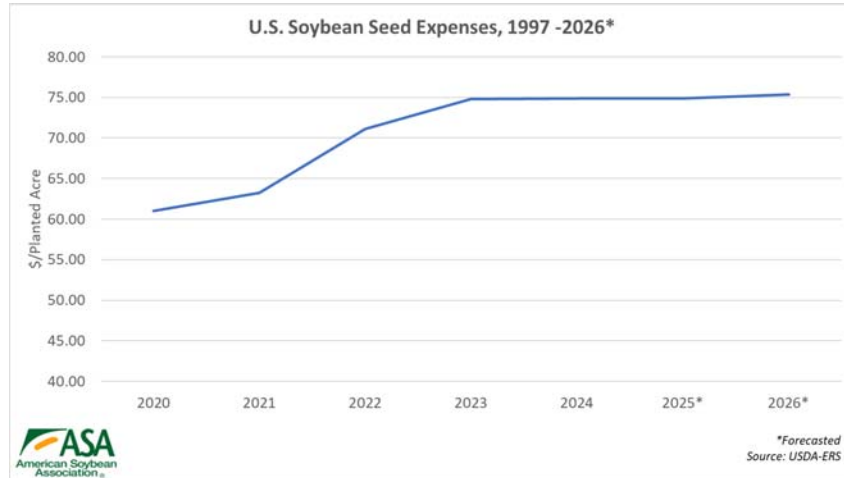


Figure 2

Fertilizer is a significant component of overall farm production costs. Unlike most other farming inputs, fertilizer is traded on a global market and relies on global supply chains, which makes the cost unpredictable. These factors mean that fertilizer is a significant farm input risk and can impact the ability of farmers to accurately budget. For example, the war in Ukraine created a significant spike in fertilizer costs, as Ukraine, Russia, and Belarus are major global suppliers. Prices have declined significantly since the 2022 spike, but the new plateau for fertilizer prices remains significantly higher than the pre-2022 levels (Figure 3).

Actions by the administration to add phosphates and potash to the critical minerals list to strengthen domestic supply are appreciated, but they will not provide short-term relief for farmers. It is clear that increased domestic and North American supplies of fertilizers are needed. The domestic permitting and construction process means it will take years before a larger domestic supply becomes available. Until then, we remain susceptible to shifts in global demand.

Fertilizer markets are complex, and legislation recently introduced by Chairman Grassley may support this Committee's work to gather data related to fertilizer pricing and industry functions. The Fertilizer Research Act directs USDA to develop a report analyzing fertilizer pricing, domestic market structure, and the impact of imports and regulatory burdens on input costs. The purpose of the USDA report is to identify opportunities to strengthen competition, improve transparency, and expand domestic production capacity. ASA supports this legislation.

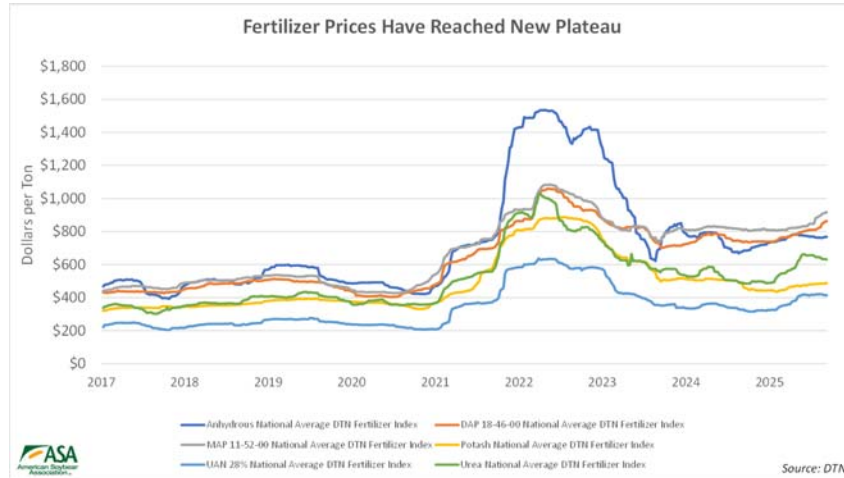


Figure 3

The cost of other farming inputs creates additional strain on a farmer's bottom line. Pesticide costs have increased significantly over the past five years, though, like seed costs, some of this is due to new developments in fungicide, insecticide, and herbicide programs. Importantly, many product advancements allow farmers to decrease pesticide use. Like other inputs, pesticidal products rely on a global supply chain which can lead to additional price disruptions.

While seed, fertilizer, and pesticides are the inputs most associated with farming, the cost of production is significantly impacted by several other farming expenses. Like all Americans, the rise in fuel prices adds additional financial strain on the farm economy.

Farm equipment costs have also increased substantially in recent years. With financial reserves depleted from years of shrinking margins, investing in new farm machinery is no longer an option for many farmers. However, the costs of parts and repairs are also increasing, squeezing farmer margins.



Figure 4

Farmers are also experiencing additional financial pressures due to rising interest rates. In the past five years, farmers have seen a 37% increase in interest expenses. The input costs outlined above require farmers to take out larger loans, both short-term operating loans which are typically taken out each year for seasonal expenses, and long-term loans required to make significant capital investments like purchasing new land or farm equipment. According to USDA, from 2023 to 2024, the total average interest expense per farm increased by 46% and is forecasted to increase again in 2025. As input costs rise and commodity prices remain low, farmers are reliant on higher loan volumes at a time when interest rates remain high. Farm credit health is declining, which in turn leads to a sharp increase in farm bankruptcies.

Factors at Play

ASA is a farm and agriculture association, and as such does not have expertise in antitrust and competition law. The DOJ and USDA investigation and the work of this committee are productive steps to determine whether competition is a significant factor in input costs increases. While the agribusiness sector has faced consolidation in recent years, ASA has not done an analysis to provide the committee with an informed position regarding the impacts of consolidation on input costs. However, other factors are also impacting the cost of inputs.

Impacts of Tariffs

The U.S. agriculture industry relies on an average of \$33 billion in imported inputs. For high-cost inputs like pesticides and fertilizers, high tariff rates can create a heavy financial burden for farmers. The International Emergency Economic Powers Act (IEEPA) tariffs levied earlier this

year not only are increasing the overall cost of imports but also have resulted in a reduction of fertilizer imports into the U.S., further constraining prices, particularly for phosphates.

According to the North Dakota State University Agricultural Trade Monitor, the overall tariff rate on agricultural input products currently averages 12.2%, compared to less than 1% before the IEEPA tariffs were levied³. Pesticide imports have been impacted the most, with effective tariff rates (including most-favored-nation status) hovering around 25% compared to a 5-6% rate prior to the IEEPA tariff. Of note, specialized pesticides imported from India – one of the two largest global suppliers – currently face an effective tariff rate of 44%.

The average tariff rate on fertilizers is lower than pesticides, largely due to the exemptions on Canadian imports. However, the overall imports of fertilizers have decreased. During the second quarter of the 2025 calendar year, U.S. import volumes relative to the prior year were down 70% for monoammonium phosphate (MAP), 23% for diammonium phosphate (DAP), and 18% for potash, according to The Fertilizer Institute.

Fertilizers also face additional trade and tariff pressures. The U.S. placed countervailing duties on the world's largest phosphate exporter, Morocco, and U.S. companies have reduced domestic production volumes. Since most global phosphate production outside of the U.S. is geographically concentrated in regions including North Africa, China, Russia and the Middle East, trade constraints with these countries lead to higher-cost sourcing from other regions with smaller supplies, including Brazil and Peru.

Geopolitical Considerations

Inputs for U.S. agriculture production are dependent on reliable sourcing of international supplies. Approximately 35% of total nitrogen, phosphorous, and potassium fertilizers used by U.S. farmers are sourced from imports and approximately half of active ingredients in pesticides are manufactured outside the U.S.

Fertilizer is traded in a global market, which means regardless of the state of the U.S. farm economy, increased crop production in other regions will continue to drive fertilizer demand and price increases. ASA understands the complexities of the global supply chain and demand but remains concerned with several ongoing issues in the marketplace. The U.S. is only the fourth largest consumer of fertilizer in the world, which means global dynamics can play a volatile role in pricing. Further, fertilizer production is natural-resource intensive and geographically limited. If inputs are not being sourced from lowest-cost origins or need to be detoured through inefficient trade routes due to tariffs or countervailing duties, the added duties, risk, and freight costs significantly reduce farmer profit margins.

³ Arita, S., Kim, J., Lwin, W. Y., Steinbach, S., Wang, M., & Zhuang, X. (2025). IEEPA Tariff Escalation: What It Means for U.S. Food and Ag-Input Imports. *NDSU Agricultural Trade Monitor*, Center for Agricultural Policy and Trade Studies, North Dakota State University, August 2025. <https://doi.org/10.22004/AG.ECON.364771>

Annual agricultural acreage shifts across the world can significantly change nutrient needs, impacting inputs and pricing. Frequent movement in agricultural production can alter the supply and demand flows for inputs required to grow crops, causing price shifts. For example, 2025 U.S. soybean acreage decreased by 6 million acres while U.S. corn acreage increased by 8 million acres, contributing to increased fertilizer demand and prices. For the 2025-2026 growing season, Brazil is forecasted to increase soybean acreage by 4 million acres and corn acreage by 2 million acres⁴.

Litigation and Regulatory Costs

Pesticide and biotechnological products are facing higher costs and longer timeframes to deliver products to market, while experiencing significant litigation costs post-market due to the growing frequency of activist lawsuits targeting agricultural innovation.

From product discovery to registration, it takes an average of 12.3 years and \$301 million to deliver a pesticidal product to the market (2019 average)— an 8.8% increase in time and a 5.7% increase in cost compared to five years earlier⁵. For new seed traits, it takes an average of 16.5 years and \$115 million from discovery to delivery (2022 average) – a 26% increase in time, but a 16.7% decrease in cost compared to ten years earlier⁶. For both pesticides and biotechnology, the regulatory process represents a significant portion of the total development cost.

While the process of registering new products is increasingly time-consuming and arduous, the ability to maintain product registration is in jeopardy. There is a growing frequency of activist lawsuits targeting pesticidal products integral to farming operations. The result is mounting legal expenses for the registrants that may ultimately impact the cost of their products. Not to mention the uncertainty this causes farmers across the country as they struggle to plan for upcoming growing seasons, not knowing which crop protection tools may or may not be available or cost effective for their operations.

Conclusion

The high cost of farm production has eroded the financial safety nets of U.S. soybean farmers and has exacerbated the economic damage sustained by market losses this year. While exploring potential agribusiness competition concerns is appreciated, other factors driving higher input

⁴ Colussi, J. and M. Langemeier. "Brazil Begins Planting with Expected Record Acreage Driven by High Demand but Low Margins." *farmdoc daily* (15):193, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, October 20, 2025. <https://farmdocdaily.illinois.edu/2025/10/brazil-begins-planting-with-expected-record-acreage-driven-by-high-demand-but-low-margins.html>

⁵ "Time and Cost of New Agrochemical Product Discovery, Development, and Registration." AgbioInvestor on behalf of Crop Life America, February 2024. <https://croplife.org/wp-content/uploads/2024/02/Time-and-Cost-To-Market-CP-2024.pdf>

⁶ "Time and Cost to Develop a New GM Trait." AgbioInvestor on behalf of Crop Life America. April 2022. <https://croplife.org/wp-content/uploads/2022/05/AgbioInvestor-Trait-RD-Branded-Report-Final-20220512.pdf>

costs must also be addressed. Farm profitability for row crops like soybeans will continue to remain in peril if input costs remain static at current levels.

As Congress and the administration continue to work to address the overall cost of farm production, I would be remiss if I did not highlight immediate, achievable opportunities to improve economic conditions for U.S. soybean farmers as negotiations with China continue and the administration works to expand new export market opportunities.

1. **Provide tariff relief on inputs** – Removing the IEEPA tariffs on critical inputs such as fertilizers, seed, pesticides, machinery, and parts will immediately lower production costs for farmers. While farmers are still wrapping up the 2025 harvest season, they will soon enter the planning stage for the 2026 crop. This autumn and winter, farmers are going to have to make painful financial decisions as they source their inputs for next year. Providing tariff relief will remove one added cost from that equation.
2. **Finalize biofuel policies to expand domestic market opportunities for U.S. soy** – The 45Z Clean Fuel Production Credit and proposed 2026-2027 Renewable Fuel Standard volume obligations are poised to drive investment in domestic soybean processing and biofuel production. As of today, we understand that the U.S. Department of the Treasury (Treasury) may not finalize 45Z tax guidance until the spring, effectively stalling biofuel production and investment. We encourage the Treasury to promulgate new 45Z guidance that corresponds to the One Big Beautiful Bill Act revisions much sooner than next spring. We also urge the Environmental Protection Agency to finalize the proposed 2026-2027 biofuel volume obligations this year, including the new mechanisms developed to stem the growing surge of imports cannibalizing the biofuel market share for soy. Swift finalization of these policies will spur domestic market growth for soybeans by supporting a key value-added market.
3. **Provide targeted farmer assistance** – While farmers would prefer robust markets for their crops and healthy operating margins, the current state of the farm economy means that many farms will not survive into the 2026 growing season without a financial bridge. Farm assistance is desperately needed to offset trade-related losses and the negative basis being experienced in some regions.

Chairman Grassley, Ranking Member Durbin, and members of the Senate Judiciary Committee, thank you again for the opportunity to testify on behalf of U.S. soybean farmers regarding the impact of rising input costs on our industry. ASA appreciates that the committee is seeking to identify opportunities to improve the state of the farm economy, and we acknowledge that this is just one step in addressing the current cost of farm production. The soy industry stands as a resource for the committee, Congress, and the administration as you work to develop policies to improve the farm economy.



Written Remarks of

Corey Rosenbusch

President and CEO

The Fertilizer Institute

Senate Judiciary Committee

Hearing on

"Pressure Cooker: Competition in the Seed & Fertilizer Industries"

October 28, 2025

Chairman Grassley, Ranking Member Durbin, and members of the Committee:

Thank you for the opportunity to testify today on behalf of The Fertilizer Institute (TFI), a trade association which represents more than 250 companies that supply the nutrients essential to American agriculture. We come before you not just as fertilizer producers and agribusiness retailers, but as partners to the nation's farmers who power the world's finest food production system.

Who We Are

The Fertilizer Institute represents more than 250 companies throughout the entire fertilizer supply chain – from the companies that manufacture fertilizers, to the retailers that work directly with farmers to ensure that precise nutrient prescriptions are delivered and applied in a timely manner, as well as importers, wholesalers, technology developers and others. In the United States, fertilizer production takes place in 30 states – Alabama, Arizona, Arkansas, California, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Mississippi, Nebraska, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Utah, Virginia, Washington, West Virginia and Wyoming. Further, our members support more than 100,000 direct jobs and more than 450,000 indirect jobs across the country.¹ Each year our members pay \$36.5 billion dollars in wages to U.S. workers who are often among the most highly paid individuals in rural communities.²

As one of only three nations with 20 or more unique companies that produce fertilizer, the United States is among the most competitive fertilizer markets in the world. The United States has robust domestic production and is the fourth largest ammonia producer (9% of global

¹ "2024 Fertilizer Industry Economic Impact Study," The Fertilizer Institute, December 12, 2024.
<https://www.tfi.org/insights/economic-impact>.

² "2024 Fertilizer Industry Economic Impact Study."

production) and fifth largest global processed phosphate producer in the world (8% of global production).

What are Fertilizers?

Fertilizer is food for plants. It is added to replenish nutrients that nourish and grow crops. They are used to increase crop yield and/or crop quality, as well as to sustain the soil's ability to support future crop production. The essential components of most fertilizers are nitrogen (N), phosphate (P), and potash (K), which are macronutrients. While there are many similarities between the three primary fertilizer macronutrients, there are also distinct differences in production, supply, use, and other conditions of competition between the primary fertilizer products. Of note:

- Nitrogen fertilizers are manufactured products, reliant on natural gas as the primary feedstock and are produced in more than 60 countries by more than 100 producers. The United States is the fourth largest nitrogen producing nation.
- The United States is also a large producer of phosphate, which is mined from geologic deposits. There are 30 countries that produce phosphate fertilizers (MAP, DAP, TSP), but the top five countries account for over 80% of production. The top phosphate producing countries are China (43%), Morocco (13%), Russia (9%), Saudi Arabia (8%), and the United States (8%).
- While the United States has some domestic production of potash, it imported most of its domestic potash supply in 2024, as it has for decades. Only 15 countries produce potash, which is mined from geologic deposits, but Canada (33%), Russia (19%) and Belarus (15%) are the dominant producers. Unlike the nitrogen and processed phosphate markets, the top exporting nations closely follow the shares of global production.

We have provided additional information on these three essential plant nutrients at the back of this testimony in Addendum A. All three of these elements play essential roles in allowing plants to access the free energy of the sun through photosynthesis and all three must be present in adequate amounts to ensure healthy crop growth and farmer productivity.

Today, it would be impossible to feed the planet without fertilizers.³ Indeed, over one half of all food grown around the world today, both for people and animals, is made possible only through the responsible use of fertilizers.

Supporting Farmers

Without farmers, there would be no fertilizer industry. Every day, farmers face mounting pressures— unpredictable weather, labor shortages, and global market disruptions. For many, those challenges seem to increase every year, despite the essential nature of farms and agriculture to our nation’s way of life and the economic vitality of Rural America.

Fertilizer is one of their most critical tools, to promote plant growth and improve crop yield and productivity. When its reliable supply is threatened, the ripple effects are felt in every corner of rural America. For that reason, we believe that a resilient and growing U.S. fertilizer industry is vital to support the American farmer. We live in these rural communities and share in the success and challenges experienced by America’s farmers.

We are glad that you are holding this hearing, so that we can explore these issues through the lens of several participants in the agricultural value chain.

Fertilizer is a Global Market, and its Competitive

The fertilizer market is a highly competitive global market, characterized by complex web of global supply and demand factors. As explained in the U.S. Department of Agriculture’s (USDA) Economic Research Service, “U.S. fertilizer production and consumption—crucial for the

³ The nitrogen produced by the Haber-Bosch synthesis process for mineral fertilizers is vital for producing large crop yields. Scientific research published in 2008 estimated that the lives of nearly half of the world’s population (48%) are only made possible by Haber–Bosch produced nitrogen. ([Erisman et al., 2008](#)).

productivity of U.S. agriculture—take place within a global fertilizer market.”⁴ This has been long been recognized by USDA research⁵ and multiple academic studies.⁶

The United States is a net fertilizer importer, and our members compete fiercely with each other and hundreds of global competitors in a robust, global fertilizer market which is dominated by countries such as China and India, which are the world’s largest consumers and combine for 40% of global fertilizer use, and China, India and Russia, which are the world’s largest producers of the three macronutrients combined. In many cases, foreign fertilizer production and consumption has been shown to have benefited from government subsidies and other policies that challenge the market-based operations of the U.S. fertilizer industry. The United States is the fourth largest consumer and the fifth largest producer of fertilizer in the world.

When one looks at this graphic of fertilizer shipping routes, it’s not hard to see the complexity of the global fertilizer market:

⁴ See, e.g., Williams, Angelica, Collins, LaPorchia A., and Boline, Amy, “Drivers of Fertilizer Markets: Supply, Demand, and Prices,” U.S. Department of Agriculture (USDA) Economic Research Report Number 354 (Sept. 2025), accessed at https://ers.usda.gov/sites/default/files/_laserfiche/publications/113324/ERR-354.pdf?v=42889.

⁵ See, e.g., Huang, Wen-yuan, USDA Outlook Report from Economic Research Service, “Factors Contributing to the Recent Increase in U.S. Fertilizer Prices, 2002-2008,” (Feb. 2009), accessed at https://www.ers.usda.gov/webdocs/outlooks/35824/10935_ar33.pdf?v=9996 (“In an increasingly globalized market, changes in global supply and demand of fertilizer can lead directly to the rise and fall of U.S. fertilizer prices.”); Nti, Frank, “Impacts and Repercussions of Price Increases on the Global Fertilizer Market,” USDA Foreign Agricultural Service (June 2022), accessed at <https://www.fas.usda.gov/data/impacts-and-repercussions-price-increases-global-fertilizer-market> (“Russia and Belarus play critical roles in the global fertilizer market, accounting for nearly 20 percent of global exports.”).

⁶ See, e.g., Monaco, Henrique, Schnitkey, Gary, and Paulson, Nick, “U.S. Fertilizer Industry in Global Markets: Structure and Supply Risks” Department of Agricultural and Consumer Economics University of Illinois, accessed at <https://farmdocdaily.illinois.edu/2025/07/us-fertilizer-industry-in-global-markets-structure-and-supply-risks.html> (“Global trade in fertilizers is significant, accounting for 10-15% of total production of nitrogen and phosphorus ... as a global commodity, U.S. farmers still face significant price volatility. Price spikes—like those in 2022 []— remain possible since production and global trade can be impacted by policy uncertainty.”); Monaco, Henrique, Schnitkey, Gary, and Paulson, Nick, and Zulauf, Carl, “Fertilizer Prices Continue Decline and May Impact Farmers’ Nitrogen Decisions,” Department of Agricultural and Consumer Economics University of Illinois and Department of Agricultural, Environmental and Development Economics Ohio State University (Aug. 2023) accessed at <https://farmdocdaily.illinois.edu/2023/08/fertilizer-prices-continue-decline-and-may-impact-farmers-nitrogen-decisions.html> (“Much of the narrowing in premiums on urea and liquid relative to anhydrous in the first half of 2022 is linked to the Russia-Ukraine conflict, as there were significant disruptions and displacement of global fertilizer trade flows.”).



(source: IFA)

Fertilizer is a commodity sold in bulk, so farmers are largely unaware of its geographic source once it reaches their field. The nitrogen, phosphate, and potash made in the United States are physically indistinguishable from fertilizer that comes from Russia or elsewhere in the world. While fertilizer is a global commodity, there are distinct differences in production, supply, use, and trade between the primary fertilizer products, including a unique vulnerability to supply shocks.

Current Geopolitical Impacts on the Global Fertilizer Market

Geopolitical events such as ongoing global conflicts in the Middle East and Europe; government controls; subsidies, and other government policies impact production, exports and consumption; and the evolving nature of global trade policy are impacting global supply and demand and as a result, prices for fertilizers.

Geopolitical events have been the biggest cause of disruption to the global fertilizer market in recent years.

- China is the world's largest producer of fertilizers, producing 31% of the world's ammonia, 32% of the world's urea and 43% of the world's processed phosphates. China's growth as a fertilizer producer has developed over decades through a combination of factors, including resource advantages, high fertilizer tariffs, and government support. Prior to 2021, China was the world's largest exporter of MAP and DAP and had been among the top three exporters of nitrogen globally.⁷ In 2021, however, China began imposing export restrictions on its fertilizer products. China's state-supported, non-market driven buildup of substantial capacity and their subsequent government mandated export restraints have been highly disruptive to the global market, raising costs for farmers in the United States and worldwide, while chilling the growth of market-based capacity expansions elsewhere.
- India procures their fertilizer through a centralized government buying tender that is then subsidized before being sold to farmers.
- The Russian war in Ukraine was also highly disruptive. Russia is the biggest global supplier of fertilizers (about 16% of global supply), and that supply chain was significantly impacted at the onset of the war mainly because of sanctions imposed by several nations. Russia also restricted Europe's natural gas supply, which Europeans relied on for their fertilizer production. This resulted in approximately 70% of European nitrogen fertilizer production shutting down in 2022 due to high natural gas costs. While some countries and regions, particularly, Canada, the European Union and the UK, have also put tariffs on fertilizer imports; Russian fertilizer products enter the United States duty-free.
- Natural gas prices and supply problems in Europe, Egypt, Iran and Trinidad are all impacting the supply of fertilizers in the United States.

Fertilizer Supply and Demand Dynamics

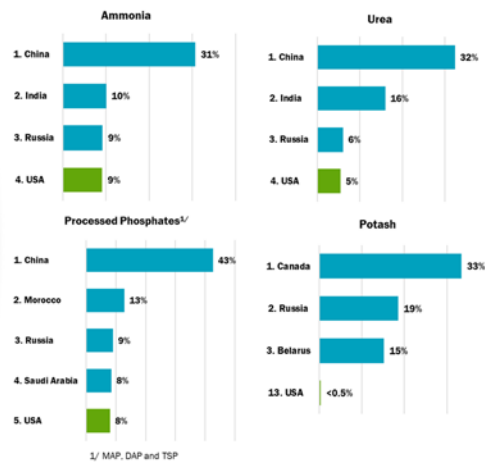
⁷ For example, Chinese nitrogen exports represented nearly 30% of all nitrogen trade in 2014-2015 (reaching 14 MMT out of 47 MMT). Further, Chinese phosphate exports represented 30% of all phosphate trade in 2014-2015 (reaching 8 MMT of 26 MMT).

The United States is a net importer and a much smaller producer of the three macronutrients than other global sources, particularly China, India and Russia. As a result, for many fertilizer products, the United States does not currently produce enough fertilizer to meet American farmers' fertilizer use during the peak demand of fertilizer application seasons. Thus, American farmers utilize a mix of domestic production and imported fertilizer, with the relative share dependent on the product and the year. Currently, 65% of overall U.S. farmers' nitrogen, phosphate, and potash needs are met by domestic fertilizer production. The rest comes from imports. Both imported and domestically produced fertilizer are subject to global market dynamics.

For two of the three macronutrients, nitrogen and phosphate, the U.S. has significant resources and abundant production capacity. While U.S. reserves of the third macronutrient – potash – are limited, Canada has reserves that are the largest in the world. Ammonia was produced by 18 companies at 37 plants in 17 States in the United States during 2024.⁸ Ammonium phosphates and potash are produced by six companies at 15 mines in seven states.

Top Global Fertilizer Producers, 2024

Data Source:
International Fertilizer Association

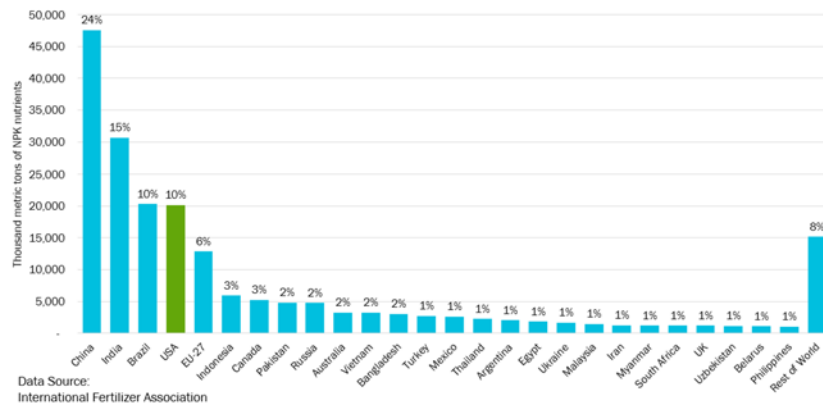


⁸ <https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-nitrogen.pdf>

Since plants require nutrients in differing amounts, shifts in U.S. acreage between crops year-over-year can alter overall U.S. fertilizer demand, as well as relative demand between nutrients and specific fertilizer products. Sizable shifts towards crops with higher average nutrient demand per acre, like corn, away from crops with lower average nutrient demand per acre, like soybeans, have led to significant increases in U.S. fertilizer demand. Corn (~50%), soybeans (~11%), wheat (~10%) and cotton (4%) combined account for approximately 75% of U.S. fertilizer use.

Ninety percent of global fertilizer consumption occurs outside of the United States. As noted earlier the two largest consumers, China and India combine for nearly 40% of global use. High prices for globally traded agricultural commodities not grown at scale in the United States are giving farmers in other parts of the world significant purchasing power in the global fertilizer market.

Global Fertilizer Consumption, 2023



Building Production: What the Fertilizer Industry is Doing

Our deep commitment to meeting the needs of America's farmers and America's food supply can be seen in our investments in fertilizer production and distribution throughout the United

States. Just as U.S. farmers are among the most efficient and innovative in the world, so is the U.S. fertilizer sector.

Fertilizer production is highly capital-intensive. Every year, U.S. fertilizer producers are investing billions of dollars to maintain and upgrade their facilities; that investment has helped foster the reliability and strong capacity utilization of the U.S. industry and has, in many cases, expanded U.S. production over nameplate capacity, all of which is making more fertilizer available to America's farmers. Over the past decade, billions of dollars have also been invested to expand U.S. fertilizer production capacity, including in Iowa and Louisiana.

Since the beginning of 2025, billions of dollars of fertilizer industry investment in new U.S. greenfield production have also been announced with new production capacity coming online by 2029. Additional production expansions are in earlier stages of development but are facing legal challenges as they move through the permitting process.

These major investments are made for the long term, with U.S. production sites operating for decades because of the level of maintenance and improvements. The investment and commitment to strong and safe operations by the fertilizer industry means that U.S. farmers have access to more critical crop nutrients in a timely manner.

Beyond Production: Our Ongoing Partnership with American Farmers

Our industry has a long history of problem solving, and we're regularly innovating to build and improve systems that help farmers get the most out of every dollar they spend on fertilizer and to promote the commercial and environmental sustainability of our products and the broader agricultural sector. TFI and its members invest in agronomic research aimed at helping identify and fine-tune the products and field practices that maximize farmers' investment in our products, while also reducing environmental impacts.

A farmer's work with their agricultural retailer's agronomist can impact the source, rate, timing and placement of fertilizers. These relationships are deep and longstanding as are our ties to thousands of rural communities.

Our commitment to scientific research has benefited American farmers' agricultural productivity and environmental stewardship. Decades of scientific investment, supported by industry, led to the development of the "4R Nutrient Stewardship Framework"—applying the right nutrient source, at the right rate, at the right time, and in the right place. This approach, rigorously validated through research, is now widely recognized by farmers, industry, policymakers, and federal agencies as an effective conservation practice. The tangible outcomes of 4R research are clear: these principles help farmers increase crop yields, use resources more efficiently, reduce costs, and lower environmental impacts. Nearly 65 million acres of U.S. farmland are being actively managed using 4R Nutrient Stewardship practices, and the fertilizer industry and farmers are hard at work continuing to build this number.⁹

TFI Seeks Practical, Pro-Farmer Policy Solutions:

TFI recently released a plan for strengthening the domestic supply of fertilizers. This plan includes recommendations such as:

- **Appointment of a full-time USDA Fertilizer Economist** to monitor market dynamics, improve transparency, and provide accurate, timely information to farmers and policymakers.
- **Advancement of a national policy to expand domestic fertilizer production**, led by the Secretary of Agriculture and coordinated across federal agencies.
- **Streamlining of federal permitting and regulatory reviews** to accelerate construction and modernization of fertilizer plants, mines, and infrastructure.
- **Including phosphate and potash on the Final Critical Minerals List** to improve supply security and permitting efficiency.

⁹ "Sustainable Farming Surging as Growers Drive 4R Adoption," The Fertilizer Institute, June 18, 2025, <https://www.tfi.org/media-center/2025/06/18/sustainable-farming-surging-as-growers-drive-4r-adoption/>.

- **Encouraging energy policies that maintain affordable and reliable natural gas supplies,** the key feedstock for nitrogen fertilizer, to safeguard U.S. production and competitiveness.
- **Promoting a more open, fair, predictable, and transparent trading environment** that empowers the continued growth of a resilient, competitive, and sustainable fertilizer industry for our farmer customers.
- **Accelerating innovation and emerging fertilizer technologies,** including advanced nutrient formulations and enhanced efficiency fertilizers consistent with the 4R Nutrient Stewardship framework.
- **Further encouraging grower adoption of 4R Nutrient Stewardship practices** (applying the right source, rate, time, and place) to support farmers getting the most out of every fertilizer dollar.
- **Identifying productive science-backed streams for recycled production materials from mined sources.**

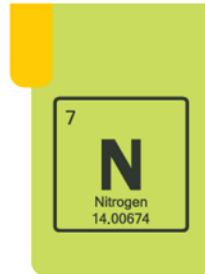
Conclusion

Just like the crops that fertilizers feed, fertilizer is a highly competitive global market as long recognized by the U.S. Department of Agriculture, international competition bureaus and leading academic researchers.

TFI appreciates hearings like this that place a spotlight on critical issues like American farmers, and we want to be part of the solution. We believe that smart policy can strengthen domestic production,, and ensure that American farmers are never left without the nutrients they need to grow healthy crops.

We appreciate the Committee's attention to these issues and look forward to working together to build a more resilient American agricultural future. I welcome your questions and thank you for the opportunity to speak on behalf of those who serve the backbone of our food system.

Addendum A



NPK: The Building Blocks of Plant Growth
The Three Essential Nutrients Every Plant Needs

NITROGEN (N)

THE GROWTH DRIVER

Core Components of Fertilizer

To grow, stay healthy, and produce food, plants need 17 essential nutrients. Three of those elements—carbon, hydrogen and oxygen—are obtained through the air and water. The remaining 14 have to come from the soil through the plant's roots. Three primary nutrients — Nitrogen (N), Phosphorus (P), and Potassium (K) — often called "macronutrients", are needed in larger amounts than other nutrients and make up the bulk of all fertilizer produced. Together they form the foundation of plant nutrition.

What is Nitrogen (N)?

Nitrogen-based fertilizers are primarily manufactured through the Haber-Bosch process, a method developed over 100 years ago to create ammonia by heating and pressurizing nitrogen from the air over a hydrogen source (typically from natural gas). The resultant ammonia is further processed to create nitrogen fertilizers in solid and liquid forms. (source: IFA)

Why Nitrogen Matters

Nitrogen is a fundamental element in proteins, which make up all plant and animal tissues.

- ✓ Drives leaf and stem growth
- ✓ Fuels plant development
- ✓ Builds proteins and chlorophyll (the green pigment that captures sunlight)
- ✓ Encourages fast, healthy growth and high yields

The nutritional quality of food — from grains to vegetables — depends heavily on an adequate nitrogen supply.



Nitrogen Market Intelligence

Nitrogen is necessary for plant growth, and it helps crops manufacture proteins and boosts crop yields. The U.S. is a large producer of nitrogen, the fourth largest ammonia producer of the 63 countries that produce ammonia, the building block of all nitrogen fertilizers. Most ammonia production is heavily dependent on natural gas as the primary feedstock. Because ammonia is produced in so many countries and regions, the average global import reliance for nitrogen is the lowest of the three major macronutrients, though there is a significant range across countries.

For example, Brazil imports nearly all its nitrogen fertilizer, while China supplies nearly all its nitrogen fertilizer domestically. Among specific nitrogen fertilizers there can be a significant difference between the countries that are top producers of nitrogen and those that are top exporters. Many products are utilized in the United States to deliver nitrogen, but three products account for about 90% of consumption, each roughly accounting for about 30% of consumption: anhydrous ammonia, urea and nitrogen solutions (UAN).

Anhydrous Ammonia (82% nitrogen and the principle building block for all nitrogen fertilizers):

TOP PRODUCERS

China (31%), India (10%), Russia (9%), and U.S. (9%)

TOP EXPORTERS

Trinidad and Tobago (18%), Saudi Arabia (14%), Indonesia (10%), Algeria (7%), and U.S. (6%)

US APPROXIMATE
IMPORT RELIANCE
SHARE:

11%

TOP U.S. IMPORT SOURCES:

Canada (52%) and Trinidad and Tobago (42%)



Remaining Top 4 Importers Import Reliance Share: China (1%), India (11%), and Brazil (74%)

Urea (45% nitrogen):

TOP PRODUCERS

China (32%), India (16%), Russia (6%), and US (5%)

TOP EXPORTERS

Russia (18%), Iran (11%), Qatar (11%), Saudi Arabia (8%), and Egypt (8%).

The U.S. is the 13th largest exporter

US APPROXIMATE
IMPORT RELIANCE
SHARE:

36%

TOP U.S. IMPORT SOURCES:

Russia (27%), Qatar (22%), Saudi Arabia (10%), Algeria (10%), and Canada (8%)



Remaining Top 4 Importers Import Reliance Share: China (1%), India (11%), and Brazil (74%)

UAN (between 28% and 32% nitrogen):

TOP PRODUCERS & EXPORTERS

Global data is unavailable for UAN.

US APPROXIMATE
IMPORT RELIANCE
SHARE:

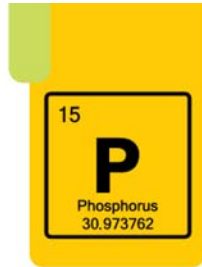
20%

TOP U.S. IMPORT SOURCES:

Russia (46%), Trinidad and Tobago (28%), and Canada (22%)



Learn More - The Fertilizer Institute (TFI) - #MadePossibleByFertilizer



NPK: The Building Blocks of Plant Growth
The Three Essential Nutrients Every Plant Needs

PHOSPHORUS (P)

ESSENTIAL FOR PLANT ENERGY AND GROWTH

Core Components of Fertilizer

To grow, stay healthy, and produce food, plants need 17 essential nutrients. Three of those elements—carbon, hydrogen and oxygen—are obtained through the air and water. The remaining 14 have to come from the soil through the plant's roots. Three primary nutrients — Nitrogen (N), Phosphorus (P), and Potassium (K) — often called "macronutrients", are needed in larger amounts than other nutrients and make up the bulk of all fertilizer produced. Together they form the foundation of plant nutrition.

What is Phosphorus (P)?

Phosphorus-based fertilizers come from phosphate rock, a naturally occurring mineral mined from geologic deposits. The rock is treated with sulfuric acid to release phosphorus and produce phosphoric acid — a key ingredient that can be combined with ammonia and sulfur to create various fertilizer products, including monoammonium phosphate (MAP), diammonium phosphate (DAP), and triple superphosphate (TSP).

Why Phosphate Matters

Phosphate plays a vital role in how plants convert sunlight into energy and supports:

- ☛ Photosynthesis and energy transfer
- ☛ Root development and seed formation
- ☛ Cell division, cell enlargement, and the transfer of genetic information



Phosphorus Market Intelligence

The U.S. is also a large producer of phosphate, which is mined from geologic deposits. There are 30 countries that produce phosphate fertilizers (MAP, DAP, TSP), but the top five producers account for over 80% of production. The top phosphate producers are China (44%), Morocco (14%), Russia (9%), Saudi Arabia (9%), and the United States (8%). There are 22 countries that export phosphate fertilizers with the leading exporters being Morocco (30%), China (21%), Saudi Arabia (16%), Russia (15%), and the United States (4%).

Since 2021 there has been a significant shift in the global phosphate market when leading producer and exporters, China and Morocco, began delivering fewer nutrient tons of processed phosphates to the global market than in recent years. In 2024, China and Morocco exported 1.9 million fewer metric tons of MAP and DAP to the world than in 2021. Other significant global exporters like Saudi Arabia and Russia have increased exports but have been unable to replace lost exports from China and Morocco.

There have been fewer nutrient tons of processed phosphates exported to the world every year since 2021. More specifically, 2024 exports were 7% below the 2021 level, 2023 exports were 10% below the 2021 level and 2022 exports were 18% below 2021 exports. This is despite the fact that global production in 2024 exceeded 2021 levels by 4%.

In the U.S. growers predominantly use MAP and DAP, though TSP usage is growing. This is relevant because phosphate fertilizer production in some major producing and exporting countries, like Morocco, has increasingly shifted towards TSP. For example, in 2020, 11% of Morocco's processed phosphate exports were TSP. By 2024, that share had grown to 24%. Although the TSP market remains smaller than the market for DAP and MAP, a noticeable shift in production towards TSP is occurring.

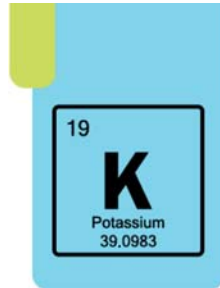
In 2024, the U.S. accounted for approximately 8% of global imports of P2O5. Most of the 2024 imports have come from Saudi Arabia (38%), Israel (13%), Mexico (12%), Jordan (9%), and Egypt (6%).

Imports accounted for 41% of the U.S. phosphate supply in 2024.

In Summary

Phosphate fertilizers are essential to modern agriculture — fueling root development, photosynthesis, and energy transfer in plants. But because production is geographically concentrated and global trade is shifting, access and affordability can fluctuate, influencing fertilizer prices worldwide.

[Learn More - The Fertilizer Institute \(TFI\) - #MadePossibleByFertilizer](#)



NPK: The Building Blocks of Plant Growth
The Three Essential Nutrients Every Plant Needs

POTASSIUM/POTASH (K)

THE PROTECTOR

Core Components of Fertilizer

To grow, stay healthy, and produce food, plants need 17 essential nutrients. Three of those elements—carbon, hydrogen and oxygen—are obtained through the air and water. The remaining 14 have to come from the soil through the plant's roots. Three primary nutrients — Nitrogen (N), Phosphorus (P), and Potassium (K) — often called "macronutrients", are needed in larger amounts than other nutrients and make up the bulk of all fertilizer produced. Together they form the foundation of plant nutrition.

What is Potash?

Potassium-based fertilizers originate from potassium chloride, also known as **potash**. Potash is mined from geological deposits of evaporite minerals, which were formed when ancient seas and saltwater lakes evaporated millions of years ago — leaving behind layers rich in potassium salts (mainly potassium chloride). After potash is mined, it's refined into different fertilizer products and shaped into small, uniform granules so farmers can apply it easily and plants can absorb the nutrients more efficiently.

Plants Need Potash to:

- ✓ Grow stronger
- ✓ Withstand drought stress
- ✓ Fend off insects and disease
- ✓ Use water more efficiently
- ✓ Improve yield and quality

When plants have adequate potash, they are healthier, more resilient, and more productive.



Potash Market Intelligence

While the United States has some domestic production of potash, it imported most of its domestic potash supply in 2024, as it has for decades. Only 16 countries produce potash, which is mined from geologic deposits, but Canada (33%), Russia (22%) and Belarus (15%) are the dominant producers. Unlike the nitrogen and processed phosphate markets, the top exporting nations closely follow the shares of global production.

THE TOP EXPORTERS OF POTASH IN 2024 WERE:

Canada (39%), Russia (19%), Belarus (18%)



The United States accounted for about 15% of all potash imports globally in 2024, making the U.S. the third largest importer of potash after Brazil (23%) and China (22%). Most U.S. potash imports come from Canada (86%), Russia (11%), and Israel (2%). Globally, reliance on imports as a source of total supply is the highest in potash of the three major macronutrients (NPK). In 2024, the global reliance on imports as a source of total potash consumption was 80%.

For example, potash is the only macronutrient that China, the world's largest fertilizer consuming country, imported as a significant share of supply. To contrast with the other macronutrients, China imported 67% of the nation's total potash supply, but less than 1% of its nitrogen and processed phosphate supplies.

In Summary

Potash ensures **food security and crop resilience** — but global supply concentration makes trade stability essential. Strong partnerships and open markets help keep nutrients available and affordable for farmers everywhere.

Learn More - The Fertilizer Institute (TFI) - #MadePossibleByFertilizer

Hearing on “Pressure Cooker: Competition in the Seed & Fertilizer Industries”
Senator Grassley, Chairman
Questions for the Record: Mr. Noah Coppess - Coppess Family Farms

1. Do you see any efficiencies from seed companies in your ledger? **Over the past decades it is evident that the advancements in seed technology and genetics have allowed us to achieve higher yields.**
2. Could you please provide us with some examples of where rebate ladders or the threat of lost allocations shut out rival brands at the state/county/local level? What information would you share with the appropriate federal agencies about these practices? **Our seed purchase discounts are based on growth and volume. If we add units or hit certain volume targets, we are awarded a higher discount. It's my understanding if we were to not take delivery of some of the initially ordered units, we would have to pay a higher cost if we fell out of a discount schedule. I have not personally done this to experience if it actually happens. There are options to gain additional discounts if we couple pesticide purchase of the same parent company brand but in my own operation we have chosen to pass on the discounts if we thought the pesticide wasn't the right product for the task.**
3. Could you describe recent incidents, dates, counties, and how it impacted acres, where a supplier or retailer used rebate leverage or allocation delays to punish switching? If such incidents occurred, did you share that information with the appropriate federal authorities? **I have not experienced this.**
4. You testified about the high costs of seed and fertilizer. To what extent would further margin compression from rising input costs force you to shut down your farming operation, and how soon could that outcome occur if there is no relief? **Our financial strength is very fragile today; we expect to be able to farm next year but have genuine concerns we will be able to maintain lending support if the conditions don't change on our costs.**
5. During the hearing, it was noted that farmers cannot freely mix and match genetically modified (GM) seeds with different agrochemicals. Has this constraint further restricted your choice of cropping systems, beyond the limitations imposed by your region, weather, or soil conditions? If so, please describe specifically how this has affected your farming decisions. **I have not had issues here.**
6. Restrictive licensing and pricing practices for GM seeds have been a cause of concern. Which specific practices, if halted by appropriate government intervention, would have the most positive impact on promoting competition in the seed market and reducing the

prices that farmers pay for seed? Today we really have one company to choose from that has the highest opportunity for yield with the least amount of risk. As I understand it, some of the technology they are using could be more available to other seed companies if patents we allowed to expire or trait fees were kept in check. I need more seed brands to have hybrids that can compete with the Pioneer seed we purchase. While I am proud to use their product, today it's the only choice I have. When you weigh the options and the price increases year after year, I feel it has gotten out of hand.

7. As of October 28, 2025, what is the prevailing price per metric ton of monoammonium phosphate (MAP) in the United States compared with Brazil, and what are the principal causes of any price differential(s)? I had to lean on the Farm Bureau team for some of the data sourcing here and a little AI support, but what follows is a detailed answer of your question with the pricing information coming from the [The Fertilizer Institute's World Fertilizer Conference](#) held in Chicago 9/15/2025-9/17/2025. As of October 28, 2025, the prevailing price per metric ton of monoammonium phosphate (MAP) in the United States was approximately \$650–\$680, reflecting a structural premium of \$150–\$200 per metric ton over Brazil's landed price of \$450–\$500 per metric ton. This differential, often referred to as the "Gulf premium," stems from a combination of trade barriers, supply-side constraints, and logistical factors that disproportionately burden U.S. markets compared to Brazil's more open import dynamics.

The principal causes of this price gap include:

Import Duties and Countervailing Tariffs: U.S. suppliers face steep tariffs (15–47%) on MAP from key global sources like Morocco, Saudi Arabia, and Russia, which have reduced imports by ~30% year-on-year through mid-2025. This tightens domestic supply and inflates prices. In contrast, Brazil accesses these suppliers via long-term contracts exempt from similar duties, enabling lower acquisition costs.

Domestic Production Constraints: U.S. granular phosphate production (led by Mosaic and Nutrien) has fallen 32% since 2015 due to declining Florida rock quality (~28.5% P_2O_5), raising costs and limiting output. Brazil, reliant on imports, avoids these domestic inefficiencies.

Freight and Logistical Costs: Elevated U.S. interior delivery costs from volatile river systems, high barge rates, and diesel prices above \$3.75/gallon in 2025 add upward pressure. Brazil leverages efficient seaborne bulk shipping with minimal internal bottlenecks.

Policy and Market Structure Differences: U.S. protectionist policies prioritize domestic producers, sustaining the premium even amid global softening. Brazil's market benefits from diversified, duty-free sourcing.

Currency and Timing Effects: A stronger U.S. dollar in Q3 2025 eroded import affordability, while Brazilian buyers capitalized on Q2–Q3 global price dips to stockpile at reduced rates.

Senate Judiciary Committee Hearing
 “Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries”
 Noah Coppess
 Questions for the Record
 Submitted November 4, 2025

QUESTIONS FROM SENATOR BOOKER

1. Most major seed companies require farmers to sign technology-use agreements that are framed as protecting intellectual property, but in practice they impose restrictive and harmful conditions on farmers. These contracts typically prevent farmers from saving and replanting seed, grant companies the right to enter the farmer’s property for crop data collection—not only that growing season but years after—and require farmers to turn over production and sales records.¹
 - a. Have you had to sign technology-use agreements for seeds you use on your own farm require and would you have been able to purchase those seeds without signing such the contract? **Yes, we sign technology-use agreements when we purchase seed. I’ve never refused to sign the document so I can’t say for sure if that would have stopped the sale but I presume it would.**
 - b. Did you consider any of the contract provisions burdensome or problematic? If so, please describe which provisions and how they have affected your farm operations and business decisions. **I have not to this point.**
 - c. Are there practices or decisions you would have adopted on your farm but were unable to because of these contract restrictions? If so, please describe them. **I would consider retaining my soybeans and treating and planting them if the cost justified it, however I have not investigated it thoroughly as it never seemed like an option.**
2. The technology-use agreements that farmers are forced into can be extremely lengthy, often dozens of pages, and highly technical, frequently necessitating review by an attorney. Yet, the contract terms vary very little among the major seed companies, leaving farmers with virtually no meaningful choice but to accept the same restrictive conditions across the market.²
 - a. Do you have to hire an attorney to review each contract from a major seed company? Has there been a time when you were not able to hire an attorney to

¹ Spiegel et al., *Seeds for Rent: The Farmers’ Guide to Technology Use Agreements*, CENTER FOR AGRICULTURE & FOOD SYSTEMS (Feb. 2025), <https://cafs.vermontlaw.edu/wp-content/uploads/seeds-for-rent-the-farmers-guide-to-technology-use-agreements-2025.pdf>.

² *Id.*

- review a contract before signing it? I have chosen not to and knowingly accept that I don't know all of the details of the contract but get the basic understanding of it.
- b. Have you had to sign contracts with binding arbitration agreements? I don't know if the contracts have had that in them.
 - c. Have you ever been able to negotiate the terms of a contract? I have never tried to negotiate seed contracts. In the case of John Deere Operations Center use agreement, I have not been able to negotiate those terms.
3. Over the past 100 years, farmers, universities, plant breeders and others have transformed the seed market by producing seeds that are more resilient and economically productive.³ However, corporate capture of our seed industry has manipulated this system such that plant breeders have less autonomy, seed stock is less resilient, and farmers are losing opportunities to adapt to a rapidly changing climate.
- a. In your experience, what is the impact of a consolidated seed industry on the ability of farmers to develop new seeds that are responsive to local changing climates? I am at the mercy of what is available primarily from the two major parent companies and what they choose to focus on. We have a great non-gmo market for soybeans and white corn locally but have not had many new hybrids come to the market to support them in the past several years. Southern Rust pushed into our area this year but only a few hybrids were tolerant to it in our area. That hit us pretty hard this year financially.
 - b. How does corporate dominance by a few powerful players in the seed industry stifle innovation? What I've learned its made it hard for the independent companies to get new products to the market and limited us to what the two major companies choose to focus on.
4. In your testimony, you note that 66 percent of the input cost increase between 2020 and 2024 was due to "[s]eed, chemicals, etc.", which includes seed, fertilizer, herbicide, insecticide, insurance, interest, and other costs. In your view, how does the lack of competition among fertilizer and seed producers contribute to increased input costs that do not follow commodity prices? They follow the commodity prices up but then stay elevated. We have very few competitive options therefore we are subject to pay whatever price we are given to do business with a product that is trustworthy of producing.

³ U.S. Dept. of Agric., Agricultural Marketing Service, *More and Better Choices for Farmers: Promoting Fair Competition and Innovation in Seeds and Other Agricultural Inputs* (Mar. 2023), https://www.ams.usda.gov/sites/default/files/media/SeedsReport.pdf?utm_

5. Before the recent agreements allowing farmers to repair their own tractors, many farmers were forced to rely on manufacturer-authorized dealers for even simple repairs—at significant cost and delay. Can you describe the challenges this created for your operation, and how the ability to repair your own equipment has improved efficiency, reduced costs, or supported your business overall? I'm trained in this field so we are able to skirt the costs of purchasing newer equipment by being able to purchase used equipment and fix it ourselves. I can get the tech support I need today but its expensive. Fixing our equipment ourselves has created significant uptime and cost savings advantages. Often our operations are benefited by little down time which is critical in achieving top yields as we can get the work done in the ideal conditions when mother nature allows them. Top yields translates to financial efficiency and long term strength for our farm.



November 19, 2025

via Email
record@judiciary-rep.senate.gov

The Honorable Charles E. Grassley
The United States Senate
135 Hart Senate Office Building
Washington, DC 20510

Re: Response on written questions after testimony given to the U.S. Senate Judiciary Committee entitled, "Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries" on October 28, 2025

Dear Chairman Grassley,

Thank you again for the opportunity to testify before the U.S. Senate Judiciary Committee. It was an honor to share our experience and perspective as an independent seed company in a highly consolidated industry.

I have received these follow-up questions from you as well as from Senator Cory Booker. My responses to those questions are attached. If you or your staff have additional questions or if I can provide additional assistance, please feel free to contact me.

I sincerely appreciate the Committee's bipartisan focus on these important issues and your leadership in examining competition in the agricultural input sector.

Sincerely,

John Latham
President
Latham Quality, Inc.
johnl@lathamseeds.com

Enclosures

cc: The Honorable Cory Booker

Latham Quality, Inc.
131 180th Street
Alexander, Iowa 50420 USA
(641) 692-3258

Questions from Senator Grassley, Chairman
 for John Latham – Latham Quality, Inc.
 Hearing on “Pressure Cooker: Competition in the Seed & Fertilizer Industries”

1. In your opinion, what practical steps would help aspiring and new entrants in the seed and fertilizer industries reach farmers?

I cannot speak to the fertilizer industry, but within the seed industry there is a need to reduce barriers that currently limit new entrants. Access to breeding tools, gene-edited traits, and off-patent technologies could be improved through clearer, nondiscriminatory licensing standards. Today, licensing terms and contractual conditions are often set unilaterally by dominant firms, which makes it difficult for smaller firms to adopt technologies that are technically off-patent.

Oversight of licensing practices—particularly around patent extensions, bundled “product” patents, and restrictive agreements—would support innovation and encourage additional breeding companies to enter the market. Transparency in trait and technology fees would also allow farmers to understand what portion of their seed cost relates to technology rather than genetics.

I would suggest that, due to patents established on biological systems, the only way we will see a significant post-patent market in biotech traits is by revised legislation at USPTO and USDA. Currently, there is an unintended consequence between the position of USPTO and USDA’s Plant Variety Protection Act that needs to be corrected. This “consequence” occurs by the merger of the PVPA’s rules on protecting plant genetics and USPTO’s engineered biological patent rules. The combination of these two areas in seed limits the access to traits on patent expiration.

Finally, establishing industry-wide fair-dealing rules around rebates and loyalty programs would help ensure independent companies can choose the best genetics or traits for their customers without facing financial penalties. One potential example is a licensing standard that some internet technology companies have developed called the Fair Reasonable and Non-Discriminatory (FRAND). This standard allows innovators to be appropriately rewarded for their innovation while not stifling the innovations of others.

2. The 2023 Merger Guidelines between the Department of Justice (DOJ) and the Federal Trade Commission (FTC) emphasize trends toward concentration, entrenchment of dominant positions, and serial acquisitions. What thresholds and evidentiary showings make sense in seeds and fertilizer? For example, how should agencies treat a roll up of regional seed companies or vertical deals tying traits to chemistry or platforms?

The consolidation announcements in 2017 and the lack of action by the DOJ since then have created this issue. When the competition ratio in any business is a CR2 at 90%, as it is in corn specifically, government oversight demands action.

Consolidation over the past decade has resulted in four firms controlling all the traits in the three major row crops of corn, soybeans, and cotton and a majority of chemistry platforms, and digital tools. In evaluating mergers or acquisitions, particularly those involving vertical integration across seeds, traits, chemistry, and digital platforms, I believe regulators should consider not only seed brand market share but also trait-stack market share.

When one firm owns multiple components of the production channel, it can create a closed ecosystem where switching becomes costly or impractical. Such structures can allow for differential access to traits, delayed allocation of genetics, or selective pricing that reinforces dominance. Mergers that further expand this type of integrated control should receive heightened scrutiny.

The 2023 action was too little, too late. More action is needed now to correct this market issue.

3. Could you please provide us with some examples of where rebate ladders or the threat of lost allocations shut out rival brands at the state/county/local level? What information would you share with the appropriate federal agencies about these practices?

Many independent companies have already shared information with federal agencies. Although I must respect confidentiality obligations, I can state that rebate programs combined with royalty increases have created economic pressures that disadvantage independent firms relative to captive brands.

These programs often make it difficult for independents to compete on an equal footing and can affect dealer and customer choices at the local level. When rebates are structured in tiers or tied to loyalty requirements, independents can be effectively excluded despite offering competitive products.

4. Could you describe recent incidents, dates, counties, and how it impacted acres, where a supplier or retailer used rebate leverage or allocation delays to punish switching? If such incidents occurred, did you share that information with the appropriate federal authorities?

I cannot provide specific dates, locations, or customers in this public forum due to confidentiality obligations and concerns about retaliation. However, I can describe how these programs generally operate.

Rebates are frequently tied to year-over-year volume requirements. Weather events such as widespread prevent-plant years can cause dramatic, uncontrollable volume swings. Returned seed does not always count toward annual totals, and missing a tier can result in losing the entire rebate (and, quite often, their profit) for the year.

Additionally, some dealer programs from the dominant firms can provide significant rebates only when the dealer commits the vast majority of purchases to a dominant platform, effectively discouraging them from carrying independent brands.

5. Will you commit to itemized invoices, seed price vs. trait/tech fees, so an Iowa farmer can compare a 2025 hybrid across brands apples-to-apples?

Most technology providers require confidentiality regarding trait fees and do not permit companies to disclose itemized trait costs to farmers. Independent companies must sign agreements that restrict disclosure of pricing structures. Increased transparency would benefit farmers, but current agreements generally prohibit it. Transparency is important, but non-discriminatory trait pricing is as important between independent companies, dominant firms' own captive brands, and their "favored" companies.

6. Restrictive licensing and pricing practices for GM seeds have been a cause of concern. Which specific practices, if halted by appropriate government intervention, would have the most positive impact on promoting competition in the seed market and reducing the prices that farmers pay for seed?

Royalty and licensing practices have significant effects on independent companies. In general, independents pay published royalties while captive brands may receive internal pricing advantages or bundled incentives. This can result in situations where independent companies face higher effective input costs.

In addition, cross-licensing and favored-nation arrangements among larger firms can restrict access to certain genetics or traits. Establishing standards similar to FRAND frameworks—ensuring fair, reasonable, and non-discriminatory licensing—could improve parity and enhance overall competition.

7. As of October 28, 2025, what is the prevailing price per metric ton of monoammonium phosphate (MAP) in the United States compared with Brazil, and what are the principal causes of any price differential(s)?

I do not have direct knowledge of current MAP pricing in the United States or Brazil, as our company does not operate in the fertilizer market.

Questions from Senator Booker
for John Latham – Latham Quality, Inc.
Hearing on “Pressure Cooker: Competition in the Seed & Fertilizer Industries”

1. Most large seed firms selling commodity crop seeds require smaller seed firms like yours to sign purchasing contracts before they even have access to the seeds they have purchased. While purporting to protect companies’ intellectual property, these contracts include provisions that hurt smaller seed firms. For example, most agreements allow the independent firms to use seeds for only one growing season, allow the large seed firms to access the smaller firm’s property for crop data collection and observation not only that growing season but years after, as well as permit the large firms access to the smaller firm’s production and sales records.¹

- a. Which commodity crop seeds that you sell require signed contracts before gaining access to seed stock?

All major traited corn and soybean technologies require licensing agreements before companies may access seed or traits. These agreements typically include provisions regarding single-season use, reporting, inspections, and record verification.

- b. What do the contract provisions entail? Typical contracts include:
Single-season use restrictions (no saving seed)

While agreements vary, they commonly include:

- Restrictions on seed use and growout
- Frequent reporting and forecasting obligations (of products, customers, etc.)
- Audit rights allowing the trait owner to inspect seed companies’ financials, production volumes, and sales records (by product, customer, customer location, etc.)
- Field access for stewardship or compliance reviews
- Limitations on geographic markets and testing
- Prepayment or financial assurance requirements

These provisions are generally non-negotiable due to market concentration.

¹ Spiegel et al., *Seeds for Rent: The Farmers’ Guide to Technology Use Agreements*, CENTER FOR AGRICULTURE & FOOD SYSTEMS (Feb. 2025), <https://cafs.vermontlaw.edu/wp-content/uploads/seeds-for-rent-the-farmers-guide-to-technology-use-agreements-2025.pdf>.

- c. How would you manage your seed business differently in the absence of these contract provisions?

Compliance obligations require *significant* administrative resources. Absent some of these requirements, independent companies could devote more attention to breeding, testing, and service to growers, particularly in underserved regions where regionally adapted genetics are needed.

- d. Do these contracts allow the seed firms to review your client lists?

Independent companies must submit Grower Point of Sale (GPOS) data to verify grower licensing and compliance. While our own pricing information can be redacted, these submissions inevitably provide dominant firms with nearly an unlimited visibility into the market. Receiving all customer data from nearly all competitors puts others at a strategic disadvantage. Many agreements also contain audit rights covering product guides, seed tags, and other materials.

2. The predatory licensing contracts large seed firms force on smaller seed firms each growing cycle can be extremely lengthy, often dozens of pages. They are also very detailed, requiring an attorney's review. The contract terms available to smaller seed firms also barely differ among the largest seed companies. Due to the market dominance of only a few seed firms, commodity firms have few options but to accept these contracts' restrictive terms.²

- a. Have you been able to hire an attorney to review each contract you receive from a large seed firm?

Independent companies often engage attorneys, but the agreements are lengthy and technically complex. Reviewing every clause thoroughly is challenging for smaller firms given both cost and time constraints, especially since the agreements are not subject to negotiation.

- b. Are you always aware of what you are agreeing to?

We make our best efforts to understand the agreements, but the combination of legal complexity and lack of negotiation renders complete understanding difficult for smaller companies with limited legal resources.

² *Id.*

- c. Do these contracts often bind you to arbitration agreements?

Many agreements include mandatory arbitration and designate venues favorable to the dominant firm. Given the long production cycle in seed, delays in resolving disputes can significantly affect independent companies.

- d. Do you have any opportunity to negotiate these contracts?

Independent companies rarely have much right to negotiate, because the dominant firms know that we have no other viable options if we want to remain competitive. Because of these agreements and the expensive inventory that independent companies own and bear the risk for, there are very limited alternatives for independent companies to exit these agreements and/or the industry as a whole. Many agreements also have clauses that require an independent company to get prior approval from the dominant firm to maintain their license if they sell their firm.

3. Researchers recognize that thriving mid-sized farms can boost resilience in the face of extreme weather, pandemics, and other disruptions.³ However, for decades, the number of midsize farms has been declining.⁴ Consolidation within the agricultural sector, predatory contracting, and vertical integration have made market access difficult for mid-scale farmers. Today, many midsize farms cannot successfully compete in commodity markets.



- a. How has consolidation in the agricultural sector impacted midsize farms you work with?

Consolidation has reduced the number of local dealers and limited access to regionally adapted genetics. Larger farms often receive more favorable terms, while small and mid-sized operations may face higher costs and fewer choices.

- b. How would increased competition in the seed and fertilizer industry help small and mid-sized farm viability?

More independent companies mean more localized products helping mid-sized farmers fight against local seed diseases. Transparency of trait technology pricing along with providing fair access to lower cost seed (including post-patent technologies) would provide a huge benefit to small and mid-sized farmers. Ending vertical lock-in allows farms to choose the best product for their fields.

³ *Supporting Midsized Producers*, MULTISTATE RESEARCH FUND IMPACTS (Dec. 2023), <https://www.mrfimpacts.org/single-post/supporting-midsize-producers>.

⁴ *Id.*

4. While many seed technologies include patented inventions, once those patents expire major seed companies still benefit financially, manipulating a system intended to encourage post-patent competition. For example, in your testimony you discussed how smaller seed firms such as yours are being charged extremely high royalties even for off-patent technology. During the past five years, royalties for seed corn have gone from 42% of the costs to now 70% of the costs for a bag of corn.⁵

- a. Please describe how the off-patent royalty programs large seed agribusinesses employ impacts your business.

As consolidation has increased, access to diverse genetics has narrowed. The dominant seed firms have increased their trait and genetic royalties to independent companies with the numbers you state from 42% to 70% of a bag of corn. The vast majority of those increases are passed along to the farmer and/or absorbed by the independent companies. Many times, the small to mid-size farms take the highest price increases. These price increases aren't just on the newest technology, but on older technologies that are off-patent or are soon to be off-patent. The dominant firms combine genetic and trait patents to extend patent life well beyond the 20 years patents are supposed to last. We have many farmers in our area that either don't need expensive traits because they have less insect pressure, or their fields are on marginal ground that can't produce more than 150-bushel-per-acre corn. These farmers should have options to make their farms profitable and not be forced into expensive technology because they have no other options.

- b. How do these royalty programs impact the prices that you charge farmers for seeds?

High royalty costs translate directly into higher seed prices for farmers. Farmers cannot see trait fees on an invoice and often don't realize that the majority of their cost is royalties going to the dominant firms and not seed genetics. The system prevents price competition and suppresses innovation.

5. Over the past 100 years, farmers, universities, plant breeders and others have transformed the seed market by producing seeds that are more resilient and economically productive.⁶ However, corporate capture of our seed industry has manipulated this system such that

⁵ Chris Clayton, *Ag Input Consolidation Scrutinized*, PROGRESSIVE FARMER (Oct. 28, 2025), <https://www.dtnpf.com/agriculture/web/ag/columns/washington-insider/article/2025/10/28/senators-probe-market-power-behind>.

⁶ U.S. Dept. of Agric., *Agricultural Marketing Service, More and Better Choices for Farmers: Promoting Fair Competition and Innovation in Seeds and Other Agricultural Inputs* (Mar. 2023), <https://www.ams.usda.gov/sites/default/files/media/SeedsReport.pdf?utm>.

plant breeders have less autonomy, seed stock is less resilient, and farmers are losing opportunities to adapt to a rapidly changing climate.

- a. In your experience, what is the impact of a consolidated seed industry on the ability of farmers and entrepreneurs to develop new seeds that are responsive to local changing climates?

The dominant firms focus on broad-acre national hybrids, not regionally adapted solutions. Access to elite genetics is rationed or delayed for independents since consolidation. The lack of new corn breeders into the marketplace and having the vast majority of genetics owned by just two firms has narrowed genetic diversity and weakened resilience to disease and stress.

- b. How does corporate dominance by a few powerful players in the seed industry stifle innovation?

The rebates and other programs make it very difficult for new breeders or new gene editing companies to enter the market. The dominant firms control the industry so they don't need to invest in innovation because they will keep their market share because of the lack of competition. We have seen fewer new technologies come forward and less investment in innovation. Dominant firms often retire traits and genetics early before they go off-patent or lock newer traits behind their own brands. Independent breeders cannot test new combinations of genetics and traits without restrictive contracts. Farmers lose access to small-company innovations, especially region-specific disease tolerance, drought resilience, and soil interaction traits.

6. Corporate consolidation in the seed and fertilizer industry has only worsened over the past decade. In 2017, Dow and Dupont merged into a new firm, Corteva, and in 2018, ChemChina acquired Syngenta, and Bayer acquired Monsanto.⁷

- a. How have these recent mergers impacted your business?

Post-merger agreements have generally become more complex and more restrictive, with increased reporting, monitoring, and prepayment requirements. Loyalty programs often span seed, chemistry, and digital platforms, increasing switching costs for both retailers and farmers.

⁷ U.S. Dept. of Agric., Econ. Rsch. Serv., *Mergers in Seeds and Agricultural Chemicals: What Happened* (Feb. 15, 2019), <https://www.ers.usda.gov/amber-waves/2019/february/mergers-in-seeds-and-agricultural-chemicals-what-happened>.

- b. Have royalty prices that you and farmers pay to large seed firms changed since 2017? How?

Royalty rates have risen significantly, including technologies that are off-patent or near expiration. This trend has increased the cost of goods sold for independent firms and, ultimately, raised prices for farmers.

- c. How have the loyalty programs that Corteva, Syngenta and Bayer offer been modified since these mergers took place?

Loyalty structures have become more complex and more integrated across product categories. These programs can reduce dealer and farmer flexibility, limit competition within local markets, and contribute to higher prices.

Senate Judiciary Committee Hearing
“Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries”
Andrew LaVigne
Questions for the Record

QUESTIONS FROM SENATOR GRASSLEY

1. Where have the promised efficiencies from consolidation shown up for growers - lower prices, better yields or better service?

ASTA’s mission is to contribute to the success of U.S. farmers, global agriculture, and food security by creating an environment where each ASTA member company has the opportunity to build an innovative, economically sustainable, and successful business. ASTA is not involved in the individual business transactions, structures, or strategies of its members. As a trade association, we work to address premarket and precompetitive issues on behalf of the entire U.S. seed sector.

2. Should Congress require disclosure or similar “sunshine” rules,” such as in the healthcare industry, so growers can determine when dealer incentives may be influencing product recommendations?

ASTA is not aware of any specific bills or proposals on this issue relevant to the seed sector. ASTA would be pleased to review any specific proposals and meet with your staff to discuss them as appropriate.

3. What specific license clauses or stack dependencies keep royalties flowing on supposedly off patent traits, and what straightforward and clear disclosures should farmers see on invoices to know what they’re paying for?

ASTA supports a strong intellectual property system that enables innovation in the seed sector and has worked to develop the AgAccord, a predictable and transparent mechanism to address patent expiration for agricultural biotechnology events. More information about the AgAccord is available here: <https://www.agaccord.org/?p=about>. For additional information, please see the response to Question 1.

4. Will you commit to itemized invoices, seed price vs. trait/tech fees, so an Iowa farmer can compare a 2025 hybrid across brands apples-to-apples?

Please see the response to Question 1.

5. Intellectual property fees reportedly account for 50% to 70% of the cost of corn seed. Are you confident of the validity of all of the patents used to justify these royalty fees that farmers and smaller seed companies pay?

Please see the response to Question 3.

6. Does ASTA receive any funding from the USDA, and if so, how much?

ASTA is a proud to partner with USDA as one of the over 70 U.S. Market Development Program Cooperators. Through these cooperator programs, ASTA organizes food- and agriculture-focused trade promotion activities to help U.S. exporters develop and maintain international markets for seeds. This work is consistent with ASTA's goals to build export opportunities for U.S. seeds, ensure the U.S. seed sector is represented in international trade shows and policy discussions impacting our industry, and address regulatory and trade barriers that prevent the commercialization of improved seed varieties.

ASTA currently receives cooperator funds under several USDA programs, including the Market Access Program (MAP), the Foreign Market Development (FMD) program, and the Regional Agricultural Promotion Program (RAPP). The funding levels that ASTA receives from USDA for these programs varies by program type and program year. Over the past three years, ASTA has received an annualized value of approximately \$1-1.2 million per calendar year.

7. Will you support the recent Memorandum of Understanding between USDA and the DOJ that is intended to ensure agricultural producers, independent seed companies, and agricultural retailers are treated fairly?

ASTA strongly supports efforts by federal government agencies to cooperate with one another and promote efficiency in using government resources.

8. With respect to ASTA's revenue from its member companies, which member companies are the three largest contributors to ASTA's revenue?

ASTA maintains a publicly available membership application for members of the seed

sector wishing to join with ASTA in advancing its mission of being “an effective voice of action in all matters concerning the development, marketing and movement of seed... throughout the world. ASTA promotes the development of better seed to produce better crops for a better quality of life.” The application, which sets out ASTA’s dues structure, is available at <https://www.betterseed.org/wp-content/uploads/Updated-ASTA-Membership-Application-February-2024.pdf>.

QUESTIONS FROM SENATOR BOOKER

1. What impacts have President Trump’s new tariff policies had on your association’s members?
 - a. In the short term, how have these tariffs affected your members’ operations, costs, and competitiveness?
 - b. Looking ahead, what long-term consequences do you anticipate these policies will have for your industry and its global position?

The U.S. agriculture sector is among the most innovative in the world, because the U.S. seed sector uses a combination of innovative technologies and seed trade to speed the development of new crop varieties for farmers. U.S. seed subsequently serves as the foundation for hundreds of billions of dollars in U.S. agricultural exports into over 100 markets. In 2024, the \$1.7 billion in total U.S. seed exports and \$1.1 billion in total U.S. seed imports represented a small fraction of the U.S. trade balance, resulting in a trade surplus for the U.S. seed industry with more exports than imports. Yet, over the same timeframe, U.S. exports of agricultural goods that depend on the seed industry were valued at \$179 billion, and the U.S. agricultural sector was estimated to support \$9.5 trillion in economic value and 1 million American jobs.

Unlike other agricultural goods, which are exported primarily for immediate use or processing in food and feed, the seed sector relies on trade for commercial sales, seed production, and as a fundamental step of years-long research and development (R&D) pipelines. For example, counter seasonal production of seed in warmer locations during U.S. winter months allows the sector to complete additional breeding cycles; and seed production in specific environments that are free from pests and diseases ensures the cleanest seeds reach U.S. farmers. In certain cases, crops might even require certain weather or hours of sunlight to trigger plants to flower — and thus produce seeds. These processes can require movement of seed between as many as six or seven countries throughout the R&D lifecycle before a seed is sold to a farmer.

ASTA and our members are already reporting significant increases in costs associated with tariffs. Tariffs have been assessed at \$300,000 on single shipments, and many ASTA

members are anticipating several million dollars in additional expenditure per company before the end of the 2025 calendar year alone. As an industry that operates at the top of the agricultural value chain with low margins and low trade volumes, those costs are highly significant. Many small businesses in the U.S. seed sector cannot continue operations at those costs. This will mean less research and development (R&D) within the United States, fewer planting choices, and potentially higher prices for U.S. farmers.

Furthermore, decreases in seed imports could cripple U.S. companies that provide technology-intensive seed processing and conditioning services that ensure maximum seed performance for farmers. If these businesses are forced to close or relocate due to costs, these services will no longer exist within the United States. Estimated yield losses without these services in certain U.S. vegetable crops could reach 80-100 percent, which would significantly harm U.S. farmers and consumers. Elimination of tariffs on seed movement remains a top priority for ASTA and our members. The current tariff rates on many U.S. trading partners threaten U.S. competitiveness, productivity, and technological leadership in the seed sector.

2. In your written testimony, you reference a 2022 study indicating that it costs approximately \$115 million and over 16 years to bring a biotech seed variety to market, with nearly 40 percent of that cost, about \$46 million, attributable to regulatory compliance.
 - a. In your view, which regulations are the most burdensome and do not provide a net benefit to consumers?
 - b. Can you provide examples of how regulations create barriers to entry for small and medium-sized businesses? Do these barriers include cost-related challenges?

The full report, *Time and Cost to Develop a New GM Trait*, can be found at <https://croplife.org/wp-content/uploads/2022/05/AgbioInvestor-Trait-RD-Branded-Report-Final-20220512.pdf>. Biotech seed developers must meet U.S. regulatory compliance for biotech crops intended to be cultivated in the U.S. In addition, to facilitate trade of harvested products, biotech seed developers also must navigate regulatory compliance in major importing countries. Aside from the U.S. EPA, most regulatory agencies in the U.S. and around the world do not charge a fee for biotech crop approval applications. The cost of regulatory compliance comes from the scientific regulatory data that must be generated, and the amount of time the regulatory and approval processes take. In some countries, seed companies can only submit applications for approval after the biotech crop has been approved in the U.S. This creates unnecessary asynchrony between approvals and delays U.S. farmers access to new biotech traits.

One biotech product’s regulatory data package may be reviewed by several regulatory agencies globally, each operating on its own timeline and often with varying data requirements. In the last three decades of biotech crop usage, these repetitive reviews, especially in the case of food and feed safety, do not provide a net benefit to consumers in the U.S. or around the globe.

3. To address the pressures that farmers and seed producers currently face, you propose “right-siz[ing] regulatory compliance processes.”
 - a. Would this approach involve tailoring regulations based on specific business characteristics, such as size or crop type?
 - b. Can you provide examples of some of these reforms?

Rightsizing regulatory compliance should be based on regulatory experiences, the latest scientific information, and applying the concept of risk-proportionality. Regardless of the size of the company or the crop type, biotech seed developers benefit from consistent, predictable, and durable regulatory decision making. With regards to biotech crops, the USDA, the EPA, and the FDA need to reduce duplicative reviews and enhance coordination. ASTA has made substantive comments over the last several years in each Administration’s regulatory streamlining efforts. We support language in the Committee passed Farm, Food, and National Security Act of 2024 (H.R. 8467) that clarifies EPA’s regulatory scope and removes excessive regulatory burdens for plant breeders.

4. In your view, can the United States remain competitive without investment in public-sector research? What do you think would happen if we relied solely on the private research sector for innovation and seed improvement?

The global competitiveness of the U.S. seed sector, U.S. farmers, and the domestic food value chain is built on sustained investment in U.S. public sector research, including investments in our land grant universities, research institutions, and the USDA. This public investment is complemented by private sector investment.

ASTA strongly supports robust and sustained investment in public sector research. Adequate research and development funding for U.S. agencies, particularly programs and initiatives within USDA, is essential for maintaining the United States’ position as a world leader in agricultural innovation and seed technologies. For example, consistent funding of the USDA National Plant Germplasm System (NPGS) is extremely important for the U.S. seed sector. The NPGS serves as the U.S. gene bank for all crops and wild relatives, allowing any public or private research scientist to access varieties used in breeding and agricultural production. The true value of the NPGS goes beyond merely storage for specimens. As a dynamic, living seed bank, the NPGS serves as an

unparalleled source where U.S. farmers, companies, and researchers can request access to diverse plant materials at any time, thus powering innovation through plant breeding, research, and public-private partnerships. Research using NPGS collections has directly increased U.S. farmers' income and livelihoods through the development of innovative seeds and crops that are used by farmers every day. Additionally, the seed sector relies on a functioning NPGS to deposit seeds, which is a condition for receiving intellectual property rights under Plant Variety Protection (PVP), and to access varieties once they are no longer under protection.

There are numerous other examples where innovation in smaller acreage crops, vegetables, and fruit have depended on public sector research and investment. For example, Tasti-Lee tomato is the best-selling field round tomato in the U.S., and it is a hybrid produced by a private seed company from parents bred at the University of Florida with funding from growers. Lettuce is one of the most widely-consumed vegetables in the U.S., and is produced year round in California and Arizona. Scientists at the University of California Davis (UC Davis) and the ARS Crop Improvement and Protection Research Unit are collaborating to develop and release varieties and breeding lines for the private sector, with critical resistance to diseases. Finally, through a partnership with USDA, several leading academic institutions and Plant Sciences, Inc. (PSI), an agricultural research company, will study Rubus, or caneberry crops, and identify natural variation for future breeding and gene editing opportunities. Scientists and researchers from Pairwise, PSI, the University of Arkansas, the USDA Agricultural Research Service (ARS) in Corvallis, Oregon, Cornell University and North Carolina State University, will collaborate to identify and characterize the genetic diversity in blackberries, red raspberries and black raspberries as well as multiple wild caneberry species such as salmon and thimble berries.

Hearing on “Pressure Cooker: Competition in the Seed & Fertilizer Industries”
Senator Grassley, Chairman
Questions for the Record: Dr. Diana Moss – Progressive Policy Institute (PPI)

1. In your opinion, what practical steps would help aspiring and new entrants in the seed and fertilizer industries reach farmers?

A major step to opening up markets for smaller firms seeking to enter and get a foothold in agricultural biotechnology markets is to prevent large, powerful firms from “tying” the sale of products to related products, or “bundling” proprietary products so that when a farmer breaks the bundle, they lose discounts. These practices can have the effect of limiting entry by smaller rivals. Bundling is likely anticompetitive and raises barriers to entry and prices to farmers. While the FTC is already looking at bundling involving pesticides sold by Corteva and Syngenta, the agencies should take a deeper look at bundling practices in other markets, such as seeds and agrochemicals.

2. The 2023 Merger Guidelines between the Department of Justice (DOJ) and the Federal Trade Commission (FTC) emphasize trends toward concentration, entrenchment of dominant positions, and serial acquisitions. What thresholds and evidentiary showings make sense in seeds and fertilizer? For example, how should agencies treat a roll up of regional seed companies or vertical deals tying traits to chemistry or platforms?

Guidelines 6, 7 and 8 in the 2023 Merger Guidelines address mergers that entrench a dominant position, create a trend toward concentration, are part of successive or serial acquisitions. These guidelines are essential in today’s agricultural markets where dominant firms are not a feature. A starting point for applying these theories of harm to future mergers is establishing the pattern of merger-driven concentration in genetic traits, traited seed, agrochemicals, and fertilizer markets. High levels of concentration are another threshold, and acquisitions that have followed in quick succession, especially in certain product and geographic markets could provide substantial evidentiary support for bringing merger cases under the theories in guidelines 6-8.

3. Does the American Soybean Association (ASA) plan to conduct a study on how concentration in U.S. agriculture impacts prices and farmer choice?

Presumably, the question intended to ask if the Progressive Policy Institute (PPI) plans to launch such a study. Yes, PPI does intend to conduct and study within the next 6 months.

4. As of October 28, 2025, what is the prevailing price per metric ton of monoammonium phosphate (MAP) in the United States compared with Brazil, and what are the principal causes of any price differential(s)?

I would need to do more research to study long term price differentials between MAP in the U.S. and Brazil. A number of factors affect price differentials, including imports, demand, and transportation costs.

Senate Judiciary Committee Hearing
“Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries”
Diana Moss
Questions for the Record
Submitted November 4, 2025

QUESTIONS FROM SENATOR BOOKER

1. In August of this year, President Trump revoked an executive order directing the U.S. Department of Agriculture (USDA) and Federal Trade Commission (FTC) to work together to address consolidation in the food system and promote fairness and competition for farmers and consumers.¹ He also terminated a \$15 million USDA program that provided resources to state attorneys general to support antitrust enforcement and investigations into unfair corporate practices in the food and farm sector.²

- a. How do these actions affect the federal government’s ability to effectively address anti-competitive practices in the agricultural sector?

Both of the Trump Administration’s actions work to prevent, and even undermine, strong antitrust enforcement in food and agriculture markets. The merger clearance process shows that the FTC or DOJ assign mergers cases based on agency expertise in different parts of the supply chain. For example, DOJ takes all food processing and some agricultural input mergers while the FTC focuses on food manufacturing, retail grocery, and other input mergers. This balkanized division of merger cases impedes the ability of enforcers to consider how competition in one part of the supply chain affects competition in other parts of the supply chain, as well as the impact of consolidation on the entire supply chain. The Executive Order would have focused on improving coordination and strengthening enforcement across both agencies, the states, and USDA, to support competition, consumers, and workers.

- b. How do these actions affect the states’ ability to effectively address anti-competitive practices in the agricultural sector?

The states are a vital part of the “three legged stool” of federal-state-private enforcement in the U.S. Many competition issues in food and agriculture have significant local and regional market impact that highlights the important role of the state AGs. More resources would have enabled the states bring cases, sign on to federal cases, and otherwise improve their capacity to more vigorously approach enforcement in food and agriculture for the benefit of consumers and workers.

¹ Exec. Order, Revocation of Executive Order on Competition (Aug. 13, 2025), <https://www.whitehouse.gov/presidential-actions/2025/08/revocation-of-executive-order-on-competition/>.
² Lisa Held, *USDA Ends Program to Help States Fight Monopolies*, CIVIL EATS (Sept. 26, 2025), <https://civileats.com/2025/09/26/usda-ends-program-to-help-states-fight-monopolies/>.

- c. What were the benefits of the USDA and FTC working together to address consolidation in the food system?

Antitrust and regulation both play important roles in promoting competition in the food and agriculture sectors. Price discovery is particularly important and USDA made significant strides under the Biden Administration in improving and enhancing the agency's capabilities that would have directly supported antitrust enforcement actions. The same is true of USDA's ability to collect information on anticompetitive practices in agricultural markets, such as those directed at stifling competition from smaller players. This type of cross-agency coordination is both helpful and essential for protecting competition, consumers, and workers.

- d. How do these actions impact the federal government's antitrust enforcement capacity?

By reducing the level of coordination between USDA and the antitrust agencies, the federal government has less ability to anticipate, identify, and take enforcement action against harmful mergers or practices.

2. Given the high levels of market concentration resulting from recent waves of consolidation in the agricultural biotechnology sector, such as the Monsanto-Bayer, Dow-DuPont, and Syngenta-ChemChina mergers, how do you assess the impact of this consolidation on seed prices, product quality, and innovation? Additionally, what are the implications for small and medium-sized biotechnology firms trying to enter or compete in the market?

As I noted in my testimony, the number of larger agricultural biotechnology firms was reduced from six to three in the space of a few years (2016-2018). While the elimination of important head-to-head competition in markets was addressed through targeted remedies in both the Dow-DuPont and Bayer-Monsanto mergers, the cases did not address other important competitive issues resulting from the creation of vertical, multi-level systems. These include: (1) stronger incentives to engineer traits, seeds, agrochemicals, and digital farms not to interoperate with rival products; (2) stronger incentives for the remaining few agbiotechs to "divide up" innovation markets for genetic traits; and (3) higher barriers to entry for small and medium traits, seeds, or chemicals firms to enter markets.

3. In your view, does industry consolidation into three major firms increase the risk of coordination that limits the variety or regional suitability of stacked-trait products for farmers?

Yes. With far less competition than there was before the large agbiotech mergers in the late 2010s, there are stronger incentives to coordinate to divide up product and even geographic markets for certain stacked-trait products. This harms farmers by raising prices for technology, limiting choice, and forcing them to purchase products that they do not want or need.

Senator Peter Welch
Senate Judiciary Committee
Written Questions for Diana Moss
Hearing on “Pressure Cooker: Competition Issues in the Seed and Fertilizer Industries”
Tuesday, October 28, 2025

In today’s seed market, most corn and soybean varieties are sold pre-treated with neonicotinoids coatings, leaving farmers with few or no untreated options even when they don’t want or need these chemicals. Although intended to protect crops from pests, neonicotinoids have become a major factor in pollinator population decline, like honeybees. Compounding the issue, just four companies control more than half of the nation’s commodity seed sales, limiting opportunities for small, independent seed companies to offer alternatives and forcing many farmers to rely on costly brand-name seeds.

1. With Vermont becoming the second state to limit the use of pre-treated neonicotinoid seeds, what steps can we take to increase competition in the market for seeds and ensure farmers who choose to forego neonicotinoid-treated seeds have access to the products of their choice?

Consolidation in the seed markets are a leading reason why U.S. farmers pay higher prices, face less innovation, and have less choice in products. Practices such as bundling products together force farmers to pay for products that they do not need or want, in order to get the products that they do need and want. These factors collectively stifle competition from smaller, independent seed companies. Obtaining conventional, Non-GMO seed and seeds that are not treated or conditioned has gotten more difficult with consolidation, concentration, and high barriers to entry for smaller companies.

Perhaps the best way to facilitate the entry and viability of smaller players is for antitrust enforcers to: (1) more vigorously enforce Section 7 of the Clayton Act (mergers); (2) bring cases under Section 2 of the Sherman Act (monopolization) to combat harmful practices that allow large agbiotechs to maintain and extend monopoly positions in genetic traits, seed, and agrochemical products.

Congress should also take a close look at U.S. patent laws to consider how allowing minor modifications to seed-related patents can extend harmful monopolies and forestall competition from smaller rivals and generics. As part of this effort, the good work of the FTC and lessons learned in combatting the abuse of patent protection to stifle competition in generic drugs can and should port over to the seed industry.

U.S. Senate Committee on the Judiciary
Pressure Cooker: Competition Issues in the Seed and Fertilizer Industries
 October 28, 2025
 Questions for the Record
Mr. Caleb Ragland

Senator Charles Grassley

1. High concentration in the crop-input supplier market can erode a farmer's leverage to fairly negotiate on a level playing field, create fear of retaliation, limit choices, and ultimately results in a more expensive Farm Bill "safety net" that puts American taxpayers on the hook for the bill. Is the Farm Bill safety net actually reaching farmers themselves, or have farmers essentially become a pass-through to crop input suppliers?

ASA has reviewed publicly available studies on the net transfer of government subsidies through farms to input suppliers, and the conclusions vary widely. While the pass-through benefits to input owners and suppliers are influenced by program design, we cannot say with certainty that farmers currently receive an ineffective level of programmatic assistance. Additionally, the data may be distorted because in some cases benefits are only provided when adverse outcomes occur. Without academic consensus and because of the complexity of the safety net system, ASA cannot conclude that farmers have essentially become a pass-through for crop input suppliers. However, it is important to note that soybeans have received a relatively small amount of Title 1 benefits from the farm bill when compared to other commodities.

2. Does the American Soybean Association (ASA) plan to conduct a study on how concentration in U.S. agriculture impacts prices and farmer choice?

ASA has not done an analysis to provide an informed position regarding the impacts of consolidation on input costs and options for growers. Two actions that may provide better analysis of the impact of consolidation are the joint U.S. Department of Justice and USDA investigation into agribusiness competition and the Fertilizer Research Act. These initiatives, taken together, may provide insight into what affects prices and how farmers could benefit from market oversight.

3. You testified about the high costs of seed and fertilizer. To what extent would further margin compression from rising input costs force you to shut down your farming operation, and how soon could that outcome occur if there is no relief?

Each farm has a unique cost structure¹. Older, larger, and more established operators tend to have enough equity reserves to withstand some economic pressures, including increased input costs. But smaller operations and younger farmers who are just starting out often have not had the time to build the equity and/or real estate portfolio to have the same financial and operational flexibility when margins are this tight. The number of farms in the U.S. has already declined by 14,950 farms (1%) over the most recent reporting year, leaving 1.88 million farms in operation² as of 2024. This number is likely to increase as more farmers face financial pressures in 2025.

4. During the hearing, it was noted that farmers cannot freely mix and match genetically modified (GM) seeds with different agrochemicals. Has this constraint further restricted your choice of cropping systems, beyond the limitations imposed by your region, weather, or soil conditions? If so, please describe specifically how this has affected your farming decisions.

Yes, it is true that certain seed varieties are often bundled for use with a specific chemical to ensure the best outcome and effectiveness for the farmer. While this may prove challenging for producers, this is why it is increasingly important that growers have access to all the tools in the toolbox in order to choose the best product for their operations. ASA continues to encourage the Environmental Protection Agency (EPA) to move forward with new chemistry registrations so the newest and most up to date technology is available. Additionally, prioritizing research is an essential part of providing growers with the options they need and deserve to efficiently produce a crop. Less innovation will mean less options for growers to choose from.

¹ Lim, K., McFadden, J., Miller, N., & Lacy, K. (2024). *America's farms and ranches at a glance: 2024 edition* (Report No. EIB-283). U.S. Department of Agriculture, Economic Research Service. <https://ers.usda.gov/sites/default/files/laserfiche/publications/110560/EIB-283.pdf?v=73025>.

² USDA National Agricultural Statistics Service, *Farms and Land in Farms: 2024 Summary*, (Feb. 14, 2025), <https://csmis.nal.usda.gov/sites/default/release-files/5712m6524/z316rz25j/db78w849h/fnlo0225.pdf>.

Senator Corey Booker

1. In a typical year, China buys more than half of all U.S. soybean exports.³ In President Trump's first term, soybean farmers lost significant market share when China imposed retaliatory tariffs on American soybean markets.⁴ However, President Trump's new tariff policies have had even more disastrous impacts on American farmers. Not only have farmers failed to regain market share lost during President Trump's first term, but the President's new obstructionist tariff policies led to effectively no soybean exports in June, July and August of this year.⁵ As Argentinian and Brazilian farmers are increasing exports to fill these gaps, American farmers will permanently lose critical international export markets.
 - a. In your opinion, what are the impacts of President Trump's new tariff policies for your associations' members?

There are multiple ways tariffs can impact U.S. soybean farmers. As outlined in my testimony before this committee, U.S. agriculture is reliant upon imports for key inputs like pesticides, fertilizer, and agriculture equipment components. Tariffs imposed on imports utilizing both the International Emergency Economic Powers Act (IEEPA) and Section 232 of the Trade Expansion Act of 1962 lead directly to increased costs for farmers when purchasing inputs.⁶ During the 2018 trade dispute and original Section 232 tariffs on imported steel and aluminum, domestic equipment production costs increased a staggering 78%, according to the Association of Equipment Manufacturers.

The utilization of tariffs can also lead to retaliatory tariffs by U.S. trading partners, as we have seen both in 2018 and in 2025 from China. In 2018, President Trump levied tariffs on imports from China under Section 301 of the

³ Joana Colussi & Michael Langemeier, *U.S. Soybean Harvest Starts with No Sign of Chinese Buying as Brazil Sets Export Record*, FARMDOC DAILY (Sept. 22, 2025), <https://farmdocdaily.illinois.edu/2025/09/us-soybean-harvest-starts-with-no-sign-of-chinese-buying-as-brazil-sets-export-record.html>; Philip Luck, Hugh Grant-Chapman, and Duc Minh Nguyet (Moon) Nguyen, Center for Strategic & International Studies, *When a Trade War Becomes a Food Fight* (Oct. 21, 2025), <https://www.csis.org/analysis/when-trade-war-becomes-food-fight>.

⁴ Tad DeHaven, *Trump's Trade Wars Harm Farmers and Taxpayers*, CATO AT LIBERTY BLOG (Mar. 26, 2025), <https://www.cato.org/blog/trumps-trade-wars-harm-farmers-taxpayers>; U.S. Dept. of Agric., Econ. Rsch. Serv., *The Economic Impacts of Retaliatory Tariffs on U.S. Agriculture* (Jan. 2022), https://ers.usda.gov/sites/default/files/_laserfiche/publications/102980/ERR-304.pdf?v=65376.

⁵ Joana Colussi & Michael Langemeier, *U.S. Soybean Harvest Starts with No Sign of Chinese Buying as Brazil Sets Export Record*, FARMDOC DAILY (Sept. 22, 2025), <https://farmdocdaily.illinois.edu/2025/09/us-soybean-harvest-starts-with-no-sign-of-chinese-buying-as-brazil-sets-export-record.html>; Philip Luck, Hugh Grant-Chapman, and Duc Minh Nguyet (Moon) Nguyen, Center for Strategic & International Studies, *When a Trade War Becomes a Food Fight* (Oct. 21, 2025), <https://www.csis.org/analysis/when-trade-war-becomes-food-fight>.

⁶ North Dakota State University Agriculture Trade Monitor, *IEEPA Tariff Escalation: What It Means for U.S. Food and Ag-Input Imports*, Exhibit 8, [IEEPA Tariff Escalation: What It Means for U.S. Food and Ag-Input Imports](#)

Trade Act of 1974, starting a tit-for-tat trade war between our two global economies. In response, China applied retaliatory duties against U.S. soybeans that reached up to 27.5%. These duties, combined with uncertainty in the trade relationship, severely constrained U.S. soybean exports to China. While that tariff battle was granted a reprieve when the U.S.-China Phase One agreement was signed January 15, 2020, it has since reignited after the imposition of IEEPA tariffs against China earlier this year. Following the October meeting between President Trump and President Xi that resulted in preliminary purchase commitments of our crop, the majority of retaliatory tariffs were removed. However, U.S. soybeans into China still face a 10% tariff differential compared to soybeans of South American origin. Retaliatory tariffs decrease the price competitiveness for Chinese customers and relegate U.S. soybeans to a less desirable status.

- b. What are the short-term consequences of President Trump's tariff policies?

As outlined in my full written testimony, tariffs can immediately lead to increased costs for farmers who are reliant upon imports for inputs. Tariffs also lead to decreased market access as global trading partners impose their own tariffs in response to U.S. tariffs, decreasing the value of U.S. commodities – like soybeans – in those important markets.⁷

- c. What are the long-term consequences of President Trump's tariff policies?

In addition to the economic damage imposed by tariffs, the utilization of tariffs can also lead to long-lasting consequences. U.S. soybean farmers are familiar with these consequences, as our industry was a major target during the 2018 trade war. While the Phase One agreement alleviated the pressure imposed by tariffs and restored market access, the reputation of the U.S. soy industry as a reliable provider of soybeans and soy products in global markets has been irrevocably damaged. Section 301 tariffs and the retaliatory trade actions have jeopardized our place in export markets, undermined the reliable reputation of the U.S. as a trading partner, and thus have damaged in-country relationships developed over decades and incentivized further competition from Brazil.⁸

⁷ North Dakota State University Agriculture Trade Monitor, *IEEPA Tariff Escalation: What It Means for U.S. Food and Ag-Input Imports*, Exhibit 8, [IEEPA Tariff Escalation: What It Means for U.S. Food and Ag-Input Imports](#)

⁸ American Soybean Association, *Soybeans Without a Buyer: The Export Gap Hurting U.S. Farmers*, <https://soygrowers.com/wp-content/uploads/2025/08/China-Trade-Paper-FINAL.pdf>

2. Researchers recognize that thriving mid-sized farms can boost resilience in the face of extreme weather, pandemics, and other disruptions.⁹ However, for decades, the number of midsize farms has been declining.¹⁰ Consolidation within the agricultural sector, predatory contracting, and vertical integration have made market access difficult for mid-scale farmers. Today, many midsize farms cannot successfully compete in commodity markets.¹¹

- a. How has consolidation in the agricultural sector impacted your members which are mid-sized farms?

Soybean farmer income is impacted by many factors including weather, trade, biofuel policies, pesticide and seed technology approvals, government programs and many other factors. While consolidation has been occurring, the trend has not occurred in a vacuum. The interconnectedness of markets and inability to observe the counterfactual render disentangling effects a difficult endeavor. As noted in our testimony, ASA has not done a focused analysis on the impacts of agribusiness consolidation. That being said, ASA is actively engaged with membership to better analyze this issue.

- b. Would increased competition in the seed and fertilizer industry help small and mid-sized farm viability? How?

ASA's philosophy and policies regarding the seed industry are pro-innovation, pro-competition, pro-free enterprise, and support for limited government intervention in the marketplace. Where government intervention is warranted, it should be to ensure a competitive marketplace, fair competition, and farmer choice. In the U.S., most soybeans are biotechnology varieties, with 95 percent of soybeans planted in 2021 containing at least one recombinant biotech trait. Several trait developers integrate biotech traits into their own germplasm, while others license traits to competitors or other seed companies that are not developers.

During a period of industry mergers that took place several years ago, many soybean growers had concerns that market consolidation might result in limited competition, slower development of traits and new soybean varieties, and increased seed costs. Thankfully, due to the responsible manner in which the

⁹ *Supporting Midsized Producers*, MULTISTATE RESEARCH FUND IMPACTS (Dec. 2023), <https://www.mrfimpacts.org/single-post/supporting-midsized-producers>.

¹⁰ *Id.*

¹¹ *Id.*

mergers and acquisitions were executed, soybean growers have generally not experienced these negative outcomes. Growers continue to have access to numerous varieties containing quality, high-yielding germplasm. We are currently observing robust competition between developers who provide dicamba herbicide-tolerant seed varieties and 2,4-D herbicide-tolerant varieties. Through regular engagement with market participants, we are also aware of other traits and varieties in development pipelines that will offer additional options to soybean farmers in future growing seasons.

Fertilizer alone is projected to account for 20 percent of operating costs for soybean farmers.¹² Prices for the two main fertilizers used on soybeans, phosphate and potash, have experienced dramatic increases due to international market volatility. Phosphate prices have increased by 60 percent in the past decade, and the price of potash rose nearly 10 percent this year alone.¹³ Having more domestic sources of these fertilizers would reduce reliance on foreign supply chains and offer more stable pricing.

¹² <https://www.ers.usda.gov/data-products/commodity-costs-and-returns>

¹³ <https://www.dtnpf.com/agriculture/web/ag/crops/article/2025/09/03/mixed-prices-fertilizers>

Hearing on “Pressure Cooker: Competition in the Seed & Fertilizer Industries”
Senator Grassley, Chairman
Answers for the Record: Mr. Corey Rosenbusch – The Fertilizer Institute (TFI)

1. Should Congress require disclosure or similar “sunshine” rules,” such as in the healthcare industry, so growers can determine when dealer incentives may be influencing product recommendations?

A: The relationship between the retail dealer’s agronomist and growers is built on trust and on a shared objective of sustainable productivity, rather than short term sales. There is little incentive for retailers to push products that don’t contribute to that goal.

2. As of October 28, 2025, what is the prevailing price per metric ton of monoammonium phosphate (MAP) in the United States compared with Brazil, and what are the principal causes of any price differential(s)?

A: As of October 28th 2025, the price of MAP per metric ton was \$680/mt in Brazil and \$790/mt in the United States.

Over the last 5-yrs, the USA has been anywhere from a \$40-150/mt premium vs Brazil in October because:

- *Brazilian agriculture is moving out of peak season, and demand is declining accordingly. As a result, the price directionally declines coming off seasonal peaks.*
- *By contrast, seasonal demand in the USA is increasing for the fall application season.*
- *Compared to the USA, Brazil’s imports include a greater share of relatively low-priced imports from China and other countries that tend to exert downward pressure on prices for MAP and other types of phosphate fertilizers in the country.*

Senate Judiciary Committee Hearing
 “Pressure Cooker: Competition Issues in the Seed & Fertilizer Industries”
 Corey Rosenbusch
 Answers for the Record

QUESTIONS FROM SENATOR BOOKER

1. In your testimony, you noted that China’s export restraints disrupted global markets and drove up costs for farmers here in the United States and around the world. From your perspective, what domestic steps can we take to counter or cushion the impact of foreign trade policies like these?

A: While the U.S. has robust domestic fertilizer manufacturing and production, the United States is a net fertilizer importer and relies on both domestic production and imports during busy spring planting and fall application periods. Our members compete fiercely with each other and hundreds of global competitors in a robust, global fertilizer market.

China has a powerful position in the global fertilizer market. It is the world’s largest consumer of all three macronutrients (nitrogen, phosphate, and potassium) and the world’s largest producer of nitrogen and phosphate. China’s state-supported, non-market driven buildup of substantial capacity and its subsequent government mandated export restraints have been highly disruptive to the global market, raising costs for farmers in the United States and worldwide, while chilling the growth of market-based capacity expansions outside of China.

Similarly, Russia, which has built up its fertilizer industry through a combination of domestic resources and non-market actions, including subsidies on upstream natural gas used in nitrogen product, has also recently imposed export restraints including a recent ban on sulfur.

Strengthening the domestic supply of fertilizers is the best strategy for countering China. Specific policies to advance U.S. fertilizer supply are:

- ***Appointment of a full-time USDA Fertilizer Economist*** to monitor market dynamics, improve transparency, and provide accurate, timely information to farmers and policymakers.
- ***Advancement of national policy to expand domestic fertilizer production***, led by the Secretary of Agriculture and coordinated across federal agencies.
- ***Streamlining of federal permitting and regulatory reviews*** to accelerate construction and modernization of fertilizer plants, mines, and infrastructure.

- **Encouraging energy policies that maintain affordable and reliable natural gas supplies**, the key feedstock for nitrogen fertilizer, to safeguard U.S. production and competitiveness.
- **Promoting a more open, fair, predictable, and transparent trading environment** that empowers the continued growth of a resilient, competitive, and sustainable fertilizer industry for our farmer customers.
- **Accelerating innovation and emerging fertilizer technologies**, including advanced nutrient formulations and enhanced efficiency fertilizers consistent with the 4R Nutrient Stewardship framework.
- **Further encouraging grower adoption of 4R Nutrient Stewardship practices** (applying the right source, rate, time, and place) to support farmers getting the most out of every fertilizer dollar.
- **Identifying productive science-backed streams for recycled production materials from mined sources.**

2. What impacts have President Trump's new tariff policies had on your association's members?
 - a. In the short term, how have these tariffs affected your members' operations, costs, and competitiveness?
 - b. Looking ahead, what long-term consequences do you anticipate these policies will have for your industry and its global position?

A: Because we represent companies throughout the entire value chain, including fertilizer manufacturers, importers, and retailers, trade policy does not uniformly impact all our members or the three key macronutrients.

Fertilizer production is highly capital-intensive. Every year, U.S. fertilizer producers are investing billions of dollars to maintain and upgrade their facilities; that investment has helped foster the reliability and strong capacity utilization of the U.S. industry and has, in many cases, expanded U.S. production over nameplate capacity, all of which is making more fertilizer available to America's farmers. Over the past decade, billions of dollars have also been invested to expand U.S. fertilizer production capacity, including in Iowa and Louisiana.

While the U.S. has robust domestic fertilizer manufacturing and production, it is a net fertilizer importer in the aggregate. There are, however, differences across the three macronutrients.

- *With its access to affordable natural gas used as the primary feedstock, the United States is the fourth largest nitrogen producing nation. The largest nitrogen producers -- China (31%), India 10%), and Russia (8%) -- have each engaged in significant non-market activities to build their industries.*

- *With its geologic deposits, the United States is the fifth largest producer of phosphate, after China (43%), Morocco (13%), Russia (9%), and Saudi Arabia (8%). China, Morocco, and Russia have each engaged in significant non-market activities to build their industries.*
- *While the United States has some domestic production of potash, it imported most of its domestic potash supply in 2024, as it has for decades. Only 15 countries produce potash, which is mined from geologic deposits, but Canada (33%), Russia (19%) and Belarus (15%) are the dominant producers.*

In 2025, overall U.S. domestic fertilizer supply has experienced a significant decline in U.S. imports across all three macronutrients. Imports of phosphorous and potassium were already down in the first quarter of 2025 relative to the same period in 2024. Imports in Q1 2025, relative to Q1 2024, were down 20% for phosphorous and 7% for potassium. In contrast, imports of nitrogen over the same period, Q1 2025, relative to Q1 2024, were up 12%, with Russian nitrogen imports, that do not face any tariffs and are produced with subsidized, low-cost gas, representing the predominate share of U.S. nitrogen imports.

Global fertilizer supply encompasses many parts of the world, but each nutrient has a unique vulnerability to supply shocks. Geopolitical events such as ongoing global conflicts in the Middle East and Europe; government controls; subsidies, and other policies impact production, exports and consumption; and the evolving nature of global trade policy are impacting the global market (and prices) for fertilizers.

Since the beginning of 2025, billions of dollars of fertilizer industry investment in new U.S. greenfield production have also been announced with new production capacity coming online by 2029. Additional production expansions are in earlier stages of development but are facing legal challenges as they move through the permitting process.

These major investments are made for the long term, with U.S. production sites operating for decades because of the level of maintenance and improvements. The investment and commitment to strong and safe operations by the fertilizer industry means that U.S. farmers have access to more critical crop nutrients in a timely manner.

Our recommendations for immediate and long-term policy actions to enhance domestic fertilizer production and improve supply chain reliability for U.S. farmers are outlined in our answer to the first question and on our website.

3. Labor shortages continue to be a significant challenge for U.S. farmers.
 - a. Can you describe the primary causes of these shortages and how they are specifically affecting your members' operations, productivity, and costs?

- b. From your perspective, what strategies or policy changes could help address these workforce gaps and support agricultural production?

A: While we are aware of farmers' ongoing labor challenges, characterizing the problem and potential solutions is outside our area of expertise, which is the fertilizer industry. While not a shortage, it is worth noting that in TFI's most recent Industry Trends survey, conducted in 2023, members identified an insufficiency of skilled labor as a top challenge for U.S. companies in the fertilizer industry. This labor market challenge can lead to reduced operational efficiency and lower production, which leads to higher costs and ultimately reduces U.S. competitiveness.

Addressing the skilled labor shortage is crucial for the fertilizer industry, many others like it and ultimately the U.S. economy at large to ensure U.S. economic stability and growth. A suite of solutions that include but are not limited to vocational training and apprenticeship programs, partnerships between industry and educational institutions and policies that support the growth of skilled trades and provide incentives for training.

A P P E N D I X

The following submissions are available at:

<https://www.govinfo.gov/content/pkg/CHRG-119shrg62935/pdf/CHRG-119shrg62935-add1.pdf>

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