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Food Defense Guidelines for Siluriformes Fish* Production and Processing



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Introduction

The United States Department of Agriculture (USDA), Food Safety and Inspection Service (FSIS) is responsible for ensuring that the Nation's commercial supply of meat, poultry, processed egg products and siluriforme fish is safe, wholesome, and correctly labeled and packaged.

These voluntary *FSIS Food Defense Guidelines for Siluriformes Fish** Production and Processing are a compilation of best practices specifically developed to assist federally inspected Siluriformes fish facilities. They were developed in consultation with Siluriformes fish producers, processors, and extension personnel. Not all of these practices are implemented by every producer or processor. However, together they represent the best guidance currently available to prevent intentional contamination of farm-raised Siluriformes fish products. Implementation of these practices will help maintain consumer confidence in domestic farm-raised Siluriformes fish and reduce the chance of incidents that could jeopardize that confidence.

**The term "Siluriformes fish" is defined as "all fish of the order Siluriformes" by the 2014 Farm Bill which amended the Federal Meat Inspection Act to remove the term catfish.*

What Is Food Defense?

Food defense is the protection of food products from intentional contamination or adulteration where there is an intent to cause public health harm and/or economic disruption. Food defense differs from food safety which focuses on the unintentional or accidental contamination of food during production, processing, or storage. Implementing food defense measures is voluntary; however, it is highly encouraged as good business practice and to further protect public health.

What Is the Purpose of the Guidelines?

These voluntary guidelines were developed in response to the 2008 Farm Bill that amended the Federal Meat Inspection Act (FMIA), to make "catfish" a species amenable to the FMIA and, therefore, subject to FSIS inspection. In addition, the 2008 Farm Bill gave FSIS the authority to define the term "catfish." The 2014 Farm Bill amended the FMIA to remove the term "catfish" and to make "fish of the order Siluriformes" subject to FSIS jurisdiction and inspection. As a result, FSIS inspection of Siluriformes, including North American Siluriformes fish, basa, swai, and others, is mandated by law.

These recommendations are designed to meet the general needs of FSIS-regulated Siluriformes fish products and processing facilities and to be readily adaptable for each individual operation. FSIS recognizes that not all of the guidance in this document will be appropriate or practical for every facility. Operators should review each section of the guidelines that pertains to a component of their operation and assess which measures are suitable. Although these guidelines are voluntary and operators could choose to adopt measures other than the ones suggested, it is vital that all food businesses take steps to ensure the security of their facility and food products.

Why It Matters

An attack on the food supply can be carried out by a disgruntled employee or result from an incident in your community (e.g., local citizen protest), as well as an organized extremist group. Although your operation might not be directly at risk, there is a high likelihood that an attack at one location could affect the entire Siluriformes fish industry and potentially cause consumers to select other products. For this and many other reasons, it is good business practice to implement food defense measures.

Food defense protects your business, your employees, and your product.

How a Food Defense Plan Helps

A key component to protecting the food supply is to develop a food defense plan. This plan provides an opportunity to identify areas where security measures could be enhanced to prevent intentional contamination. Once implemented, the plan will help focus employee training and response and recovery actions.

Key areas include:

- farms, ponds, hatcheries, and processing facilities;
- general facility security (outside and inside);
- processing security;
- shipping/receiving security;
- storage security;
- water/ice security; and
- personnel security.

Having an effective food defense plan in place offers many **potential benefits**, such as

- increasing consumer confidence in your product;
- deterring theft and tampering;
- maintaining greater control over product;
- protecting private assets; and
- protecting public health.

Whether you use FSIS' food defense guidance and model voluntary plan or some other source, the recommendations in this booklet will provide you with useful information on what elements to consider and address.

For questions about these guidelines, call the FSIS Small Plant Help Desk at 1-877-FSISHelp or 1-877-374-7435, or send an email to: **InfoSource@fsis.usda.gov**.

These guidelines are also available electronically at: **<http://www.fsis.usda.gov/fooddefense>**



Additional Resources

Helpful information for the Siluriformes fish industry, as well as other industries, can be found at the following sources:

FSIS Food Defense Guidance:

<http://www.fsis.usda.gov/fooddefense>

- *Food Defense Guidelines for Siluriformes Fish Production and Processing**
- *General Food Defense Plan for Siluriformes Fish Production and Processing**
- *FSIS Food Defense Guidelines for the Transportation and Distribution of Meat, Poultry, and Egg Products**
- *FSIS Food Defense Guidelines for Slaughter and Processing Establishments**
- *FSIS Guide to Developing a Food Defense Plan for Warehouses and Distribution Centers **
- *Developing a Food Defense Plan for Meat and Poultry Slaughter and Processing Plants**
- *Guidelines for the Disposal of Intentionally Adulterated Food Products and the Decontamination of Food Processing Facilities*

**These publications are in multiple languages.*

Additional Resources:

- U.S. FDA Food Defense Preventive Measures Guidance: <http://www.fda.gov/fooddefense>
- U.S. FDA Food Defense Plan Builder: <http://www.fda.gov/fooddefense>
- Emergency Response and Management (Alabama Aquaculture Best Management Practices) <http://www.aces.edu/dept/fisheries/aquaculture/BMP.php>
- Food Defense Begins at the Farm: http://msucares.com/nmrec/events/pac_poster_pdfs/msu_poster_food_defense_021711.pdf
- Food Defense and Biosecurity: <http://msucares.com/pubs/publications/p2593.pdf>
- World Health Organization (WHO)—Terrorist Threats to Food—Guidelines for Establishing and Strengthening Prevention and Response Systems (ISBN 92 4 154584 4) <http://apps.who.int/iris/bitstream/10665/42619/1/9241545844.pdf>

This guidance is divided into three sections that include recommended measures that may be appropriate to:

1. all Siluriformes fish facilities,
2. production facilities, and
3. processing facilities,

Operators are encouraged to review the entire document and focus on those sections that pertain to their activities. Use this guidance to compare current establishment procedures and controls to address potential intentional contamination and make improvements to your process or plans where appropriate.



Food Defense Plan Management

(Applicable to all Siluriformes fish operations)

- Designate a person or team to develop, implement, manage, and update a written food defense plan based on available guidance.
- Train appropriate personnel in food defense, including new hires.
- Test your food defense plan and security measures by conducting regular tests or food defense drills.
- Secure details of your food defense plan and security measures, and share only as necessary to implement the plan and measures.
- Include emergency contact information from local, State, and Federal Government, homeland security authorities, and public health officials in the food defense plan. (Find helpful information on State contacts at <http://www.dhs.gov/state-and-major-urban-area-fusion-centers>.)
 - Review and update contact information regularly.
 - Designate farm or plant personnel who will be responsible for contacting these authorities.
- Include procedures for responding to threats of product contamination in your plan.
- Include procedures for responding to actual incidents of product contamination in your plan by referencing other internal programs as appropriate.
- Have procedures that ensure adulterated or potentially harmful products are not distributed into commerce.
- Have procedures in place for safe handling and disposal of contaminated products in accordance with your Federal or State environmental authorities.
- Encourage and train employees to report breaks in the food defense system, signs of possible contamination, or suspicious persons on the farm or in the facility.
- Include evacuation procedures in your plan. (Find helpful information at: <http://www.osha.gov/dep/evacmatrix/index.html>.)
- Have procedures in place that restrict access to your facility to only authorized personnel during an emergency.
- Have a documented recall plan in place that ensures the segregation and proper disposition of recalled products and update the plan regularly.

Not all recommendations will be applicable to all operations.

Security Measures for Production

(Applicable to Siluriformes fish farms, ponds, and hatcheries)

General Farm Security

- Post “No Trespassing” signs, as appropriate.
- Ensure there is adequate lighting to monitor sensitive areas at night and in the early morning.
- Instruct personnel to monitor access to the farm by unauthorized or unscheduled persons.
- Consider controlled access for people and/or vehicles entering the area.
- Identify employee vehicles or become familiar with them to allow identification of visitor, contractor, or unusual vehicles.
- Clearly mark all restricted areas (i.e., areas where only authorized personnel have access such as chemical storage areas).
- Restrict visitors, guests, and other nonemployees (e.g., contractors, sales people, grounds crews, and truck drivers) to appropriate areas.
- Have available up-to-date copies of farm layout/blueprints for local law enforcement, including the fire department.
- Monitor pond for any abnormal fish deaths or behaviors.
- Maintain records on facility security inspection results.



Storage Security

- Monitor storage areas and ensure controlled access.
- Regularly check inventory of restricted products against the actual use of such products.
- Limit access to inside and outside storage areas for feed (feed with antibiotics, drugs) and potentially hazardous materials and chemicals (e.g., pesticides, industrial chemicals, cleaning materials, sanitizers, and disinfectants) to designated employees only.
- Maintain security of restricted materials and chemicals.
- Immediately investigate unusual changes in inventory of potentially hazardous materials and chemicals.
- Have a procedure in place to receive and securely store potentially hazardous chemicals.
- Have a procedure in place to control disposition of potentially hazardous chemicals.



Not all recommendations will be applicable to all operations.

Production Facility Shipping and Receiving Security

- ❑ Keep trailers and tankers on the premises under observation when not being loaded or unloaded.
- ❑ Closely monitor loading and unloading of vehicles transporting live Siluriformes fish.
- ❑ Inspect tanker trucks for any inappropriate material, solid or liquid, in tanks prior to loading products.
- ❑ Maintain chain-of-custody records for live Siluriformes fish-haul trucks.
- ❑ Require advance notification from suppliers (by phone, e-mail, or fax) for all incoming deliveries.
- ❑ Investigate suspicious alterations in shipping documents.
- ❑ Ensure that an authorized person is present to verify and receive the live product and check incoming shipments of live products for evidence of tampering.
- ❑ When selecting transportation companies and suppliers, consider the company's ability to safeguard the security of the materials being shipped.
- ❑ Only receive feed from federally inspected mills (e.g., has a (FDA) Medicated Feed Mill License).
- ❑ Encourage transportation companies to perform background checks on drivers and other employees who have access to live Siluriformes fish. Suppliers should take steps to strengthen food defense in their facilities and during transportation.

Not all recommendations will be applicable to all operations.



Water Security

- ☐ Control access to water sources (wells) by limiting access to designated employees.
- ☐ Visually monitor activities within the water shed for potential contamination.
- ☐ Monitor water line(s) to ensure they have not been compromised.

Production Facility Personnel Security

- ☐ Conduct background checks on all employees who will be working in sensitive key areas of your operations.
 - ☐ Contact references
 - ☐ Use E-Verify. Department of Homeland Security's E-Verify is one way to conduct checks and is a free program that can be accessed at **<https://e-verify.uscis.gov/enroll/>**
- ☐ Train all farm employees on security procedures as part of their training, including new hires.
 - ☐ Training information is provided at **<http://www.fda.gov/Food/FoodDefense/default.htm>**
- ☐ Limit temporary employees and contractors to areas of the farm relevant to their work.
- ☐ Maintain an updated list of employees and approved vendors (contractors).
- ☐ Restrict items that employees and visitors can bring onto the farm and provide a list of prohibited items (potentially hazardous chemicals, etc.).

Not all recommendations will be applicable to all operations.

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Security Measures for Processing

Outside Security

- ☐ Secure the facility grounds to prevent entry by unauthorized persons (e.g., locked fence, gate, or entry/exit).
- ☐ Post “No Trespassing” signs at the facility’s boundaries, where appropriate.
- ☐ Ensure that there is enough lighting outside the building to properly monitor the plant premises at night and in the early morning.
- ☐ Have self-locking doors and/or alarms in place on all emergency exits.
- ☐ Ensure the following items are secured with locks, seals, or sensors when unattended (after hours/weekends) to prevent unauthorized entry:
 - ☐ Outside doors and gates
 - ☐ Windows
 - ☐ Roof openings
 - ☐ Vent openings
 - ☐ Trailer (truck) bodies
 - ☐ Tanker truck hatches
- ☐ Consider controlled access procedures for people and/or vehicles entering the plant and/or parking in your lot, such as
 - ☐ Using controlled or guarded entrances
 - ☐ Identifying employee and visitor/guest vehicles with placards, decals, or some other form of visual identification
 - ☐ Install cameras to monitor exterior of the facility

Not all recommendations will be applicable to all operations.



Inside Security

- Install an emergency lighting system in the facility.
- If using security cameras, monitor them regularly.
- Use an emergency alert system and test it regularly.
- Clearly mark locations of controls for emergency alert systems.
 - Clearly mark all restricted areas (i.e., areas where only authorized employees have access).
- Restrict visitors, guests, and other non-employees (e.g., contractors, sales people, and truck drivers) to non-product areas unless accompanied by an authorized employee, or in accordance with facility policy.
- Have available up-to-date copies of facility layout/blueprints for local law enforcement, including the fire department.
 - Require county records office to notify you when a copy of your blueprints is requested.
- Have procedures in place to periodically check maintenance closets, toilets, personal lockers, and storage areas for suspicious packages.
- Regularly take inventory of keys to secured/sensitive areas of the facility.
- Ensure that ventilation systems are constructed in a manner that provides for immediate isolation of contaminated areas or rooms if possible.
- Limit access to the controls (e.g., locked door/gate or to designated employees) for the following systems in the facility:
 - Heating, ventilation, and air conditioning
 - Propane gas
 - Water
 - Electricity
 - Disinfection systems
- Limit access (e.g., by locked door, pass card) to the in-plant laboratory facility to authorized employees only.
- Have procedures in place to control receipt of ingredient samples from other establishments.
- Password protect access to the facility's computer system. (Find helpful information at <http://www2.bus.umich.edu/MyiMpact/technology/need-help/security-best-practices>.)
- Ensure that firewalls are built into computer network.
- Use an up-to-date computer virus detection system.



Not all recommendations will be applicable to all operations.

Processing Security

- Limit access to processing areas and holding vats to facility employees and FSIS inspection personnel, and approved visitors (e.g., customers and contractors) only.
- Monitor production lines that handle and transfer products, water, oil, ice, or other ingredients to ensure integrity.
- Examine packaging of ingredients before use for evidence of tampering.
- Maintain records to allow a tracing system for raw materials and finished products.
- Install cameras to monitor employee activity at key areas of your operations (e.g., receiving, ingredient storage, solution preparation, and mixing).

Storage Security

- Monitor access to storage areas including internal storage, external on-site storage, and cold and dry storage areas.
- Regularly conduct security inspections of storage areas including temporary storage vehicles.
- Maintain records on facility security inspection results.
- Regularly check inventory of any restricted products against the actual use of such products.
- Monitor product labels and packaging to prevent theft and misuse.
- Regularly check the inventory of finished product for unexplained changes.
- Limit access to inside and outside storage areas for feed and potentially hazardous materials and chemicals (i.e., pesticides, industrial chemicals) to designated employees only.
- Maintain and monitor an inventory of potentially hazardous materials and chemicals.
 - Immediately investigate unusual changes in inventory of potentially hazardous materials and chemicals.
- Ensure that storage areas for potentially hazardous materials/chemicals are constructed and safely vented in accordance with local building codes.
- Have a procedure in place to receive and securely store potentially hazardous chemicals.
- Have a procedure in place to control disposition of potentially hazardous chemicals.

Not all recommendations will be applicable to all operations.

Shipping and Receiving Security

- Keep (loaded) trailers and tankers on the premises locked or under observation when not being loaded or unloaded.
- Closely monitor loading and unloading of vehicles transporting raw materials, live Siluriformes fish, materials used for processing, or finished products.
- Seal outgoing shipments with tamper-evident seals.
 - Document seal numbers on the shipping documents.
- Inspect tanker trucks for unusual materials prior to loading or unloading.
 - Maintain chain-of-custody records and investigate unauthorized changes to shipping documents.
- Monitor loading docks to avoid unverified deliveries
 - Request advance notification from suppliers (by phone, e-mail, or fax) for all incoming deliveries.
 - Monitor shipping/receiving against a planned schedule.
- Ensure an authorized person is present to verify, receive, and check incoming shipments of raw products, ingredients, and finished products for evidence of tampering.
- Inspect vehicles for evidence of tampering.
- Ensure all transported food items and packaging materials (including holding water) are protected from tampering.
- When selecting transportation companies and suppliers, consider the company's ability to safeguard the security of the materials being shipped through the entire transportation process.
- Request that transportation companies perform background checks on drivers and other employees.
- In a separate designated area, examine returned goods for evidence of tampering before accepting returns or using them in rework.
 - Maintain records of returned goods used in rework.
 - Follow the procedures, as appropriate, for the return of exported products to the United States. (Find helpful information at: <http://www.fsis.usda.gov/OPPDE/rdad/FSISDirectives/9010.1Rev1.pdf>)

Not all recommendations will be applicable to all operations.

Water and Ice Supply

- Restrict access to water sources by locked door/gate or limiting access to designated employees.
- Limit access to ice-making equipment and storage.
- Limit access to storage tanks for potable water and water reuse systems.
- Inspect potable water lines for possible tampering (e.g., visual inspection for physical integrity of infrastructure, connection to potable lines)
- Make arrangements with local health officials to ensure they will notify the facility immediately if the potability of the public water supply is compromised.

Personnel Security

- Check references on all employees.
- Consider background checks¹ on all employees and contractors (both permanent and seasonal) who will be working in key areas of your operations.
- Train all facility employees on security procedures as part of their orientation training.²
- Identify employees, visitors, and contractors (including construction workers, cleaning crew, and truck drivers) in some manner (e.g., ID badges, specific colors of clothing) at all times while on the premises.
- Control access by employees and contractors (including construction workers, cleaning crews, and truck drivers) to areas of the plant relevant to their work.
- Prohibit employees from removing company-provided or protective gear from the premises that could be used to gain unauthorized entry into the facility.
- Maintain an updated shift roster for each shift (i.e., who is absent, who the replacements are, and when new employees are being integrated into the workforce).
- Do not allow personal items into the production areas.
- Restrict items that employees and visitors can bring into the facility and provide a list of prohibited items (e.g., cameras, non-essential personal items).

Not all recommendations will be applicable to all operations.

¹ At a minimum, use Department of Homeland Security's free E-Verify program, found at <https://e-verify.uscis.gov/enroll/>, to verify employment eligibility. Also consider checking employment history, references, and criminal background.

² Training information is provided at: <http://www.fda.gov/Food/FoodDefense/default.htm>

NOTES

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