

## **ALABAMA – Biosecurity Guidelines, USDA Avian Influenza Response, and Process Information (2015)**

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Section 1:  
Biosecurity Guidelines

## **Alabama Bulletin No. AL210-15-1**

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**Date:** August 31, 2015

**Subject:** ENG – Biosecurity Protocol and Emergency Mortality Burial

**Purpose:** To transmit the latest biosecurity guidelines from the United States Department of Agriculture (USDA) and the Alabama Department of Agriculture and Industries (ADAI, also known as the State Veterinarians' office).

**Action Required:** Resource Engineer should supply an estimate of supplies to Josh Bruce ASAP; please contact at 334-887-4536.

**Expiration Date:** September 30, 2016

The following guidance pertains to inspections or visits to poultry farm premises as issued by USDA in 2014-2015 and by ADAI in 2005 and revised in 2013. General information pertaining to catastrophic mortality disposal is also provided.

Due to the ongoing outbreaks of highly pathogenic avian influenza (HPAI), and our strong field office presence in rural areas across the state, it is important to understand how we can all help prevent spread of this disease. USDA employees and partners should take precautions regarding any interactions with all aspects of the poultry industry, especially on farms.

**The following NRCS Biosecurity Policy is abbreviated from General Manual Title 130 Part 403:**

### **A. Animal production protection**

(1) During an outbreak of an infectious animal disease NRCS employees will not enter affected areas except in response to a request from the State veterinarian or other responsible official. In those situations, the employee will follow the biosecurity measures as required by APHIS, the State veterinarian, and other responsible official.

(2) At all times, the NRCS employee will adhere to the level of biosecurity applicable to the planned activity, or to more stringent measures that the farmer/rancher or owner/producer

has in place. The selection of level 1, 2, or 3 biosecurity measures will depend on the degree of interaction of NRCS staff with the producer's office, facilities, or livestock. To the extent possible, avoid situations that require level 3 biosecurity by conducting visits when livestock are not present.

(3) During periods of heightened concern, before an identified outbreak, and for the prevention of the spread of infectious animal disease, additional procedures beyond those outlined in levels 2 and 3 below may be implemented if specified by APHIS or the State veterinarian.

(4) Biosecurity levels

(i) **Level 1.**—Visits to farms/ranches that entail office or home visits only, the NRCS employee will:

- Park the vehicle on hardened area designated for parking, if available. Park the vehicle away from animal areas and out of any runoff coming from animal areas. Avoid driving in manure or wastewater runoff.
- Wash hands with soap and water or an antibacterial gel that is at least 60 percent alcohol before entering and after leaving the premises to avoid transmitting disease agents from person to person.

(ii) **Level 2.**—Visits to farms / ranches where minimal contact with animal manure, livestock/poultry, or their housing (barns, pens, hutches, etc.) is unavoidable to attain the goal of the visit, the NRCS employee will:

- Preplan the needed supplies for daily visits including, but not limited to, boots (rubber or disposable plastic), a large water container/sprayer, a spray bottle for application of a bleach/water mixture or an Environmental Protection Agency- (EPA) approved disinfectant, bleach or disinfectant, a long-handled brush, trash bags, paper towels, liquid antibacterial soap or an antibacterial gel that is at least 60-percent alcohol, and a bucket/pail as needed.
- Designate a "clean" area in your vehicle to place clean equipment and boots.
- Designate a "dirty" area in your vehicle for clothing and equipment that has been used on the farm.
- Wash hands with soap and water or an antibacterial gel after entering and before leaving the premises to avoid transmitting disease agents from person to person.
- Put on clean rubber or new plastic boots prior to exiting the vehicle.
- Clean dirt and manure from equipment and rubber boots with a brush and water
- Disinfect the equipment and boots with bleach (1/2 cup bleach to 1 gallon water) or an EPA-approved disinfectant solution. Mix and apply the disinfectant according to label directions to ensure the proper contact time of the disinfectant with the surface being

disinfected. Dispose of disinfectant solution according to the label. Do not discard unused disinfectant on the ground.

- If the vehicle comes into contact with dirt or manure during the farm visit, clean dirt and manure from tires and wheel wells with water and a brush. If possible, also remove dirt and manure from other parts of the vehicle. Disinfect the tires and wheel wells with a bleach/water mixture or with an EPA-approved disinfectant solution. If the vehicle cannot be cleaned in the field, take it to a car wash before visiting another farm/ranch. Give extra attention to cleaning the undercarriage.

- Place plastic boots in a plastic bag and leave the bag on the premises for disposal by the owner/producer or place the bag in a designated dirty area of your vehicle.

(iii) **Level 3.**—Visits to farms/ranches where there will be close contact with livestock/poultry (walking through narrowly confined pens/lots where animals are within reach or handled in the process of working), the NRCS employee will use level 2 biosecurity plus the following procedures:

- Preplan the needed supplies and clothing for daily visits including, but not limited to, coveralls (cloth or disposable) and nitrile gloves;
- Put on a pair of clean coveralls for each visit.
- Remove coveralls in a manner that they are inside out and place them in a trash bag.
- Place the clean equipment and boots in the designated clean area of the vehicle.
- Dispose of all plastic bags that contain dirty supplies in a manner that prevents exposure to other livestock.
- Launder all cloth coveralls.
- Shampoo hair and clean under fingernails.

**The following is additional guidance to protect the health of the poultry industry:**

1. Visits to farm premises by the public are not authorized unless permission is granted by operator/owner. Visits or inspections by government/agency personnel are authorized to the extent allowed by applicable statutory and/or regulatory authority.
2. Do not visit or conduct an inspection of a farm in a non-disease/virus or non-vaccination area on the same day after a visit to a farm in any zone where a disease/virus is present, or vaccine is being used.
3. Avoid entry into animal production buildings, unless absolutely necessary to ensure NPDES compliance. Follow applicable guidelines above including wearing coveralls and hairnets if you have to enter a poultry house.
4. Never walk on to a farm or into a complex without owner present.

5. Always follow the owner or company's biosecurity guidance and requirements.
6. Disinfectants approved for use include the following: Household bleach or Clorox, Lysol, Virkon, One-Stroke, Iodine, Tekrol, 904. All others contact ADAI to obtain approval by State Veterinarian.
7. Disinfectants can be obtained through the following sources:
  - a. Fuller Supply, Montgomery, Phone- 334-263-7316
  - b. Wynco, Guntersville, Phone- 800-621-0898
  - c. All others Authorized by ADAI
8. Protective footwear, coveralls, and hairnets can be obtained through the following:
  - a. Fisher Scientific, Phone- 800-766-7000
  - b. Wynco, Guntersville, Phone- 800-627-0898
  - c. Other sources Authorized by ADAI

**The following guidelines pertain to catastrophic mortality disposal associated with HPAI, as currently in effect. Any future changes to HPAI disposal procedures as directed by NRCS and ADAI will be issued accordingly.**

- (1) Mortality disposal by burial constitutes the primary option for carcass disposal followed by composting (in-house and out-house) in addition to other methods of disposal.
- (2) In addition, mortality disposal by burial method dictates that a suitable site shall include at least two feet of soil above groundwater table or impermeable barrier (bedrock) and two feet of ground cover provided to cover mortality.

For additional information contact [Josh Bruce](#), 334-887-4513.

/s/

Kurt Simon  
Acting State Conservationist

# Natural Resources Conservation Service



## SUPPLY LIST

- ✓ Hand sanitizer
- ✓ Rubber boots or disposable boots
- ✓ Long handled brush
- ✓ Putty knife/scrapper
- ✓ Bucket
- ✓ Water jug
- ✓ Disinfectant
- ✓ Garbage bags
- ✓ Hose w/spray nozzle *(or local car wash)*

## BIOSECURITY BASICS

- 1** Do not bring pathogens to the farm. If you also farm, ensure you and your clothing are clean when coming to work.
- 2** Do not take pathogens away from the farm.
- 3** Prevent the transport of diseases, noxious and invasive plants, and pest plants.

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# BIOSECURITY BASICS

## Plan your farm visit

- Make an appointment. Ask the producer if they have any farm-specific biosecurity protocols in place or if there's a disease outbreak. Plan to follow the producer's biosecurity measures if more stringent.
- Plan your biosecurity procedures to match the purpose of the visit. Have adequate supplies with you.

## Think "Clean to Dirty"

- If possible, schedule work to minimize the need for cleaning and disinfecting.
- Avoid visits to farms with known disease issues.

### ANIMAL PRODUCTION SITES

(\* = Additional for Level 2)

#### Arriving at the farm

- Park away from animal areas and out of any runoff from animal areas.
- Wash hands with soap and water or hand sanitizer.
- Put on clean boots or disposable boots.\*
- Minimize animal contact.\*

#### At the completion of visit

- Place disposable items in a garbage bag. Dispose appropriately.\*
- Clean dirt and manure from rubber boots and equipment.\*
- If vehicle (truck, UTV, ATV, trailer, etc) comes into contact with dirt or manure, clean tires and wheel wells with water and a brush, or use a car wash before visiting another site.\*
- Disinfect any items that required cleaning, following the disinfectant directions.\*
- Wash hands with soap and water or hand sanitizer.

### CROP PRODUCTION SITES

#### Arriving at the farm

- Park away from potential infected sites.
- Make sure your equipment is clean and free of soil, seeds and organic matter.

#### At the completion of visit

- Clean all equipment, shoes and clothing of soil, seeds or organic matter before leaving the site.
- If vehicle (truck, UTV, ATV, trailer, etc) is contaminated with soil, seeds or organic matter, clean tires and wheel wells with water and a brush, or use a car wash before visiting another site.

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## Alabama NRCS Biosecurity Guide

The transmission of infectious animal diseases, such as foot and mouth, avian influenza, porcine epidemic diarrhea virus (PEDv), Johne’s disease, and others threaten the food supply. The spread of plant pests, plant diseases, and noxious weeds can destabilize an abundant, high-quality, and varied food supply. These threats are a national concern requiring the cooperative participation of NRCS and USDA agencies and partners.

We have the responsibility to ensure that we do not carry disease or noxious organisms with us as we go from farm to farm.

### Biosecurity Supplies

Ensure that you have the appropriate biosecurity supplies. In the vehicle, keep separate areas for clean items (equipment and boots) and dirty items (clothing and equipment that have been used on the farm and not yet cleaned).



Basic supplies you need to carry include:

- Container with water
- Bucket
- Long handled brush
- Putty knife/scrapper

If you visit animal production sites, you will need to carry these additional supplies, at a minimum:

- Hand sanitizer
- Rubber boots or disposable boots
- Disinfectant
- Garbage bags

### Planning the Farm Visit

Make an appointment. Ask the producer before the visit if the farm has any disease, plant pests, or noxious weed issues. Postpone your visit if there is an active outbreak.

Know the biosecurity protocols the farm might already have in place. Follow the farm’s protocol if more stringent than NRCS protocol. Some farms require a minimum “down time” between visits with other farms, or may want you to use their equipment and clothing while in close contact with the animals on site.

If possible, schedule work to minimize the need for frequent cleaning and disinfecting.

- For animal production sites, try to visit when livestock are not present.
- For crop production sites, try to visit when crops are not growing.

Think about the purpose of the visit. Can you accomplish the purpose by just visiting the farm office or are you doing something for which you must come into contact with animals or crop fields?

When arranging your day, save for last any site visit that will require washing the vehicle afterwards, to minimize trips back to town.

(more...)



## ANIMAL PRODUCTION SITES

NRCS policy describes three levels of biosecurity for visits to livestock farms:

*Level 1:* office or home visits only;

*Level 2:* where minimal contact with animal manure, livestock, or their housing is unavoidable;

*Level 3:* where there will be close contact with livestock.

Most NRCS work will be at Levels 1 or 2. *Try to avoid situations where Level 3 biosecurity protocol is required.* For complete protocol and guidelines refer to Alabama Bulletin AL210-15-1

### At the Farm

- Park in the designated parking area. If an area is not designated, park away from animal areas, manure, mud, or runoff. In crop production areas, park to avoid contact with soil, seeds, or diseases if possible.
- Keep windows of vehicle closed to prevent pests from entering the vehicle.
- Wash your hands or use hand sanitizer before entering the premises.
- Use only clean equipment and clothing.

Where minimal contact with animals or manure is unavoidable, add this step:

- Put on clean rubber or plastic boots prior to exiting the vehicle.

### After the Visit is Complete

- Clean all dirt and manure from equipment and rubber boots with a brush and water.
- Place disposable dirty items in a garbage bag. Dispose on site, or place in the dirty area of vehicle for later disposal.
- Clean dirt and manure from equipment and boots.
- If the vehicle (truck, UTV/ATV, trailer) came into contact with dirt or manure, clean dirt and manure from the tires and wheel wells before visiting another farm.

- If the vehicle cannot be cleaned in the field, take it to a car wash before visiting another farm. Clean the undercarriage as well.
- Disinfect any equipment and boots that required cleaning.
- Disinfect the tires and wheel wells of any vehicle that required cleaning.
- Wash your hands or use hand sanitizer.

## Level 3 Biosecurity\*\*

Level 3 applies to situations where there

- will be close contact with livestock/poultry (walking through confined pens/lots where animals are within reach or handled)

**The employee will use Level 2 plus the following:**

- Pre-plan supplies and clothing needed including, but not limited to, coveralls and nitrile gloves
- Put on a pair of clean coveralls and gloves for each visit
- Remove coveralls in a manner that they are inside out and place them in a trash bag.
- Dispose of all plastic bags that contain dirty supplies in a manner that prevents exposure to other livestock.

## BEFORE COMING TO WORK

For those who farm outside of NRCS work time, take extra precautions. Make sure you avoid bringing harmful agents to your client's farm or taking agents from a client's farm to your own. Ensure your clothing is clean when you come to work, and before you begin work on your own farm. Consider having separate NRCS and home farm work clothes and boots.

This also applies if you visit a farm on your own time; visit a fair, livestock show or sale barn; hunt, hike, or otherwise come in contact with potential harmful agents.

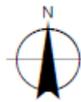
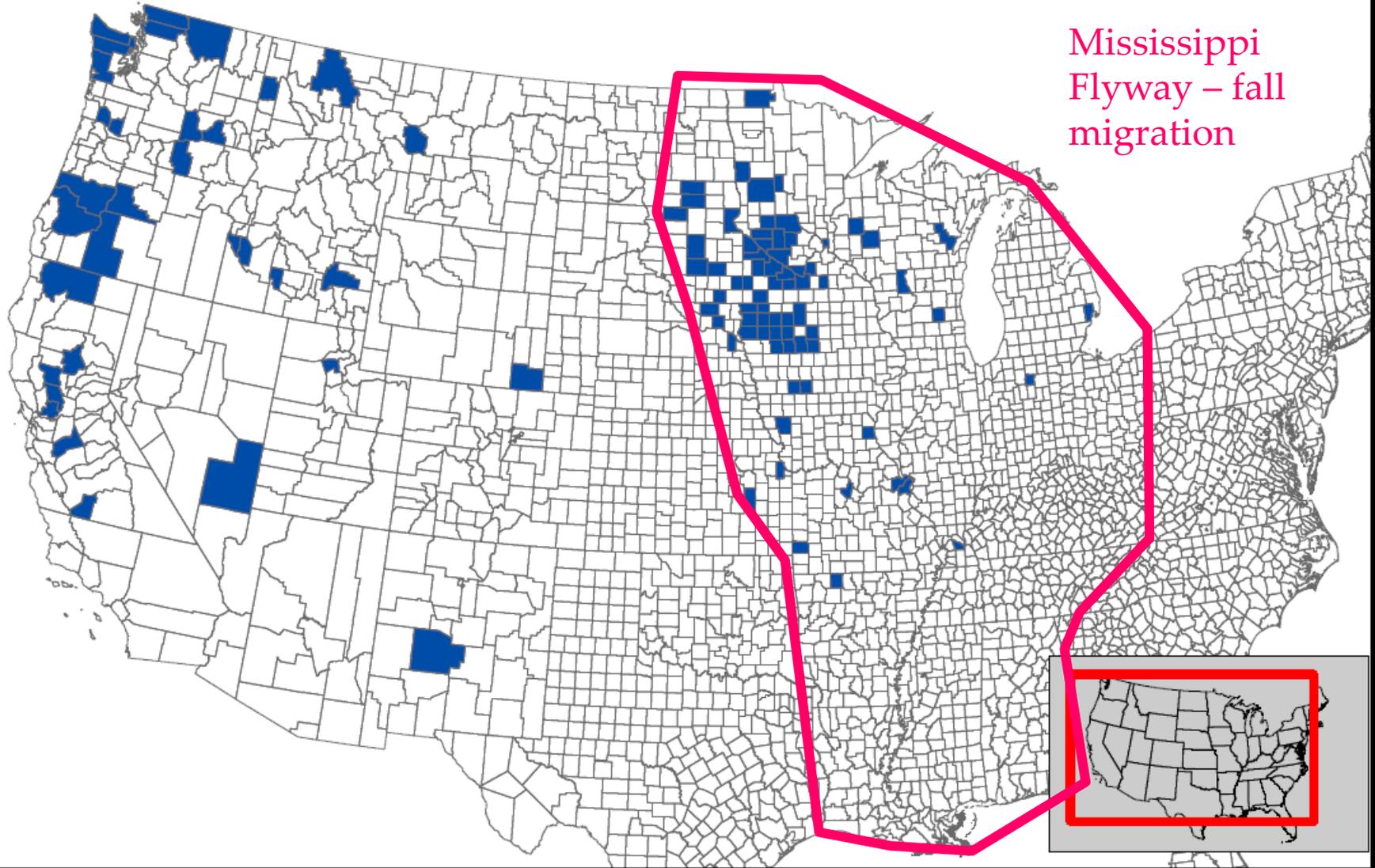
**\*\*Given an HPAI incident within the state or neighboring state, biosecurity protocols will increase and include additional guidelines set forth by the State Veterinarian.**



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Section 2:  
General HPAI Information

Figure 1. All HPAI Detections as of 8/6/2015 (as reported on [www.aphis.usda.gov](http://www.aphis.usda.gov)) \* one or more detections may have occurred in county



As part of the President's National Strategy for Pandemic Influenza, which includes both avian influenza and human pandemic preparedness, the U.S. Department of Agriculture (USDA) is working with its partners on the international and domestic fronts to help control the spread of high-pathogenicity H5N1 avian influenza.

## What is avian influenza?

**A**vian influenza (AI)—the bird flu—is a virus that infects wild birds (such as ducks, gulls, and shorebirds) and domestic poultry (such as chickens, turkeys, ducks, and geese). There is a flu for birds just as there is for humans and, as with people, some forms of the flu are worse than others.

AI viruses are classified by a combination of two groups of proteins: the hemagglutinin or H proteins, of which there are 16 (H1-H16), and neuraminidase or N proteins, of which there are 9 (N1-N9). AI strains also are divided into two groups based upon the ability of the virus to produce disease in poultry: low-pathogenicity avian influenza (LPAI) and high-pathogenicity avian influenza (HPAI).

LPAI, or “low path” avian influenza, naturally occurs in wild birds and can spread to domestic birds. In most cases it causes no signs of infection or only minor symptoms in birds. These strains of the virus pose little threat to human health. LPAI H5 and H7 strains have the potential to mutate into HPAI and are therefore closely monitored.

HPAI, or “high path” avian influenza, is often fatal in chickens and turkeys. HPAI spreads more rapidly than LPAI and has a higher death rate in birds. HPAI H5N1 is the type rapidly spreading in some parts of the world.

## How can people become infected with avian influenza?

Although the HPAI H5N1 virus does not usually infect people, more than 200 human cases have been reported since 2004. Most people who have become sick or died from HPAI H5N1 have had extensive, direct contact with infected poultry. Broad concerns about public health relate to the potential for the virus to mutate, or change into a form that could easily spread from person to person, a characteristic that could result in a human influenza pandemic. There is no evidence that this is occurring. Strains of AI that have been detected in U.S. poultry, including LPAI and HPAI, have caused no known human illnesses.

## USDA has experience responding to and eradicating HPAI.

HPAI has been detected three times in U.S. poultry: in 1924, 1983, and 2004. No human illness resulted from any of these outbreaks.

The 1924 HPAI H7 outbreak was contained and eradicated in East Coast live bird markets.

The 1983-84 HPAI H5N2 outbreak resulted in humanely euthanizing approximately 17 million chickens, turkeys, and guinea fowl in Pennsylvania and Virginia to contain and eradicate the disease.

In 2004, USDA confirmed an HPAI H5N2 outbreak in chickens in Texas. The disease was quickly eradicated thanks to close coordination and cooperation between USDA and State, local, and industry leaders.

## USDA efforts to protect the United States.

**Import restrictions:** USDA quarantines and tests live birds imported into the United States to ensure that they do not have any foreign animal diseases such as the HPAI H5N1 virus.

All imported live birds (except from Canada) must spend 30 days at a USDA quarantine facility where they are tested for the AI virus before entering the country. Returning U.S.-origin pet birds (except from Canada) also are tested and are home-quarantined.

USDA maintains trade restrictions on the importation of poultry and poultry products originating from countries and/or regions where the HPAI H5N1 strain has been detected in commercial or traditionally raised poultry. USDA regulations require that import permits accompany properly sanitized poultry products, such as raw feathers.

Additionally, USDA has increased its monitoring for illegally smuggled poultry and poultry products through an anti-smuggling program in coordination with the U.S. Department of Homeland Security - Customs and Border Protection.

**International assistance:** USDA is working closely with international organizations such as the World Organization for Animal Health (OIE), the United Nations Food and Agriculture Organization (FAO), and the World Health Organization to assist HPAI-affected countries and other countries with disease prevention, management, and eradication activities. By helping these countries prepare for, manage, and eradicate HPAI outbreaks, USDA can help to slow the spread of the virus. Some efforts include:

- Training sessions for veterinarians and poultry disease experts from H5N1-affected and at-risk countries to teach testing protocols.
- Professional expertise and funding to help the FAO in Rome develop a new Crisis Management Center, to respond rapidly and effectively to avian influenza outbreaks in poultry worldwide.
- Assistance to H5N1-affected countries, including laboratory equipment, reagents, and sample shipping containers to bolster AI testing and diagnostic programs.
- In collaboration with FAO and OIE, USDA has deployed expert scientists, veterinarians, and animal health emergency managers to H5N1-affected countries to test and diagnose AI; advise on surveillance and vaccination programs to protect poultry; and advise on emergency contingency plans.

**Surveillance:** USDA works with Federal and State partners and industry to monitor U.S. bird populations. Surveillance is conducted in four key areas: live bird markets, commercial flocks, backyard flocks, and migratory bird populations.

Extensive testing occurs in live bird markets and commercial flocks. Additionally, birds that show signs of illness are tested.

Through a backyard flock biosecurity program, USDA encourages backyard and small poultry producers to strengthen biosecurity practices in order to prevent the introduction of AI into their flocks. Biosecurity refers to practical management practices that help to prevent diseases.

USDA recommends that owners of backyard flocks follow these six tips to prevent poultry disease:

- keep your distance (restrict access to your property and your birds);
- keep it clean (clean and disinfect your clothes, shoes, equipment, and hands);
- don't haul disease home (if you have been near other birds or bird owners, clean and disinfect poultry cages and equipment before going home);
- don't risk disease from your neighbor (do not borrow lawn and garden equipment, tools, or poultry supplies from other bird owners);
- know the warning signs (sudden increase in bird deaths, sneezing, coughing, nasal discharge, watery or green diarrhea, lack of energy, poor appetite, drop in egg production, swelling around the eyes, neck, and head, and purple discoloration of wattles, combs, and legs); and
- report sick birds (call your local or State veterinarian, or USDA toll-free at 1-866-536-7593).

## USDA Is ready to act.

USDA works closely with its Federal, State, and tribal partners, as well as industry stakeholders, to coordinate emergency response to animal disease outbreaks, including AI.

USDA provides expertise, funding, and support personnel to States when LPAI is detected. Close attention is paid to LPAI H5 and H7 strains, because of their potential to mutate into HPAI. When HPAI is detected, USDA and State personnel are primary responders because of the rapid spread and high death rate among poultry.

In the event of an HPAI outbreak in the United States, USDA would work with States and industry to respond quickly and decisively following these five basic steps:

- **Quarantine** – restrict movement of poultry and poultry-moving equipment into and out of the control area;
- **Eradicate** – humanely euthanize;
- **Monitor region** – broad area of testing;
- **Disinfect** – kills virus; and
- **Test** – confirm that the poultry farm is AI virus-free.

USDA also maintains a bank of AI vaccine that could be used to protect healthy birds outside a control area, if necessary.

## Expanded wild bird testing serves as an early warning system.

USDA has been testing wild migratory birds for HPAI H5N1 since 1998 in both Alaska and the Atlantic flyway and has worked with Federal, State, and academic partners to enhance testing and develop a national strategic plan for the early detection of HPAI H5N1.

The wild bird plan targets those bird species in North America at the highest risk because of their migratory patterns. Key species of interest include ducks, geese, and shorebirds. USDA and its partners plan to collect approximately 100,000 samples from wild birds as well as 50,000 samples from waterfowl habitats across the United States annually.

The wild bird plan recommends a prioritized sampling system, with emphasis first in Alaska, the Pacific flyway, and on the Pacific islands, followed by the Central, Mississippi, and Atlantic flyways. It also establishes protocols for testing and tracking the data.

## USDA researchers are recognized avian influenza experts.

USDA researchers at the Southeast Poultry Research Lab focus on identifying the source of AI viruses, and how they change and cause disease. These experts have developed and continually improve rapid diagnostic screening tests that have been shared with a network of over 45 USDA-approved animal health labs throughout the United States as well as other countries. They also have developed and improved poultry vaccines. USDA also partners with universities on AI research, education, and extension projects.

USDA's National Veterinary Services Laboratories (NVSL) in Ames, Iowa, is the only internationally recognized AI reference laboratory in the U.S. Although a network of laboratories across the Nation are approved to conduct AI screening tests, all confirmatory AI testing in the U.S. is conducted by NVSL.

## USDA is committed to transparency.

Delivering factual, timely information is a priority for USDA. In the event that a USDA screening test, which provides only presumptive results, indicates a possible presence of H5N1 in a bird, the public will be notified. Confirmatory testing would then be conducted by USDA, with results expected within 5-10 days, and those results also would be shared with the public in a timely fashion, regardless of the AI strain identified.

## Properly prepared and cooked poultry is safe to eat – you have the power to protect yourself.

Eating properly handled and cooked poultry and eggs is safe. Cooking poultry to an internal temperature of 165 °F kills the AI virus as it does other bacteria and viruses. Cooking eggs until they are firm throughout kills the AI virus.

AI is not transmissible by eating properly prepared poultry. If HPAI were detected in the United States, the chance of infected poultry or eggs entering the food chain would be extremely low because of the rapid onset of symptoms in poultry as well as the safeguards in place, which include testing of flocks, and Federal inspection programs.

Cooking poultry, eggs, and other poultry products to the proper temperature and preventing cross-contamination between raw and cooked food is the key to safety. You should:

- Wash hands with warm water and soap for at least 20 seconds before and after handling raw poultry and eggs;
- Prevent cross-contamination by keeping raw poultry and eggs away from other foods;
- After cutting raw meat, wash cutting board, knife, and countertops with hot, soapy water;
- Sanitize cutting boards by using a solution of 1 tablespoon chlorine bleach in 1 gallon of water; and
- Use a food thermometer to ensure poultry has reached the safe internal temperature of at least 165 °F to kill foodborne germs that might be present, including the AI viruses.



## More Information

USDA efforts to protect against and respond to bird flu: [www.usda.gov/birdflu](http://www.usda.gov/birdflu)

**Report Sick Farm Birds:** If your farm birds are sick or dying, call USDA's Veterinary Services toll-free at 1-866-536-7593, or your State Veterinarian or local extension agent.

**Report Dead Wild Birds:** Dead wild birds can be reported to State or Federal wildlife agencies. Information on how to make contact with wildlife officials in your State is available at [www.usda.gov/birdflu](http://www.usda.gov/birdflu)

**Safe Food Preparation:** USDA Meat and Poultry Hotline - 1-888-MPHotline (1-888-674-6854), TTY: 1-800-256-7072 (available in English and Spanish). Online answers are provided at [www.fs.is.usda.gov](http://www.fs.is.usda.gov) by clicking on "Ask Karen."

Current Listing of Countries/Areas Affected with HPAI H5N1: [www.usda.gov/birdflu](http://www.usda.gov/birdflu)

U.S. Government efforts to protect human health: [www.pandemicflu.gov](http://www.pandemicflu.gov)

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REVISED August 2006



United States  
Department of  
Agriculture

# Avian Influenza

## Protecting the United States

USDA Preparations and Response





# Fact Sheet

## USDA AVIAN INFLUENZA FACT SHEET

*Updated: April 2015*

There are two types of avian influenza (AI) that are identified as H5N1. A difference exists in the virus classification; one is low pathogenic (LPAI) and the other is highly pathogenic (HPAI). Pathogenicity refers to the ability of the virus to produce disease. HPAI H5N1, often referred to as the “Asian” H5N1, is the type causing worldwide concern. LPAI H5N1, often referred to as the “North American” H5N1, is of less concern.

Recently, on January 16, 2015, USDA’s National Veterinary Services Laboratories (NVSL) confirmed a finding of a *novel* avian influenza virus in a wild green winged teal (a wild duck) in Washington State (new H5N1). ***This particular strain had not been identified in an animal or human host before.*** Following is an explanation of the differences among them, including the newly detected mixed origin HPAI viruses.

### Newly-Detected Mixed Origin HPAI Viruses

HPAI, or “high path” AI, spreads rapidly and is often fatal to chickens and turkeys. The HPAI H5N8 virus originated in Asia and spread rapidly along wild bird migratory pathways during 2014, including the Pacific flyway. In the Pacific flyway, the H5N8 virus has mixed with North American avian influenza viruses, creating new mixed-origin viruses.

- These mixed-origin viruses contain the Asian-origin H5 part of the virus, which is highly pathogenic to poultry.
- The N parts of these viruses came from native North American avian influenza viruses found in wild birds.

USDA has identified Eurasian H5N8 HPAI and mixed-origin viruses, H5N2 and a novel H5N1, in the Pacific Flyway.

The HPAI H5N2 virus strain has been confirmed in several states along three of the four North American Flyways: Pacific, Central and Mississippi.

The novel HPAI H5N1 virus is **not** the same virus as the H5N1 virus found in Asia, Europe and Africa that has caused some human illness. This HPAI H5N1 strain is a new mixed-origin virus that combines the H5 genes from the Asian HPAI H5N1 virus with N genes from native North American avian influenza viruses found in wild birds.

With several different viruses circulating in wild birds, it is not unexpected that a new mixed-origin virus was identified. Viruses continually mutate and form new combinations with genetic material from similar viruses. It’s not unexpected, nor is it cause for alarm. It is, however, a main reason why it is necessary to continue USDA surveillance efforts for avian influenza in migratory birds. USDA is part of the National Flyway Council and posts [confirmations of wild bird highly pathogenic avian influenza case in the U.S.](#)

### ***HPAI H5N1 (“Asian” H5N1)***

Because HPAI spreads rapidly and is often fatal to chickens and turkeys, this includes “Asian” HPAI H5N1 which has been found in Southeast Asia, Africa and Europe. Millions of birds have died in countries where “Asian” HPAI H5N1 has been detected. This virus also has infected people, most of whom have had direct contact with infected birds.

“Asian” HPAI H5N1 has not been detected in the United States. However, other strains of HPAI have been detected and eradicated three times in the United States: in 1924, 1983 and 2004. No significant human illness resulted from these outbreaks.

The 1924 HPAI H7 outbreak was contained and eradicated in East Coast live bird markets.

The 1983-84 HPAI H5N2 outbreak resulted in humanely euthanizing approximately 17 million chickens, turkeys and guinea fowl in Pennsylvania and Virginia to contain and eradicate the disease.

In 2004, USDA confirmed an HPAI H5N2 outbreak in chickens in Texas. The disease was quickly eradicated thanks to close coordination and cooperation between USDA and State, local, and industry leaders.

### ***LPAI H5N1 (“North American” H5N1)***

LPAI, or “low path” AI, commonly occurs in wild birds. In most cases, it causes minor sickness or no noticeable signs of disease. It is rarely fatal in birds. LPAI strains are not known to be a human health concern. This includes LPAI H5N1. Evidence of LPAI H5N1 has been found in wild birds in the United States in recent years and is not closely related to the more severe HPAI H5N1 circulating overseas. Examples of historical reports of LPAI H5N1 received by USDA include:

1975 – LPAI H5N1 was detected in a wild mallard duck and a wild blue goose in Wisconsin as part of routine sampling, not as a result of noticeable illness in the birds

1981 and 1985 – the University of Minnesota conducted a sampling procedure in which sentinel ducks were monitored in cages placed in the wild for a short period of time and LPAI H5N1 was detected in those ducks in both years.

1983 – LPAI H5N1 was detected in ring-billed gulls in Pennsylvania.

1986 - LPAI H5N1 was detected in a wild mallard duck in Ohio as part of routine sampling, not as a result of noticeable illness in the birds.

2002 – LPAI H5N1 antibodies were detected in turkeys in Michigan but the virus could not be isolated; therefore this detection could not be confirmed.

2005 - LPAI H5N1 was detected in ducks in Manitoba, Canada.

2006 – LPAI H5N1 was confirmed in two Michigan mute swans and mallard ducks; Maryland resident wild mallard ducks, and Pennsylvania wild mallard ducks; and Delaware green-winged teals, all sampled as part of USDA’s expanded avian influenza surveillance.

In the past, there was no requirement for reporting or tracking LPAI H5 or H7 detections in wild birds so states and universities tested wild bird samples independently of USDA. Because of this, the above list of previous detections might not be all inclusive of past LPAI H5N1 detections. However, the World Organization for Animal Health (OIE), in 2006, changed its requirement of reporting detections of avian influenza. Now, all confirmed LPAI H5 and H7 AI subtypes must be reported to the OIE because of their potential to mutate into highly pathogenic strains. Therefore, USDA now tracks these detections in wild birds, backyard flocks, commercial flocks and live bird markets.

## TERMINOLOGY

**Avian influenza (AI)**--the bird flu--is a virus that infects wild birds (such as ducks, gulls, and shorebirds) and domestic poultry (such as chickens, turkeys, ducks, and geese). There is flu for birds just as there is for humans and, as with people, some forms of the flu in birds are worse than others.

AI viruses are classified by a combination of two groups of proteins: the hemagglutinin or H proteins, of which there are 16 (H1-H16), and neuraminidase or N proteins, of which there are 9 (N1-N9).

**Pathogenicity:** the ability of the virus to produce disease. AI strains also are divided into two groups based upon the ability of the virus to produce disease: low pathogenic (LP) and highly pathogenic (HP).

**Low Pathogenic or “low path” avian influenza (LPAI):** LPAI occurs naturally in wild birds and can spread to domestic birds. In most cases it causes no signs of infection or only minor symptoms in birds. These strains of the disease pose little significant threat to human health. These strains are common in the U.S. and around the world.

**Highly Pathogenic or “high path” avian influenza (HPAI):** HPAI is often fatal in chickens and turkeys. HPAI spreads rapidly and has a higher death rate in birds than LPAI.

#

## What Is Bird Flu?

Avian influenza (AI), or "bird flu," is a virus that infects domestic poultry, such as chickens, turkeys, quail, and geese, and wild birds such as shorebirds and waterfowl.

AI viruses are divided into two groups—highly pathogenic (HPAI) and low pathogenic (LPAI)—based on the ability of the virus to produce disease and the severity of illness it can cause. HPAI spreads rapidly and has a high death rate in birds. LPAI causes only minor illness and occurs naturally in migratory waterfowl. The concern is that some LPAI virus strains are capable of mutating into HPAI viruses.

HPAI viruses are considered exotic or foreign to the United States because they do not occur naturally here. HPAI has been detected and eradicated by the U.S. Department of Agriculture (USDA) three times: in 1924, 1983, and 2004. The 1983 outbreak resulted in the deaths of about 17 million chickens, turkeys, and guinea fowl in Pennsylvania and Virginia. Managing this outbreak cost nearly \$65 million and caused retail egg prices to increase by more than 30 percent.

## What Are the Signs of Bird Flu?

HPAI can strike quickly and spread rapidly without any warning. When infected birds do show signs, here's what to look for:

- Lack of energy and appetite
- Decreased egg production and/or soft-shelled or misshapen eggs
- Swelling of the head, eyelids, comb, wattles, and hocks
- Purple discoloration of the wattles, combs, and legs
- Runny nose, coughing, sneezing
- Stumbling or falling down
- Diarrhea
- Sudden death without any clinical signs



USDA file photo  
Purple discoloration of the comb could indicate HPAI.



USDA file photo  
Birds affected by HPAI could show swelling of the head, wattles, combs, and face.



USDA file photo  
Hemorrhaging of the skin and legs is just one of the signs birds might exhibit when infected with the HPAI virus.



USDA file photo  
Nasal discharge (a runny nose) can be a sign of HPAI.

Biosecurity For Birds is an outreach and education campaign to raise awareness among backyard poultry owners about the steps they can take to prevent AI and other infectious poultry diseases and what to do if they suspect a disease outbreak.

## More Information



For information on keeping your birds healthy, visit USDA's Biosecurity For Birds Web site:  
<http://healthybirds.aphis.usda.gov>

For information about HPAI, contact:  
USDA/APHIS/Veterinary Services  
National Center for Animal Health  
Emergency Management  
4700 River Road, Unit 41  
Riverdale, MD 20737-1231  
Phone: (301) 734-8073  
Fax: (301) 734-7817

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Issued May 2011  
Cover image: USDA, Judy Rodriguez

Important Information for Backyard Poultry Owners

## Protect Your Birds From Avian Influenza (Bird Flu)



## How Does Bird Flu Spread?

*HPAI spreads quickly by direct, bird-to-bird contact. The disease can also spread indirectly, for example, when birds come in contact with contaminated surfaces or materials.*

Migratory waterfowl (i.e., wild ducks and geese), smuggled poultry and poultry products, and the movement of poultry, poultry equipment, and people are potential sources for introducing the disease to domestic birds. The bird flu virus can travel on manure, egg flats, crates, other farming materials/equipment, and people who have picked up the virus on their clothing, shoes, or hands.



USDA file photo

*Allowing backyard flocks to come in contact with wild birds could put them at risk for infectious poultry diseases such as HPAI.*



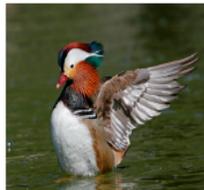
Polly Berkenstock

*Fencing your bird area can help keep your flock safe from predators and from contact with other birds that could spread disease.*



Deanna Stines

*Don't share equipment, tools, or poultry supplies with neighbors or other bird owners. If you must, disinfect these items before bringing them home.*



tate\_feathers.com

*Migratory waterfowl could potentially introduce HPAI to your birds. So be sure they don't share a water source with your birds, and keep your birds' food protected.*

# How Can You Protect Your Birds?



Getty Images

## Six simple steps can help keep your birds—and those of your neighbors—free of disease.

- 1. Keep your distance.** Restrict access to your property and your birds. If visitors have birds of their own, do not let them near your birds. Your birds should not have contact with wild birds and migratory waterfowl because they can carry germs and diseases.
- 2. Keep it clean.** Wash your hands thoroughly before and after working with your birds. Wear clean clothes and scrub your shoes with disinfectant. Clean and disinfect equipment, including cages and tools, that comes in contact with your birds or their droppings. Remove manure before disinfecting equipment. Properly dispose of dead birds.
- 3. Don't haul disease home.** Buy birds from reputable sources so you know you're getting healthy birds. Keep new birds separate from the rest of your flock for at least 30 days. If your birds have been to a fair or exhibition, keep them separated from your flock for 2 weeks after the event.
- 4. Don't borrow disease from your neighbors.** Do not share garden equipment or poultry supplies with your neighbors or other bird owners. If you do bring these items home, clean and disinfect them before they reach your property.
- 5. Know the warning signs.** Early detection can help prevent the spread of disease. While it may be hard to tell if your bird has AI, when you check your birds frequently, you may be able to tell if something is wrong.
- 6. Report sick birds.** Don't wait. If your birds are sick or dying, call your local cooperative extension office, your veterinarian, or the State Veterinarian or State animal/poultry diagnostic laboratory. Or call USDA toll free at 1-866-536-7593, and we'll put you in touch with a local contact who can help you.

## How USDA Works To Keep HPAI Out of the Country

*HPAI is a threat to U.S. poultry. The United States is the world's largest producer and exporter of poultry meat and the second largest egg producer.*

Total U.S. poultry production is valued at nearly \$32 billion annually. A major outbreak of HPAI would be costly to the poultry industry, consumers, and taxpayers and could harm backyard flocks as well.

To protect the U.S. poultry population, USDA quarantines and tests live birds imported into the United States to ensure that they do not have any foreign animal diseases such as HPAI. USDA also maintains trade restrictions on poultry and poultry products from countries and/or regions where HPAI has been detected in commercial or traditionally raised poultry.

Surveillance is another important part of USDA's efforts to protect the health of U.S. flocks. USDA monitors for illegally smuggled poultry and poultry products through an anti-smuggling program in coordination with the U.S. Department of Homeland Security's Customs and Border Protection. In addition, USDA works with a nationwide network of Federal and State partners, university personnel, USDA-accredited veterinarians, and industry members to monitor for HPAI in key areas of the country's bird population. These areas include live bird markets, commercial flocks, backyard flocks, and migratory birds.

# Highly Pathogenic Avian Influenza (HPAI)

## HPAI in Poultry: What To Expect If You Suspect

Highly pathogenic avian influenza (HPAI) is a serious poultry disease that spreads very quickly. With this threat, it's more important than ever for you to keep strict biosecurity measures at your poultry operations and watch your birds closely for any signs of the disease. We need you to quickly report problems in your flocks and work with us to respond. Your help will be vital in protecting the U.S. poultry industry from this deadly disease. The faster we can respond and depopulate sick birds, the faster we can stop the virus from spreading.

Be on the lookout for HPAI. Here's what to watch for, where to report, and what to expect from State and Federal responders if you have a suspected case in your birds.

### Know the Warning Signs

- Sudden increase in bird deaths without any clinical signs
- Lack of energy and appetite
- Decrease in egg production
- Soft- or thin-shelled or misshapen eggs
- Swelling of the head, eyelids, comb, wattles, and hocks
- Purple discoloration of the wattles, comb, and legs
- Gasping for air (difficulty breathing)
- Coughing, sneezing, and/or nasal discharge (runny nose)
- Stumbling or falling down
- Diarrhea

### Report It!

If your birds are sick or dying, report it right away. This is one of the most important things you can do to keep HPAI from spreading. Call:

- Your flock or local veterinarian,
- The State Veterinarian,
- The State animal health/poultry diagnostic laboratory, or
- USDA toll-free at **1-866-536-7593**.



Complete paralysis

USDA file photo

*HPAI is a deadly disease for poultry. It can infect all types of chickens and turkeys, plus many other kinds of birds. HPAI can strike suddenly and spread fast. It is devastating for poultry industries.*



Swelling of the tissue around the eyes and neck

USDA file photo

## What To Expect Next

After you report, a Federal or State animal health official will contact you to learn more about your flock and operation. If we suspect HPAI in your flock, response personnel will come to your operation quickly and work with you on the steps below.

### Sample Collection

A Federal or State animal health official will take samples from live birds, dead birds, and/or your barn for testing. The samples then go to the closest diagnostic laboratory or the National Veterinary Services Laboratories, and you can expect initial results within 24 hours. Until the results come back, we consider your operation a suspect HPAI case. This means we work with you to put measures in place that guard against any further disease spread.

### Quarantine

The State will quarantine your facility. Only authorized workers are allowed in and out of your property, and the movement of poultry, poultry products, and equipment is also restricted. This is to help make sure the virus, if present, does not keep spreading.

### Inventory

USDA will start working with you to inventory your poultry. If the laboratory confirms HPAI, this information helps us appraise your flock and give you 100 percent of fair market value for your birds that will need to be depopulated. We will also offer a standard amount to cover costs for virus elimination activities at your operation (cleanup work).

## If Your Flock Tests Positive for HPAI

If the test results are positive, a State or Federal veterinary medical officer (VMO) will notify you immediately. We will then assign a caseworker who will be onsite to guide you through the next phase of the response and answer any questions you may have. Your caseworker will work closely with you as we prepare to depopulate your flock and find out, as best we can, how HPAI may have entered your facility and if it has spread to any neighboring farms.

Our goal is to depopulate your flock within 24 hours of first detecting HPAI. This 24-hour window is critical. By acting quickly, we can keep the virus from building up in the environment and spreading further. We have several depopulation methods we can use to meet the 24-hour goal and will work with you to figure out the best option.

## For More Information

More details about our response steps are available in “HPAI: A Guide To Help You Understand the Response Process.”

To download this document and find other resources on HPAI and emergency response, go to [www.usda.gov/avian\\_influenza.html](http://www.usda.gov/avian_influenza.html) and [www.aphis.usda.gov/fadprep](http://www.aphis.usda.gov/fadprep).



Twisting of the head and neck (torticollis)  
USDA file photo

### FLOCK INVENTORY: WHAT INFO WILL I NEED?

To help speed the inventory process, you'll need to have the following information ready:

- Type of flock (turkey, chicken, layer, breeder, backyard, etc.)
- Age, sex, and number of each type of bird
- Number of barns and number of birds in each barn
- Bird mortality records
- Onset date of disease signs (if present)
- County where your farm is located
- GPS coordinates (latitude/longitude) and 911 address for your farm
- Name of your facility/complex
- Name of owner/manager

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United States Department of Agriculture

# Highly Pathogenic Avian Influenza

## A Guide To Help You Understand the Response Process



### 1 Detect

You see unusual signs of illness or sudden deaths in your flock. You report it to your private or State veterinarian. Samples are taken and tested. You find out your flock is positive for HPAI.

### 2 Quarantine

USDA and State personnel come to your farm. We assign you a caseworker, who will be your main point of contact onsite, answer your questions, and guide you through the needed paperwork. We will also place your operation under quarantine, meaning only authorized workers are allowed in and out, and movement restrictions for poultry, poultry products, and equipment go into effect. We contact neighboring poultry farms and start testing their birds to see if they've been affected, too.

### 3 Appraise

We work with you to create a flock inventory. This lists how many birds you have, what species they are, their age, and other key details that will help us give you 100 percent of fair market value for your birds.

### 4 Depopulate

Infected flocks are depopulated as quickly as possible—ideally within 24 hours of the first HPAI detection—to get rid of the virus.

### 5 Compensate

You receive your first indemnity payment early on in the response process. We also pay you a standard amount for virus elimination activities (cleanup work).

### 6 Manage Disposal

USDA will help you dispose of the dead birds safely. Disposal methods include composting, burial, incineration, rendering, or landfilling. The options you'll have depend on several things: what type of farm you have, the specific conditions there, State and local laws, and what you prefer.

### 7 Eliminate Virus

The next step is to wipe out all traces of the virus at your property. To kill the virus, thoroughly clean and disinfect the barn, equipment, and all affected areas of your farm. You can do this work yourself or hire contractors to handle it.

### 8 Test

As soon as you're ready, let your caseworker know you're finished with cleanup. Your site must then stay empty for at least 21 days. During this time, we'll return to collect and test environmental samples. We need to confirm that your property is completely virus-free.

### 9 Restock

Once USDA and the State both approve, you can restock your facilities and start production again. State officials will release your farm from quarantine after all required testing and waiting periods are done.

### 10 Maintain Biosecurity

After restocking, you'll need to continue maintaining the highest biosecurity standards to keep the virus from coming back. For biosecurity tips, go to [www.aphis.usda.gov/](http://www.aphis.usda.gov/) publications and download the factsheet "Prevent Avian Influenza at Your Farm."



### How Long Does the Process Take?

Ideally, this entire process could be completed in as soon as 60–120 days. However, the timeframe varies depending on many things (for example, flock size, depopulation and disposal methods used, test results, farm's location). We're committed to restoring production as fast as we can while also protecting poultry health.

### Questions?

Talk with your caseworker or the State or Federal officials responding to the disease event in your area.

For general information and contacts, visit:

[www.usda.gov/avian\\_influenza.html](http://www.usda.gov/avian_influenza.html)  
[www.aphis.usda.gov/fadprep](http://www.aphis.usda.gov/fadprep)

# Prevent Avian Influenza at Your Farm

## Improve Your Biosecurity with Simple Wildlife Management Practices

Avian influenza is a disease found in wild and domestic birds. Although wild waterfowl rarely show signs of the disease, they can shed the virus into the environment through their oral and nasal secretions and feces. The viruses can cause severe illness and death in domestic birds.

The U.S. Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS) is working closely with State and local officials and industry experts to assist poultry producers in the surveillance, reporting, and control of highly pathogenic avian influenza (HPAI). Experts are still evaluating how HPAI is spreading in the United States.

### Biosecurity is Key

The best way to prevent HPAI at your farm is by consistently using appropriate biosecurity measures. The USDA and its industry partners provide a list of recommended biosecurity measures at [www.aphis.usda.gov/animal\\_health/birdbiosecurity/biosecurity](http://www.aphis.usda.gov/animal_health/birdbiosecurity/biosecurity).

You can build upon and enhance these measures with the addition of simple wildlife management practices around your farm. The following management practices can help you prevent wild birds and other wildlife from coming into direct contact with your poultry, as well as wild bird fecal material and secretions from being accidentally transported on boots, equipment, and food to your birds.

### 1. Reduce wildlife attractants



<b>Remove standing water</b>	<ul style="list-style-type: none"> <li>• Grade property to avoid pooling of water.</li> <li>• Fill areas where water stands for more than 48 hours.</li> <li>• Workers should avoid walking or moving equipment in or near standing water used by wildlife.</li> <li>• Consider French drains and culverts to carry water away from poultry houses.</li> </ul>
<b>Manage risks at ponds and basins</b>	<ul style="list-style-type: none"> <li>• Do not use untreated surface water for watering poultry or cleaning poultry barns and other facilities as it may be contaminated.</li> <li>• Consider removing vegetation from the banks of man-made water structures.</li> <li>• Use deterrent techniques (e.g. wire grids, predator decoys, and scare devices) to keep waterfowl from using water bodies near poultry barns.</li> <li>• Use fencing to separate natural ponds or vegetation areas from the active area around barns.</li> </ul>
<b>Reduce food sources</b>	<ul style="list-style-type: none"> <li>• Do not feed wildlife.</li> <li>• Locate feed structures on a clean pad.</li> <li>• Inspect pipes and connections regularly for leaks.</li> <li>• Keep a broom and lidded garbage container at every feed storage area for quick clean-ups.</li> <li>• Natural wildlife feed such as grass seeds, insects and fruit trees, may also be present:             <ul style="list-style-type: none"> <li>– Mow frequently</li> <li>– Do not pile used litter near barns</li> <li>– Remove fallen fruit</li> </ul> </li> </ul>



### Cover waste

- Keep carcasses covered at all times.
- Close and latch dumpster and trash can lids.

## 2. Prevent wildlife access



### Remove perches, plug holes

- Repair holes and tears in barn walls.
- Remove unnecessary ledges or horizontal surfaces.
- Install exclusionary netting, screens, and perch deterrents, such as repellent gel or bird spikes.
- Before nesting season begins, wash away or remove old nests in accordance with state and federal regulations. Please note it is unlawful to remove nests with eggs or young in them at any time of year.
- Inspect foam installation for signs of rodent or bird digging, chewing or pecking.



## 3. Add wildlife deterrents



### Move and replace scare devices frequently

- Move decoys and scare devices frequently to improve effectiveness.
- Pyrotechnics can be effective, but require dedicated and trained personnel and may be stressful to poultry.

*NOTE: USDA and other experts do not recommend the lethal removal of wild birds in order to prevent the spread of HPAI. Because of the high number and constant movement of wild birds, the use of lethal methods is neither practical nor environmentally sound.*



Producers who are concerned about wildlife accessing areas near their poultry facilities can contact their USDA-APHIS Wildlife Services' state office at **1-866-4USDA-WS (1-866-487-3297)** for assistance. They can also visit the USDA website at [www.usda.gov/avianinfluenza](http://www.usda.gov/avianinfluenza) to learn more about avian influenza and recommended biosecurity practices.

## Section 3:

# Process Following Confirmation of HPAI



# Producer Information Sheet

Report Sick Birds : **ADAI - 334-240-7253** (Ext. 1 for State Veterinarian and Ext. 4 for Poultry Unit)

**USDA Toll Free: 1-866-536-7593**

## Questions and Answers: Highly Pathogenic Avian Influenza

### Q. What is USDA's response process?

A. As part of the existing **USDA avian influenza response plans**, Federal and State partners as well as industry are responding quickly and decisively to these outbreaks by following these five basic steps:

1. **Quarantine**—restricting movement of poultry and poultry-moving equipment into and out of the control area;
2. **Eradicate**—humanely euthanizing the affected flock(s);
3. **Monitor region**—testing wild and domestic birds in a broad area around the quarantine area;
4. **Disinfect**—killing the virus in the affected flock locations; and
5. **Test**—confirming that the poultry farm is AI virus-free.

Once a flock tests positive for avian influenza (AI), USDA or a State animal health official will complete a flock inventory to use for appraisal purposes. The flock will be depopulated as soon as possible using the most efficient method available. The carcasses will be disposed of using one of several methods. These include:

- in-house composting,
- outdoor on-site composting,
- burial,
- off-site composting,
- landfill, or
- incineration.

APHIS and State officials evaluate disposal options based on the size of the flock, local conditions, and applicable local, State, and Federal laws/regulations. There are different timelines associated with each disposal option. It is extremely important to follow all steps as outlined by disposal experts in order to minimize the risk of disease spread during the disposal process.

After all carcasses are removed from the barn, the cleaning and disinfection process begins. First, all organic material is removed. Then all areas and items are washed thoroughly with detergent, rinsed, and allowed to dry. Next, a disinfectant is applied and allowed to remain wet on the surfaces for the label-specified contact time. After the contact time, surfaces are rinsed again and allowed to air dry. These processes help eliminate any remaining virus.

After cleaning and disinfection, environmental samples are collected and tested to confirm that the virus is no longer present.

Premises must remain empty for a minimum of 21 days following these steps before being released from quarantine. After being released, the premises can be restocked.

**Q. What do producers need to do?**

**A.** APHIS seeks to engage producers and their employees wherever appropriate during the disease response process. We recognize this can be a difficult time for all involved, and producers are not expected to complete the process without expert assistance.

The first point of contact for reporting sick birds is the producer’s veterinarian or the State animal health official. Producers can also report sick or unusual dead birds by calling USDA’s toll-free number at **1-866-536-7593**. If AI is suspected, samples should be taken and sent to a local or nearby National Animal Health Laboratory Network laboratory. If the results are positive, the producer will be contacted by either a State or Federal veterinary medical officer (VMO), and USDA will start the process of inventory for indemnity, the epidemiological investigation, depopulation, and so forth—all with caseworker assistance.

Producers should talk to involved animal health officials about their level of involvement and how the responders and producers can work together. Anyone who works on the farm during these processes will need to wear appropriate personal protective equipment and follow strict biosecurity procedures, as outlined by the response team.

If producers have any questions about the depopulation and disposal processes, they should talk to the State or Federal animal health officials responding to the disease event in their area.

Following confirmation of AI in their operation, a producer will need to develop a **flock plan** for all premises with confirmed H5/H7 AI infection or exposure. The flock plan sets out the steps to eradicate the virus and prevent its spread to other flocks. It also specifies the procedures required to get the facility back into production, including requirements for quarantine release. The flock plan will include cleaning and disinfection requirements, but does not require cost estimates. The flock plan must be signed by the owners, a State animal health official, and the APHIS District Director or Assistant Director. This is required before the indemnity payment can be processed. An APHIS Veterinary Services case manager will work with the producer to walk them through the process and the information required to complete all steps.

An **appraisal document** for indemnification will then be prepared by APHIS and be presented to the producer as quickly as possible (see next question for details about the appraisal process). Affected producers need to sign the appraisal document before depopulation can occur.

A **compliance agreement** must be developed if depopulation, disposal, or cleaning and disinfection will be performed by personnel other than Federal or State officials or the State, and indemnity will be requested for those activities. A compliance agreement is separate from the flock plan. The flock plan specifies the necessary procedures for the premises to resume normal production; a compliance agreement indicates what tasks will be completed, who will be responsible for each task, and how much the work is expected to cost. A compliance agreement is comparable to a statement of work produced for a contract.

**Q. What is the appraisal process for payment of indemnity?**

**A.** Once a herd or flock is confirmed by a designated laboratory to have tested positive for H5/H7 AI, animal health officials will complete an inventory to use for appraisal purposes. The inventory will list out the number of birds in the flock, along with their age at the time and their intended use.

APHIS will use this inventory as the basis for the flock appraisal. APHIS economists developed a series of species-specific appraisal calculators that use publicly available prices, costs, and productivity data to develop a value per animal. The calculators are updated monthly to account for changing feed costs and values.

The value per animal type multiplied by the number of each animal type is used to calculate total indemnity. In most cases, APHIS provides 100 percent of the indemnity amount; however, there are certain situations where APHIS may provide a lesser percentage to producers. For example, indemnity percentage may be less than 100 percent for large-scale producers who do not participate in the National Poultry Improvement Plan (NPIP; [www.poultryimprovement.org](http://www.poultryimprovement.org)).

**Q. When can producers restock their facilities?**

**A.** After cleaning and disinfection, environmental samples are collected and tested to confirm that the virus is no longer present. Animal health officials will determine the number and frequency of samples needed and will collect them accordingly. The samples will be tested at a designated laboratory, usually the National Veterinary Services Laboratories in Ames, IA.

In general, premises must remain empty for a minimum number of days after the completion of cleaning and disinfection to ensure that any residual virus has been eliminated. For HPAI, that period must be at least 21 days, as this is a single incubation period for avian influenza. (Note that this is not an OIE requirement, but a basic disease control measure and part of USDA's response plan.) The actual number of days will depend upon the specific disease agent and method of disposal used. Please discuss the exact timeline with the animal health officials responding on your farm.

Surveillance testing must also be complete in the area around the affected premises before APHIS can release it from quarantine and restocking can occur. However, in most cases, this surveillance will be completed before the 21-day waiting period begins.

**Q. Can producers compost outside of barns?**

**A.** Composting out of doors is an option in facilities (such as egg layer barns) where indoor space is restricted. However, outdoor composting requires a great deal of space and additional mitigations to discourage scavengers and keep viable pathogens from being blown around. Mitigations include a compost fleece or a thick layer of clean woodchips or other clean carbon source covering the compost pile. This cover keeps particles from blowing around and keeps scavengers out. In addition, in most instances, the State would have to permit the outdoor compost pile. APHIS is working with each facility to determine the best course of action given the size, scope, and needs of the individual operation, as well as the goal of ensuring that necessary disease control measures are taken.

**Q. What can producers do with compost? Can it be sold?**

**A.** APHIS does not regulate sale of the compost. The State agency that regulates fertilizers in any given State (could be Dept. of Ag, DNR, or Dept. of Environment) would have regulations pertaining to what the producer can or cannot do with the compost. This varies from State to State.

However, APHIS does regulate when anything can be done with the compost (sell, store, use, etc), as it can lead to the further spread of AI. Once the compost pile is assembled, it goes through two 14-day heat cycles. This is just letting the compost sit around to naturally compost. After 14 days, a composting consultant checks the temperature and turns the compost over (the turning over could take a day or so). We then wait another 14 days and check the temperature again. If the composting consultant determines that the appropriate temperature has been reached for an acceptable amount of time, APHIS releases the compost to the owner to use as allowed by State law.

**Q. What can APHIS do to reduce wait times for depopulation?**

**A.** To reduce wait times for depopulation, APHIS has increased its number of foaming units. APHIS started with one but as the number of infected premises expanded, APHIS' National Veterinary Stockpile (NVS) increased its capability to five foaming depopulation teams and contracted for six additional teams. For depopulating the layer houses, incident command teams and the NVS acquire CO<sub>2</sub> carts through various means and are having some fabricated locally. These additional assets allow us to begin depopulation within 72 hours of a presumptive positive result.

**Q. Has APHIS discussed coordinating with National Guard forces?**

**A.** The National Guard is invited to participate in a response by that State once the Governor has declared a state of emergency. APHIS works with the National Guard, but does not activate them.

**Q. How is APHIS working to manage all of these steps in the larger and more complicated scenario of an egg-laying hen operation?**

**A.** APHIS is bringing in personnel that can manage large disposal jobs, such as companies like Clean Harbors that manage massive HAZ-Mat, tornado, and other disaster-type cleanup. We're contracting with incinerator companies, setting up mass incineration sites that could be used in a region, and working with landfills to ease their concerns about the suitability of this sort of waste in their landfills.

**Q. What do OIE guidelines state about lifting trade restrictions on infected regions?**

**A.** There are additional international trade considerations in play. The OIE guidelines include a 90-day waiting period after the last infected premises has been cleaned and disinfected before a zone or region can regain its freedom from HPAI. Most countries that have accepted our definitions of regions or zones follow this guideline and may reinstate trade after this 90-day period.



Animal and  
Plant Health  
Inspection  
Service

Veterinary  
Services

## HPAI Investigation - Questionnaire

### INSTRUCTIONS

The purposes of these investigations are to assess potential pathways of initial introduction of HPAI viruses onto commercial poultry operations and potential lateral transmission routes of HPAI viruses from infected premises to noninfected premises.

Following confirmation of an HPAI virus introduction into a commercial flock, an investigation should be initiated as soon as possible, no later than 1 week following detection. The investigator(s) assigned should be integrated into other response activities but their primary focus is on completion of the introduction investigation.

The investigation form provided is a guide for conducting a systematic and standardized assessment of potential pathways of initial virus movement onto the farm and potential movement of the virus off the farm. All sections of the form should be completed through direct conversation with the individual(s) most familiar with the farm's management and operations and questions are to be answered for the period 2 weeks prior to the detection of HPAI. Where applicable, direct observation of the biosecurity or management practice asked about should be conducted. This is not a box-checking exercise but an in-depth review of the current biosecurity and management practices and exposure risks on an affected farm. For example, direct observation of the farm employee donning and doffing procedures and compliance with company biosecurity practices is more important than checking the box on the form that indicates workers wear coveralls into the poultry houses. Investigators are encouraged to take notes and include them with the investigation form when completed.

An investigation form should be completed for the infected house or farm and **at least one** noninfected house or farm within the same complex as near as possible to the index infected flock.

Date: \_\_\_\_\_

Interviewer name/organization: \_\_\_\_\_

Interviewee name/organization: \_\_\_\_\_

**A. PREMISES INFORMATION**

Farm name: \_\_\_\_\_

Farm address: \_\_\_\_\_

Farm (premises) ID: \_\_\_\_\_ County: \_\_\_\_\_

Township: \_\_\_\_\_ Range: \_\_\_\_\_ Section: \_\_\_\_\_

Is facility enrolled in NPIP?.....  Yes  No

**B. PREMISES CONTACT INFORMATION**

1. Contact name: \_\_\_\_\_

Phone: \_\_\_\_\_ Cell phone: \_\_\_\_\_ Email: \_\_\_\_\_

2. Contact name: \_\_\_\_\_

Phone: \_\_\_\_\_ Cell phone: \_\_\_\_\_ Email: \_\_\_\_\_

3. Contact name: \_\_\_\_\_

Phone: \_\_\_\_\_ Cell phone: \_\_\_\_\_ Email: \_\_\_\_\_

4. Flock Veterinarian: \_\_\_\_\_

Phone: \_\_\_\_\_ Cell phone: \_\_\_\_\_ Email: \_\_\_\_\_

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**C. PREMISES DESCRIPTION**

1. Poultry type: <sub>1</sub> Broiler <sub>2</sub> Layer <sub>3</sub> Turkey <sub>4</sub> Other (specify: \_\_\_\_\_)
2. Production type: <sub>1</sub> Meat <sub>2</sub> Egg <sub>3</sub> Breeding <sub>4</sub> Other (specify: \_\_\_\_\_)
3. Age: <sub>1</sub> Multiple age <sub>2</sub> Single age
4. Sex: <sub>1</sub> Hen <sub>2</sub> Tom <sub>3</sub> Both
5. Flock size: ..... \_\_\_\_\_ # birds
6. Facility type: *[Check all that apply]*
  - Brood
  - Grow
  - Other (specify: \_\_\_\_\_)
  - Both brooder & grower houses are present on the same premises
  - Breeder
  - Commercial
7. If brooder and grower houses are present on the same premises, are there multiple stages of management (brooding and growing), in the same house?..... <sub>1</sub> Yes <sub>3</sub> No
8. Farm capacity ..... \_\_\_\_\_ # birds  
Number of barns ..... \_\_\_\_\_ # barns  
Barn capacity ..... \_\_\_\_\_ # birds
9. What is the **primary** barn type/ventilation: *[Check one only.]*
  - <sub>1</sub> Curtain sided
  - <sub>2</sub> Environmental control
  - <sub>3</sub> Side doors
  - <sub>4</sub> Other (specify: \_\_\_\_\_)
10. Are cool cell pads used? ..... <sub>1</sub> Yes <sub>3</sub> No  
If Yes, what is the source of water for these pads? \_\_\_\_\_
11. Distance in yards of closest body of water near farm: ..... \_\_\_\_\_ yd

12. Water body type: [Check all that apply.]

- Pond
- Lake
- Stream
- River
- Other (specify: \_\_\_\_\_)

13. What other types of animals are present on the farm?

- a. Beef cattle ..... <sub>1</sub> Yes <sub>3</sub> No
- b. Dairy cattle ..... <sub>1</sub> Yes <sub>3</sub> No
- c. Horses ..... <sub>1</sub> Yes <sub>3</sub> No
- d. Sheep ..... <sub>1</sub> Yes <sub>3</sub> No
- e. Goats ..... <sub>1</sub> Yes <sub>3</sub> No
- f. Pigs ..... <sub>1</sub> Yes <sub>3</sub> No
- g. Dogs ..... <sub>1</sub> Yes <sub>3</sub> No
- h. Cats ..... <sub>1</sub> Yes <sub>3</sub> No
- i. Poultry or domesticated waterfowl ..... <sub>1</sub> Yes <sub>3</sub> No
- j. Other (specify: \_\_\_\_\_) ..... <sub>1</sub> Yes <sub>3</sub> No

14. What is the **primary** water source for poultry? [Check one only.]

- <sub>1</sub> Municipal
- <sub>2</sub> Well
- <sub>3</sub> Surface water (e.g., pond)
- <sub>4</sub> Other (specify: \_\_\_\_\_)

15. Is water treated prior to delivery to poultry? ..... <sub>1</sub> Yes <sub>3</sub> No

If Yes, how is it treated and with what? \_\_\_\_\_

---

**D. FARM BIOSECURITY**

- 1. Is there a house with a family living in it on the property? ..... <sub>1</sub> Yes <sub>3</sub> No
- 2. Is there a common drive entrance to farm and residence?..... <sub>1</sub> Yes <sub>3</sub> No
- 3. Do you have signage of “no admittance” or “biosecure area” on this property? .. <sub>1</sub> Yes <sub>3</sub> No
- 4. Is there a gate to this farm entrance?..... <sub>1</sub> Yes <sub>3</sub> No
- 5. Is the gate secured/locked? ..... <sub>1</sub> Yes <sub>3</sub> No  
If Yes, what hours is it secured? \_\_\_\_\_
- 6. Is the farm area fenced in?..... <sub>1</sub> Yes <sub>3</sub> No
- 7. How frequently is vegetation mowed/bush hogged on the premises?..... \_\_\_\_\_ times/month
- 8. Is facility free of debris/clutter/trash piles? ..... <sub>1</sub> Yes <sub>3</sub> No
- 9. Is there a wash station/spray area available for vehicles? ..... <sub>1</sub> Yes <sub>3</sub> No  
If Yes, what disinfectant is used? \_\_\_\_\_
- 10. Is there a designated parking area for workers and visitors  
away from the barns/pens? ..... <sub>1</sub> Yes <sub>3</sub> No
- 11. Is there a changing area for workers?..... <sub>1</sub> Yes <sub>3</sub> No  
Do they shower?..... <sub>1</sub> Yes <sub>3</sub> No
- 12. Do workers don dedicated laundered coveralls before entering  
each house on the premises?..... <sub>1</sub> Yes <sub>3</sub> No
- 13. Do worker wear rubber boots or boot covers in poultry houses?..... <sub>1</sub> Yes <sub>3</sub> No
- 14. Are the barn/pen doors lockable?..... <sub>1</sub> Yes <sub>3</sub> No  
Are they routinely locked? ..... <sub>1</sub> Yes <sub>3</sub> No
- 15. Are foot pans available at barn/pen entrances?..... <sub>1</sub> Yes <sub>3</sub> No  
Are they in use?..... <sub>1</sub> Yes <sub>3</sub> No
- 16. Are foot baths dry (powdered or particulate disinfectant)? ..... <sub>1</sub> Yes <sub>3</sub> No
- 17. Are foot baths liquid disinfectant? ..... <sub>1</sub> Yes <sub>3</sub> No
- 18. Frequency foot pan solutions are changed? ..... \_\_\_\_\_ times/month

What disinfectant is used? \_\_\_\_\_

19. Is there an entry area in the barns/pens before entering the bird area? ..... <sub>1</sub> Yes <sub>3</sub> No
20. What pest and wildlife control measures are used on this farm?
- a. Rat and mouse bait stations ..... <sub>1</sub> Yes <sub>3</sub> No
- b. Bait stations checked at least every 6 weeks ..... <sub>1</sub> Yes <sub>3</sub> No
- c. Fly control used..... <sub>1</sub> Yes <sub>3</sub> No  
 If Yes, type and frequency: \_\_\_\_\_
- d. Houses are bird proof ..... <sub>1</sub> Yes <sub>3</sub> No
- e. Wild birds seen in house ..... <sub>1</sub> Yes <sub>3</sub> No  
 If Yes, type, number and frequency: \_\_\_\_\_
- f. Raccoons, possums, foxes seen in or around poultry houses ..... <sub>1</sub> Yes <sub>3</sub> No
- g. Wild turkeys, pheasants, quail seen around poultry ..... <sub>1</sub> Yes <sub>3</sub> No
21. Are biosecurity audits or assessments (company or third party) conducted on this farm? ..... <sub>1</sub> Yes <sub>3</sub> No  
 If Yes, when was the last audit or assessment conducted? \_\_\_\_\_  
 (Obtain a copy of the result of the audit or assessment if available.)
22. Has this farm been confirmed positive for HPAI? ..... <sub>1</sub> Yes <sub>3</sub> No

**E. FARM HELP/WORKERS**

1. Total number of persons working on farm ..... \_\_\_\_\_ #
2. Number of workers living on the farm premises who are:
- a. Family..... \_\_\_\_\_ #
- b. Nonfamily..... \_\_\_\_\_ #
3. Workers are assigned to: *[Check one only.]*
- <sub>1</sub> Entire farm
- <sub>2</sub> Specific barns/areas
4. Do the workers have a common break area? ..... <sub>1</sub> Yes <sub>3</sub> No  
 If Yes, location: \_\_\_\_\_

- 
5. Are workers employed by other poultry operations?..... <sub>1</sub> Yes <sub>3</sub> No
6. How often are training sessions held on biosecurity for workers?..... \_\_\_\_\_ times/year
7. Are family members employed by other poultry operations or processing plants? <sub>1</sub> Yes <sub>3</sub> No  
If Yes, poultry operation or processing plant: \_\_\_\_\_
8. Do part-time/weekend help and other extended family members on holidays and vacations? ..... <sub>1</sub> Yes <sub>3</sub> No
9. Are workers (full & part-time) restricted from being in contact with backyard poultry?..... <sub>1</sub> Yes <sub>3</sub> No  
How is this communicated? \_\_\_\_\_

### F. FARM EQUIPMENT

Is the equipment used on this premises farm specific, under joint ownership that remains on this premises, or under joint ownership and used on other farm premises? A list of equipment follows.

1. Company vehicles/trailers:  
Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No  
If No, by whom is equipment jointly used: \_\_\_\_\_  
Dates: \_\_\_\_\_
2. Feed trucks (excess feed):  
Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No  
If No, by whom is equipment jointly used: \_\_\_\_\_  
Dates: \_\_\_\_\_
3. Gates/panels:  
Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No  
If No, by whom is equipment jointly used: \_\_\_\_\_  
Dates: \_\_\_\_\_
4. Lawn mowers:  
Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No  
If No, by whom is equipment jointly used: \_\_\_\_\_  
Dates: \_\_\_\_\_

5. Live haul loaders:

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

6. Poult trailers: Farm specific?

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

7. Pre-loaders:

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

Describe pre-loader cleaning and disinfection procedures:

\_\_\_\_\_  
\_\_\_\_\_

8. Pressure sprayers/washers:

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

9. Skid-steer loaders:

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

10. Tillers:

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

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11. Trucks:

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

12. Other equipment: \_\_\_\_\_

Farm specific? ..... <sub>1</sub> Yes <sub>3</sub> No

If No, by whom is equipment jointly used: \_\_\_\_\_

Dates: \_\_\_\_\_

### G. LITTER HANDLING

1. Litter type: \_\_\_\_\_

2. Supplier/source: \_\_\_\_\_

3. Is a litter shed present? ..... <sub>1</sub> Yes <sub>3</sub> No

4. Do you do partial cleanouts? ..... <sub>1</sub> Yes <sub>3</sub> No

If Yes, give dates of last partial cleanout: \_\_\_\_\_

5. Date of last cleanout: ..... \_\_\_\_\_ date

Frequency of cleanout: ..... \_\_\_\_\_ times/month

6. Who does the cleanout?

<sub>1</sub> Grower

<sub>2</sub> Contractor

If contractor, name and location \_\_\_\_\_

7. Litter is disposed of:

<sub>1</sub> On farm

<sub>2</sub> Taken off site

If taken offsite, name and location: \_\_\_\_\_

**H. DEAD BIRD DISPOSAL**

1. Approximate normal daily mortality ..... # birds
2. How is daily mortality handled?
  - a. On-farm: Burial pit/incinerator/composted/other (specify: \_\_\_\_\_)
  - b. Off-farm: Landfill/rendering/other (specify: \_\_\_\_\_)
  - c. Off-farm disposal performed by: Owner/employee/other (specify: \_\_\_\_\_)
  - d. If burial or compost pits are used, are carcasses covered with soil on a daily basis? ..... <sub>1</sub> Yes <sub>3</sub> No
3. Contact name of company or individual responsible for disposal: \_\_\_\_\_  
 If rendering is used, include location of carcass bin on the farm map.
4. What is the pickup schedule? \_\_\_\_\_
5. Does the carcass bin have a cover? ..... <sub>1</sub> Yes <sub>3</sub> No  
 Is it routinely kept closed? ..... <sub>1</sub> Yes <sub>3</sub> No

**I. FARM VISITORS**

1. How many visitors do you have on a daily basis? ..... #
2. Is there a visitor log to sign in? ..... <sub>1</sub> Yes <sub>3</sub> No  
 Is it current? ..... <sub>1</sub> Yes <sub>3</sub> No
3. Do you provide any outer clothing to visitors entering the farm? ..... <sub>1</sub> Yes <sub>3</sub> No  
 If Yes, identify items of clothing provided: \_\_\_\_\_
4. Mark the following services that were on the farm when this flock was on the farm.  
 List date of service and name of person (or contract company) and if they had contact with the birds.

Service	Dates	Name	Contact?
Service person <input type="checkbox"/> Yes <input type="checkbox"/> No	_____	_____	<input type="checkbox"/> <sub>1</sub> Yes <input type="checkbox"/> <sub>3</sub> No
Vaccination crew <input type="checkbox"/> Yes <input type="checkbox"/> No	_____	_____	<input type="checkbox"/> <sub>1</sub> Yes <input type="checkbox"/> <sub>3</sub> No
Moving crew (moving from brood to grow, or pullet house to layer house)			

Yes  No \_\_\_\_\_  Yes  No  
 Processing plant load out  
 Yes  No \_\_\_\_\_  Yes  No  
 Load-out crew (positive flock)  Yes  No  Yes  No  
 If load-out took more than one night, was returning crew the same crew? .....  Yes  No  
 Truck #/#'s \_\_\_\_\_  
 Trailer #/#'s \_\_\_\_\_  
 What plant did flock go to? \_\_\_\_\_  
 Load-out crew (flock previous to positive flock)  
 Yes  No \_\_\_\_\_  Yes  No  
 If load-out took more than one night, was returning crew the same crew? .....  Yes  No  
 Truck #/#'s \_\_\_\_\_  
 Trailer #/#'s \_\_\_\_\_  
 What plant did flock go to? \_\_\_\_\_  
 Poultry delivery  Yes  No \_\_\_\_\_  Yes  No  
 Rendering pickup  Yes  No \_\_\_\_\_  Yes  No  
 Litter services  Yes  No \_\_\_\_\_  Yes  No  
 Cleanout services  Yes  No \_\_\_\_\_  Yes  No  
 Equipment shared/rented/loaned/borrowed (each of the categories of visitor is likely to be accompanied by equipment of some sort or another)  
 Yes  No \_\_\_\_\_  Yes  No  
 Feed delivery  Yes  No \_\_\_\_\_  Yes  No  
 5. Who makes sure covers are closed after delivery? \_\_\_\_\_  
 6. Are feed covers kept closed? .....  Yes  No

**J. WILD BIRDS**

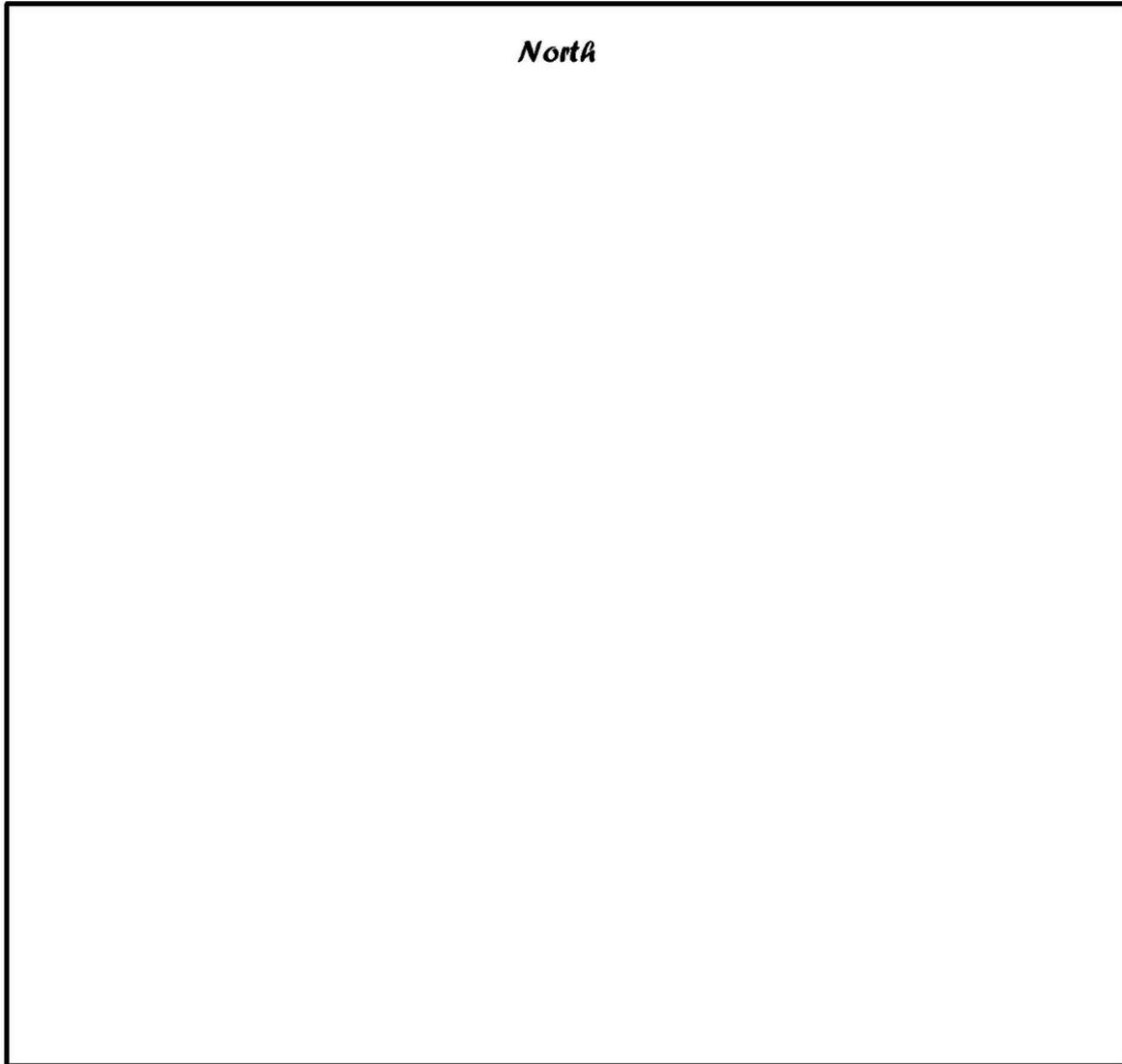
1. Do you see wild birds around your farm? ..... <sub>1</sub> Yes <sub>3</sub> No  
If Yes, what type of birds? [Check all that apply.]  
 Waterfowl  
 Gulls  
 Small perching birds (sparrows, starlings, swallows)  
 Other water birds (egrets, cormorants)  
 Other \_\_\_\_\_
2. Do you see birds all year round? ..... <sub>1</sub> Yes <sub>3</sub> No  
If Yes, what type of birds? \_\_\_\_\_
3. Is there seasonality to the presence of some types of birds? ..... <sub>1</sub> Yes <sub>3</sub> No  
If Yes, what type of birds and what seasons do you see them? \_\_\_\_\_  
\_\_\_\_\_
4. Where are wild birds seen in relation to the farm?  
<sub>1</sub> On adjacent habitats away from facilities and equipment (identify location of habitat on photos)  
<sub>2</sub> On the farm but not in the barns (identify facilities or equipment birds have contact with)  
<sub>3</sub> On the farm and sometimes in the barns (identify facilities or equipment birds have contact with)

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K. NARRATIVE/COMMENTS

A large, empty rectangular box with a black border, intended for entering narrative or comments. The box is currently blank.

**FARM DIAGRAM** -Attach a download from satellite imagery if possible. In addition, draw a simple schematic map of the farm site centering with the poultry houses/pens. Identify where the HPAI positive flocks were housed. Also include: fan banks on houses, residence, driveways, public roads, bodies of water, feed tanks, gas tanks, out buildings, waster dumpsters, electric meters, dead bird disposal, parking areas, other poultry sites. Digital photographs, if allowed, are excellent supporting documentation.





# Producer Information Sheet

## Emergency Response Procedures—Appraisal and Indemnity

As part of its mission to protect American agriculture, the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) responds to serious diseases if they are found in the U.S. livestock and poultry populations. Highly contagious diseases such as avian influenza, classical swine fever, Newcastle disease, and foot-and-mouth disease would cause significant losses and damage if they became established in our country's animal populations. APHIS responds quickly and decisively to any U.S. detections of these diseases.

### Indemnity Basics

Federal law gives APHIS the authority to depopulate affected herds and flocks to contain or stop the spread of the disease. To encourage early reporting of disease issues, farmers are paid for euthanized animals, which helps stop the outbreak and support impacted farmers at the same time. When depopulation occurs, APHIS will give the producer an indemnity payment equal to the fair market value of the animal. APHIS also offers indemnity for materials, such as tools or pallets, that must be destroyed because they cannot be disinfected after contact with infected animals or animal matter.

Indemnity does not cover all production losses for the time a farm will be out of commission after a disease detection. While APHIS recognizes that this can pose a hardship for affected producers and their employees, our ability to provide indemnity is set by specific conditions in the Animal Health Protection Act of 2002.

### Appraisals

Once a herd or flock is confirmed by a designated laboratory to have tested positive for one of these significant diseases, animal health officials complete an inventory to use for appraisal purposes. The inventory lists all living animals in the herd or flock, along with their age at the time and their intended use (for meat, eggs, milk, breeding, etc.).

APHIS uses this inventory as the basis for the herd or flock appraisal. APHIS economists created a series of species-specific appraisal calculators that use publicly available prices, costs, and productivity data to develop a value per animal. The calculators are updated monthly to account for changing feed costs and values.

The formula APHIS uses to calculate total indemnity is: the value per animal type multiplied by the number of each animal type. In most cases, APHIS provides 100 percent of the indemnity amount; however, there are certain situations where APHIS could provide a lesser percentage to producers. For example, indemnity might be less

than 100 percent for large-scale producers who do not participate in the [National Poultry Improvement Plan](http://www.poultryimprovement.org) (www.poultryimprovement.org).

APHIS then compiles all of the appraisal information into a final appraisal document. We present that document to the producer as quickly as possible.

### **Producer Responsibilities**

Affected producers are asked to sign the appraisal document before depopulation occurs. Producers also must complete other needed paperwork provided with the appraisal document. Because APHIS delivers indemnity payments electronically, basic information needs to be collected from producers to route these payments.

Depending on the disease, there could be other planning and paperwork involved before APHIS can complete indemnity processing. For example, for flocks affected by highly pathogenic or H5/H7 strains of avian influenza, a flock plan must be developed and signed. The flock plan outlines the steps required to eradicate avian influenza from a flock and get the facility back into production. Animal health officials will discuss the flock plan or any further requirements with affected producers as soon as disease confirmation occurs.

After depopulation is complete and all required paperwork has been signed and approved, APHIS processes the indemnity payment.

### **For More Information**

If you have any questions about the appraisal and indemnity processes, talk with the State or Federal animal health officials responding to the disease event in your area.



# Producer Information Sheet

## Emergency Response Procedures—Depopulation and Disposal

As part of its mission to protect American agriculture, the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) responds to serious diseases if they are found in the U.S. livestock and poultry populations. Highly contagious diseases such as avian influenza, classical swine fever, Newcastle disease, and foot-and-mouth disease would cause significant losses and damage if they became established in our country's animal populations. APHIS responds quickly and decisively to any U.S. detections of these diseases.

### Depopulation

Federal law gives APHIS the authority to depopulate affected herds and flocks to contain or stop the spread of the disease. Unfortunately, this is a necessary step when facing serious and highly contagious animal disease outbreaks.

Animal health officials consider many factors when determining the most appropriate method of depopulation. These include, but are not limited to, the size and type of the animals being destroyed, their temperament, their familiarity with people, and their containment/housing facilities. The number of animals in the herd or flock and the location of the farm are also important to consider.

APHIS follows the recommendations outlined by the American Veterinary Medical Association and the World Organization for Animal Health whenever possible. The herd or flock will be depopulated as soon as practical using the best option available under the specific circumstances. During a large disease event, there might be a delay while waiting for appropriate resources and personnel to arrive onsite. Animals will continue to receive care up until depopulation occurs.

APHIS uses trained veterinarians, animal health technicians, and specialized contractors to complete depopulation activities. APHIS emphasizes keeping the responders safe while minimizing stress to the animals.

### Disposal

The carcasses will be disposed of using one of several methods:

- in-house composting
- outdoor, onsite composting
- burial
- off-site composting
- landfill
- incineration

APHIS and State officials evaluate disposal options based on the size of the herd/flock, local conditions, and applicable laws/regulations. There are different timelines for each disposal option. It is extremely important to follow all steps as outlined by disposal experts to minimize the risk of disease spread during the disposal process.

### **Producer Responsibilities**

APHIS seeks to engage producers and their employees wherever appropriate during the disease response process. APHIS recognizes this can be a difficult time for all involved and will do everything it can to help producers and their employees through the process.

Producers should talk to animal health officials about their level of involvement and how they can work together with responders. Anyone who works on the farm during these processes will need to wear appropriate personal protective equipment and follow strict biosecurity procedures, as outlined by the response team and/or the flock plan signed by the producer.

### **For More Information**

If you have any questions about the depopulation and disposal processes, talk with the State or Federal animal health officials responding to the disease event in your area.



Please note: These procedures may be revised as the situation continues to change.

GENERAL GUIDANCE

All previously highly pathogenic avian influenza (HPAI) Infected Premises must be both CLEANED and DISINFECTED. Cleaning and disinfection practices during an outbreak should focus on virus elimination in a cost effective manner.

While traditionally wet cleaning and disinfection has been performed in many incidents, dry cleaning and heating of houses may be a preferred approach during a widespread HPAI outbreak. Any method(s) selected should consider the characteristics of the premises/houses and other factors which may impact the effectiveness of the virus elimination activities.

DEFINITIONS

Cleaning: The removal of gross contamination, organic material, and debris from the premises, via mechanical means like sweeping (dry cleaning) and/or the use of water and soap or detergent (wet cleaning).

Disinfection: Methods used on surfaces to destroy or eliminate HPAI through physical (e.g., heat) or chemical (e.g., disinfectant) means. A combination of methods may be required.

Virus Elimination: Cleaning and disinfection measures conducted with the primary purpose to inactivate all avian influenza virus on the premises as cost effectively as possible.

OPTIONS

For premises that can be cleaned and disinfected (most premises):

Step 1

CLEANING OPTIONS

Dry Cleaning
Timing & method of dry cleaning must not aerosolize virus.

and/or

Wet Cleaning

Step 2

DISINFECTION OPTIONS

Wet Disinfection with EPA Approved Pesticide

and/or as needed

Drying & Heating (100-120°F for 7 days)
At least three days must be consecutive days drying and heating at specified temperature of the seven days total.

and/or as needed

Fumigation or Alternative Science-Based Methods
If APHIS is paying for service, then APHIS must approve prior to application.

NOTE: A premises may require a combination of methods, but at least one choice must be selected from Step 1 and Step 2. The cleaning and disinfection options selected and implemented must be included as part of the approved cleaning and disinfection plan and approved by State Animal Health Officials and APHIS for reimbursement.

**For premises that can't be cleaned and disinfected:**

In the unusual circumstance in which premises cannot be cleaned and disinfected, following for 120-days—or a period recommended by the Incident Command—is prescribed. The length of this period will vary depending on ambient temperature and season. Following should be reserved for premises that would need to be completely repaired or destroyed in order to be effectively cleaned and disinfected.

**FOR MORE INFORMATION**

**Please see these FAD PReP documents:** [NAHEMS Guidelines: Cleaning and Disinfection](#), [NAHEMS Guidelines: Tactical Topic on Cleaning and Disinfection \(C&D\)](#), [Cleaning & Disinfection SOP](#), and the [Cleaning and Disinfection Powerpoints](#).

**Further HPAI policy guidance:** [www.aphis.usda.gov/fadprep](http://www.aphis.usda.gov/fadprep).

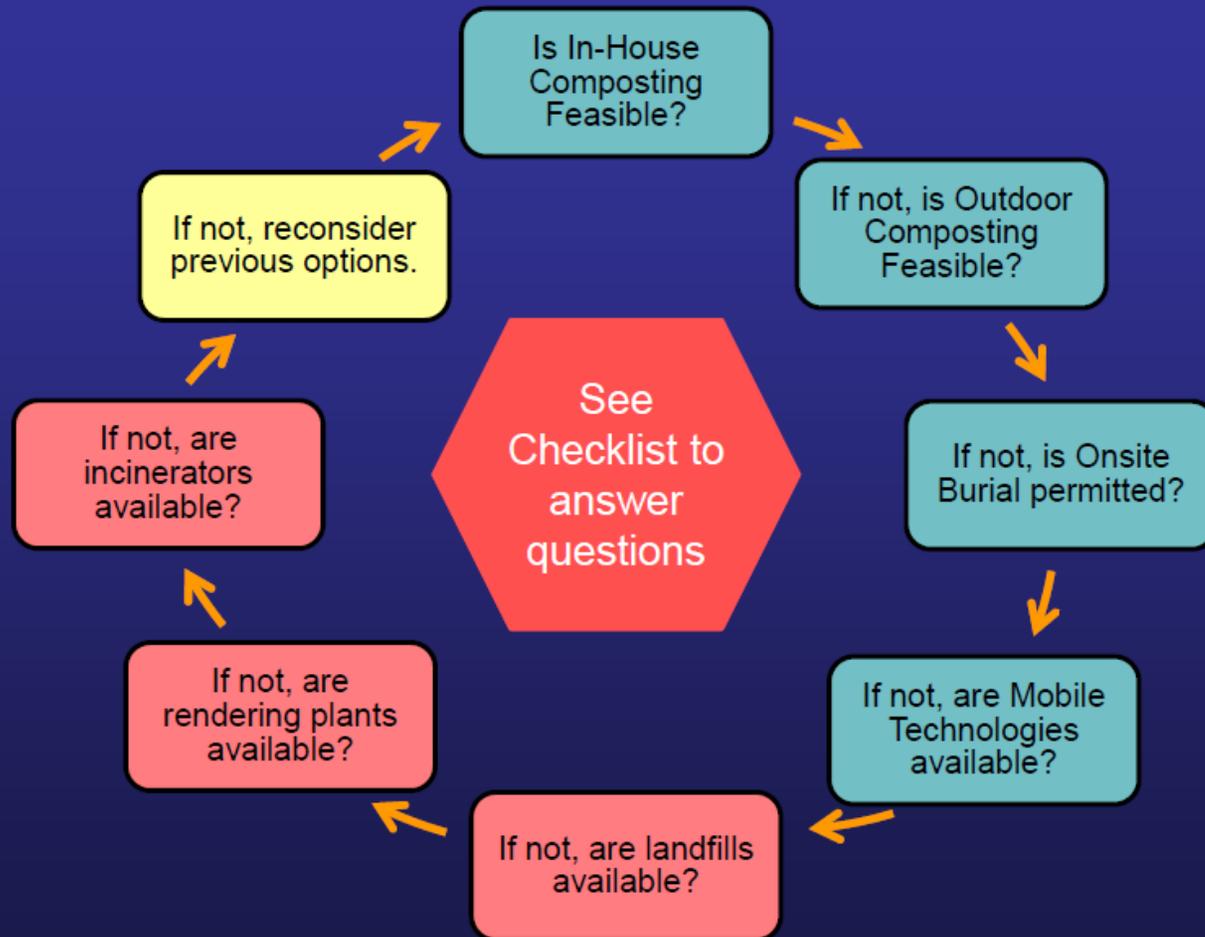
**EPA Antimicrobial Products Registered for Use Against Avian Influenza A Viruses:**  
<http://www.epa.gov/oppad001/influenza-disinfectants.html>.



**United States  
Department of  
Agriculture**

**HPAI Outbreak 2014–2015**  
*Timeline, Eligibility, and Approval for  
Restocking*  
September 21, 2015

# Avian Influenza Disposal Decision Tree



# Carcass Management Options Matrix

Weighting	Criteria	Off-Site Landfill	Rendering	Off-Site Incineration	Composting	Open Air Burning	On-Site Burial
Most Important (x3)	Public Health Risk (1)	9	9	9	9	6	3
	Biosecurity (2)	6	6	6	3	3	3
	Pathogen Inactivation (3)	3	6	9	6	9	3
	Environmentally Sustainable (4)	9	9	9	9	3	3
Important (x2)	Need to Transport Carcasses Offsite (5)	2	2	2	6	6	6
	Volume Reduction (6)	4	6	6	4	6	4
	Availability (7)	6	4	2	4	4	4
	Throughput (8)	6	6	2	4	4	4
	Speed to Implement (9)	6	4	4	4	4	4
	Public Acceptance (10)	6	4	6	4	2	4
Less Important (x1)	Cost Effectiveness (11)	3	2	1	1	1	3
	Efficiency (12)	3	3	3	2	1	2
	Operability (13)	3	3	3	2	1	3
	Regulatory limitations (14)	2	3	2	2	1	1
	Denial of use (15)	3	2	2	2	2	1
<b>Total Points</b>		<b>71</b>	<b>69</b>	<b>66</b>	<b>62</b>	<b>53</b>	<b>48</b>
<b>Average Score</b>		<b>4.7</b>	<b>4.6</b>	<b>4.4</b>	<b>4.1</b>	<b>3.5</b>	<b>3.2</b>

## Matrix Explanation

Green technologies were scored 3 points

Yellow technologies were scored 2 points

Red technologies were scored 1 point

Scores were weighted according to the importance of the criteria.

Scores for each column were totaled then averaged to obtain the ranking

### Color Key



Ideal



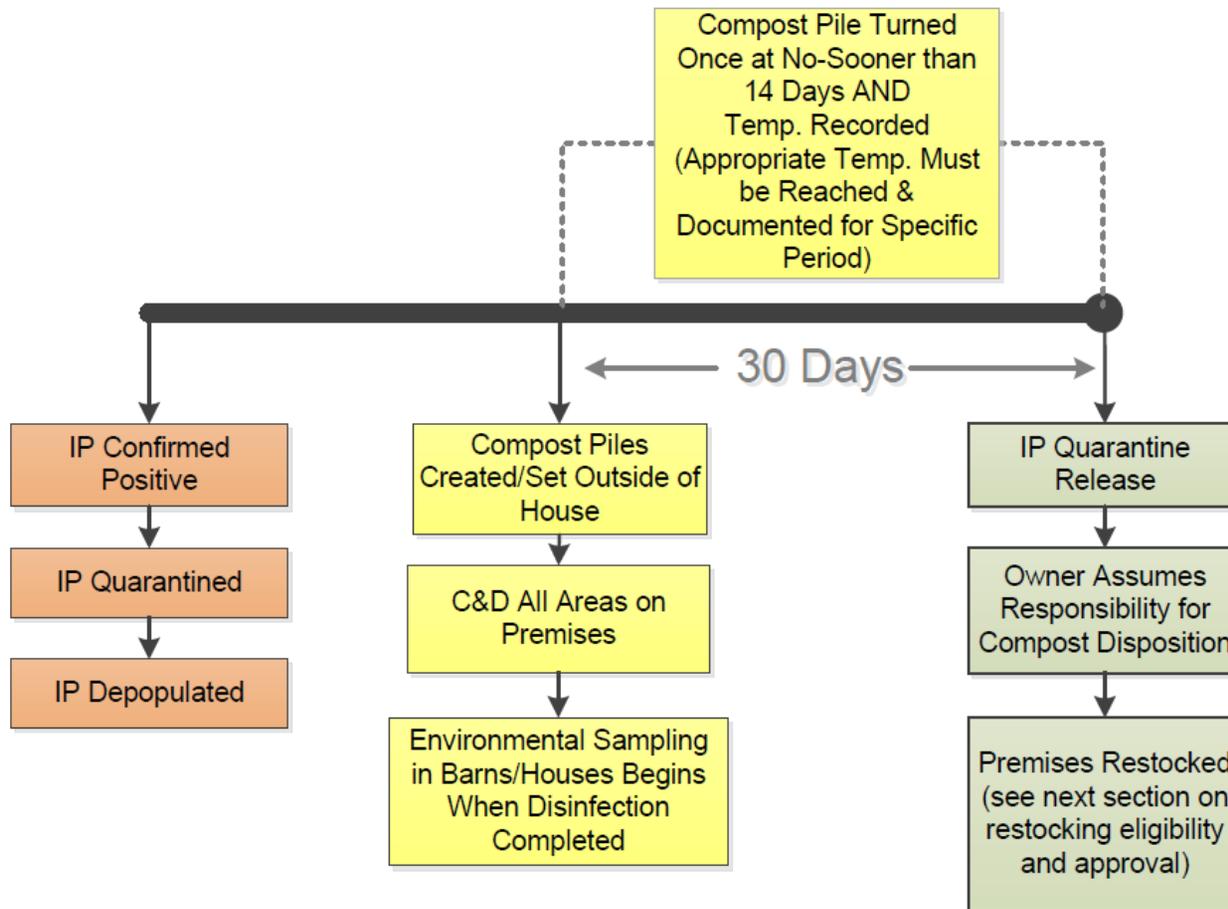
Not Ideal



Not Suitable

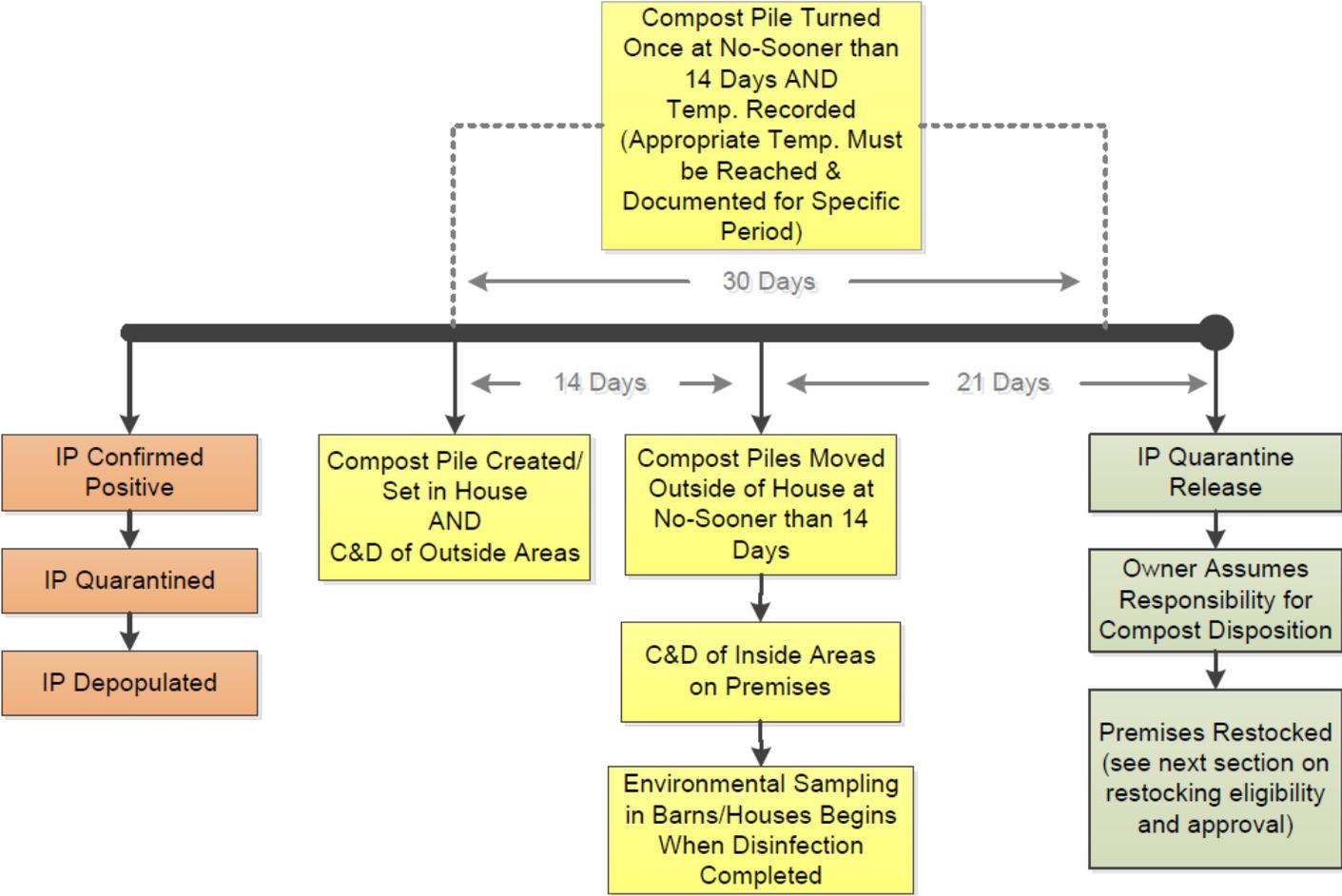


Figure 2. Timeline for Disposal & Premises Restocking:  
**OUTDOOR COMPOSTING**



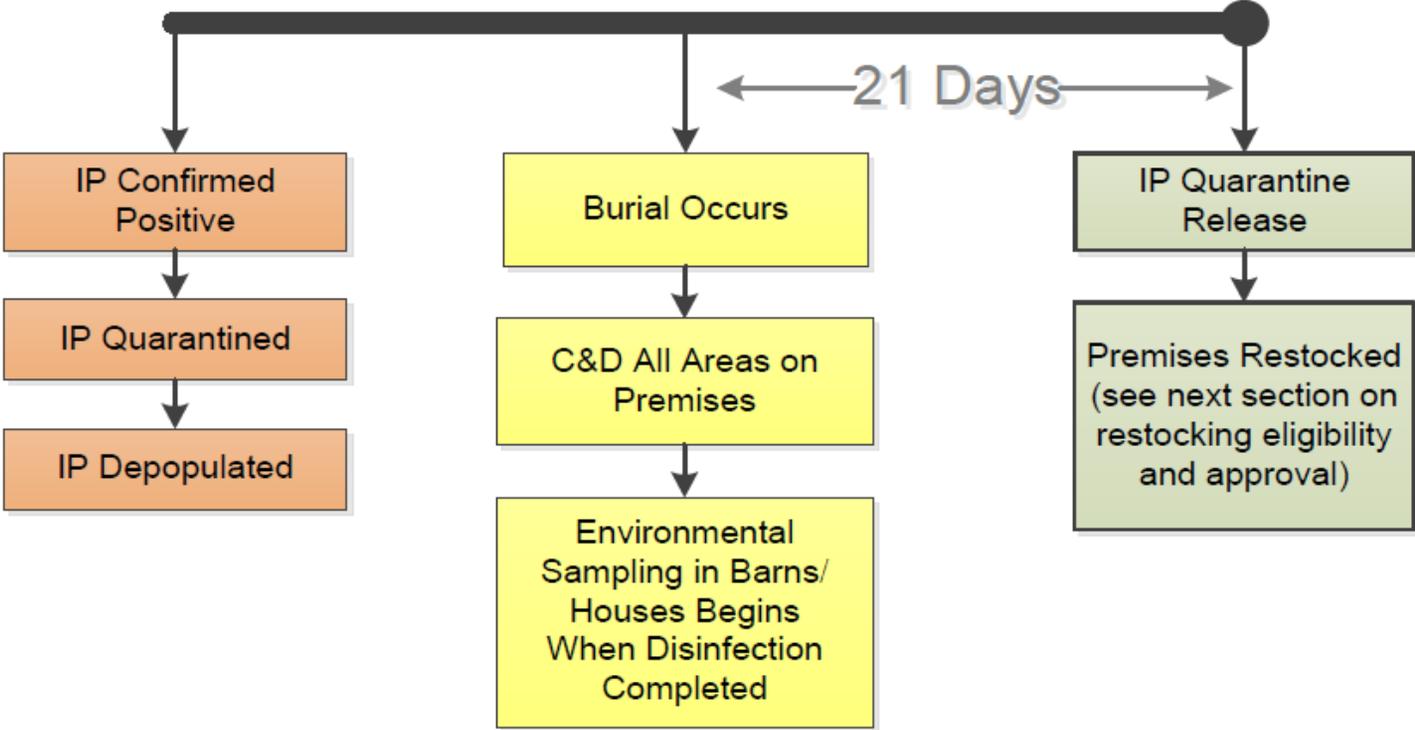
**DISPOSAL: IN-HOUSE AND OUTDOOR COMPOSTING**

Figure 3. Timeline for Disposal & Premises Restocking:  
COMBO OF IN-HOUSE/OUTDOOR COMPOSTING



**DISPOSAL: BURIAL**

Figure 4. Timeline for Disposal & Premises Restocking: BURIAL





**Please note: These procedures may be revised as the situation develops.**

## EXECUTIVE SUMMARY OF THE METHOD

Composting is a biological heating process that results in the natural degradation of organic resources (such as poultry carcasses) by microorganisms. Composting has been successfully used throughout the United States for nearly two decades to control outbreaks of low pathogenicity avian influenza (LPAI) and highly pathogenic avian influenza (HPAI). Composting can be effective with most bird types and poultry house designs.

Microbial activity within a well-constructed compost pile can generate and maintain temperatures sufficient to inactivate the avian influenza virus. The effectiveness of this virus inactivation process can be assessed by evaluating compost temperatures and the shape of the time and temperature curve, visual observation of carcass decomposition, and the homogeneity of the compost mix.

**Successful mortality composting requires the following:**

- 1. A qualified composting expert to guide windrow construction.**
- 2. Trained equipment operators.**
- 3. Sufficient carbon, water, and space.**

**If any of these components is lacking, composting is NOT recommended.**

*Prepared by members of the USDA Composting Technical Committee: Lori P. Miller, Gary A. Flory, Robert W. Peer, Eric S. Bendfeldt, Mark L. Hutchinson, Mark A. King, Bill Seekins, George W. Malone, Joshua B. Payne, Jerry Floren, Edward Malek, Mary Schwarz, and Jean Bonhotal*



Completed windrow (photo by Gary Flory)

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## KEY ELEMENTS FOR SUCCESSFUL COMPOSTING

The role of the Subject Matter Expert (SME) is to ensure that these key elements are followed in the construction of compost windrows:

1. Windrows (6 to 8 feet high and 12 to 15 feet wide) are constructed on an adequate and uniform base layer (10 to 15 inches thick) of a sufficiently porous and absorbent carbon material.
2. The base layer and windrow are not compacted with equipment.
3. Good carcass to carbon contact is ensured by creating a core with a minimum 1:1 mix, by volume, of carcasses, carbon, and other infected material (manure, egg shells, feed, etc.). **DO NOT GRIND/CRUSH/MACERATE THE CARCASSES DURING CONSTRUCTION!**
4. Windrows should be constructed to ensure adequate distribution of moisture throughout; the windrows are capped with carbon material (8 to 12 inches thick) to ensure that no carcasses are exposed and to minimize odor.
5. Windrow dimensions, including the base and cap, may be reduced for smaller carcasses.



Pay loader used for clearing the base (photo by Josh Payne)

## LABOR, EQUIPMENT, AND SUPPLIES

- Skilled equipment operators and general laborers;
- skid loader(s), pay loaders, dump trucks, rakes, and scoops;
- sawdust, litter, wood shavings, corn stover, active compost, seed and nut hulls, woodchips, or other carbon material; and
- compost thermometers (36" or 48" stem length).

## PROTOCOL

### Prior to Windrow Construction

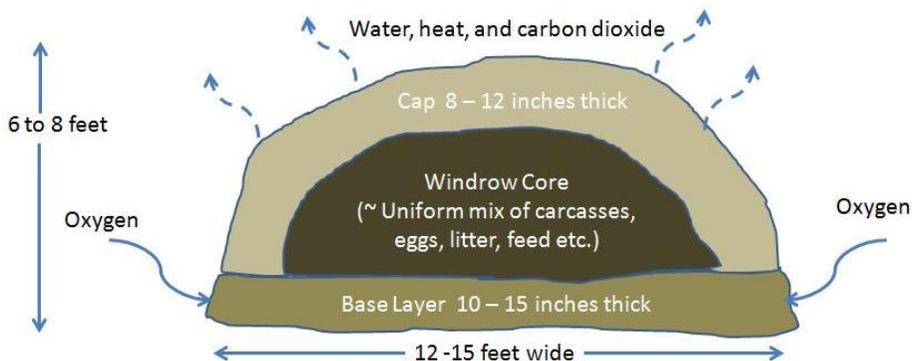
- Evaluate barn configuration to determine if space is adequate for windrow(s) construction within the poultry barns. If not, assess other on-site structures or outside compost sites.
  - To assess outside sites, see [Appendix A](#).
- Evaluate type and quantity of infected materials to be composted:
  - Carcass: type, size, number and condition
  - In-barn manure/litter: volume, moisture content, density

- Stored manure/litter: volume, moisture content, density
- Feed: quantity, location
  - Empty feed from feed bins and pans, distribute evenly into the mix.
- Eggs: quantity and condition
- Clean bedding
- Paper products
- Non-infected manure compost.
- Calculate the amount of carbon needed for composting:
  - See [Appendix B](#) for calculations.
  - The characteristics of various materials are listed in [Appendix I](#).
- Evaluate premise for supplemental water:
  - Source
  - Application method.
- Evaluate on-farm equipment and determine supplemental equipment needs.
- Ensure all overhead lines and poultry house equipment are removed or out of the way. Secure any loose cords, cables or hoses so that they will not become entangled by equipment.
- Minimize ventilation to reduce the risk of disease transmission while balancing air quality for worker safety.
- Transfer all infected on-site materials into compost windrows.

### Typical Windrow Construction Protocol

Three critical elements of windrow construction are: 1) a porous base layer, 2) a uniformly mixed windrow core, and 3) an adequate cap (see Figure 1). These steps may be done concurrently or as separate steps.

*Figure 1. Cross Section of Compost Windrow*



### **Windrow Base Construction**

- Before in-house composting, clear carcasses and litter from the windrow location(s) of the poultry house to create a 12–15 foot wide work area for construction of the windrow base(s). Distribute the material from on either side of the pathway. (See [Appendix C](#) for in-house variations.)
- Before outside composting, an adequate site must be identified (see [Appendix A](#)). Site modifications and approval from State and local agencies may be required.
- Using the largest loader possible, begin building the windrow base.
- The windrow base should be 12–15 feet wide with a depth of 10 to 15 inches.



Clearing the base (photo by Gary Flory)

- Carbon material for the base should be porous and bulky enough to allow adequate air flow into and through the windrow. Ideal materials for the base include bark mulch or coarse wood chips. Other acceptable materials include: straw, wood shavings, active compost, small grain hulls, and corn stover. Also, coarse woody material in excess of 2 inches in size should be avoided to ensure that the resulting compost can be land applied as a soil amendment.
- If these materials are not available, poultry litter may be used for the windrow base if it is sufficiently dry, porous, and bulky.
- To maintain the base's porosity and to avoid compaction, do not drive equipment on the base.

### **Construction of the Core**

- The windrow core should consist of a uniform mix of carcasses and litter. The easiest way to get a uniform mix throughout the windrow is to scoop litter and birds together in each bucket load and add it to the windrow in a manner that thoroughly mixes the contents of the bucket. If additional carbon material is needed, the material should support heat generation (i.e., composting). Suitable materials include fresh wood shavings, active compost, poultry litter, straw, corn stover, and small grain hulls. In many instances this material may need to be blended with the existing litter and carcasses to be suitable.



Constructing the core (photo by Bob Peer)

- Any remaining feed should be blended and mixed with the carcasses and litter before windrow construction. Be sure to move infected material as little as possible.
  - The mix of carcasses and litter should be added from both sides of the windrow. This allows the operators to reach the center of the windrow and avoid compacting the base with the tires or tracks of the loader.
  - The windrow core should be constructed such that 1 foot of base material is exposed on both sides of the windrow.
  - Add water as needed.
  - The core should be dome-shaped and of sufficient height to include the litter and carcass mix from the area adjacent to the windrow. At this stage, the windrow height should not exceed 6 feet.
- Continue building the core until all of the litter and carcasses have been placed on the base.
- An alternate method of using pre-compost windrows is described in [Appendix C](#).

### **Capping the Windrow**

- Prior to capping the windrow, remove any carcasses that are near the edge of the windrow base and include them in the core of the windrow.
- Cap the windrow with 8 to 12 inches of a suitable carbon material. Carbon material for the cap should prevent flies from contacting carcasses, serve as an insulating blanket, and allow air to flow out of the piles. This material may be finer in texture than the base. Suitable material includes small grain hulls, sawdust, new bedding, and wood chips. Straw, corn fodder, or similar material may also be suitable; however, experience has shown that these products can blow off the windrow and may need to be thicker to serve this purpose than other materials.
- Ensure that the entire core is uniformly covered with cap material with no carcasses exposed.
- Avoid compacting the windrow. Do not operate the loader's tires or tracks onto the sides of the windrow while capping.
- The completed windrow should be approximately 6 to 8 feet high.



Smoothing the cap on an outside windrow  
(photo by Gary Flory)

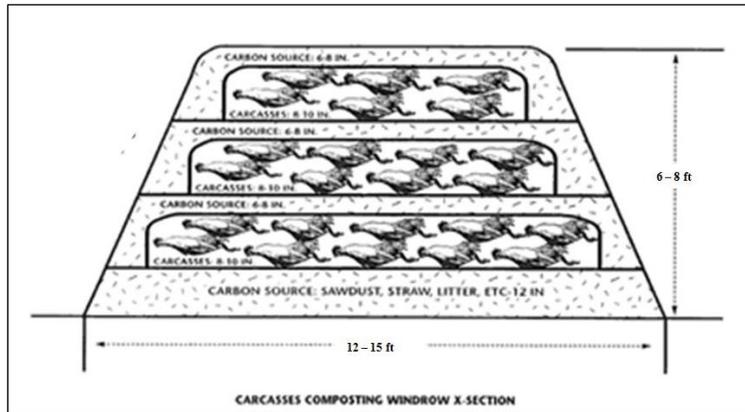
## Layering Method

As an alternative to the core construction method described previously, the windrow core can be constructed by layering carcasses and carbon material. Base and cap construction is the same as in the standard protocol. Following base construction, proceed in the following manner:



Layering method (photo by Mary Schwarz)

- Add a 12–15 inch layer of litter and birds, then cover with a 12–15 inch layer of wood chips or other carbon source.
- Add another layer of litter and birds until the windrow is two or three layers high and as long as needed.
- Cover the windrow with an 8–12 inch layer of wood chips or other carbon sources. The finished pile should be 6 to 8 feet high.



The SME may choose to use either or both of these construction techniques depending on site conditions.

## Approval of Windrow Design

SMEs should evaluate the windrows to ensure that they have been constructed consistently with this protocol. Approval will be documented on the Compost Approval Checklist in [Appendix G](#).

## Temperature Monitoring

Once the windrow construction has been approved by the SME, daily temperature monitoring can begin following the standard temperature monitoring SOP found in [Appendix D](#). Temperature data should be collected on the temperature log included in [Appendix E](#) or in a comparable electronic document. The health and safety of the individual conducting the temperature monitoring should be protected by following the ammonia safety procedures outlined in [Appendix F](#).

## Turning the Windrows

After the State Animal Health Official (SAHO), APHIS Official, Incident Management Team (IMT) Official, or SME has provided their approval based on windrow design and an evaluation of the temperature data collected during the initial 14-day compost cycle, the windrow is eligible for turning. Approval will be documented on the Compost Approval Checklist in [Appendix G](#). No turning is allowed before the end of the 14-day period. Turning needs to provide for the homogenization of the core, base, and cap materials. Windrows need to maintain adequate porosity and structure after turning. If soft tissue is observed on the windrow surface, a 2 to 4 inch carbonaceous cap should be applied. See [Appendix H](#) for turning equipment and methods.

## Release of the Compost

After the SAHO, APHIS Official, IMT Official, or SME has provided their approval based on windrow design and an evaluation of the temperature data collected during the second 14-day compost cycle, the compost may be moved without restriction on the premises or may leave the premises with appropriate permits. Approval will be documented on the Compost Approval Checklist in [Appendix G](#).

## Composting Egg-Layer Manure and Waste Feed

During an HPAI outbreak, there may be a need to compost layer manure and waste feed. This may be because the producer has chosen to dispose of their poultry mortalities by a method other than composting—such as on site burial, incineration, or landfilling—or because there was more manure on the farm than could be practically composted with the poultry carcasses. In general, the compost process used for these materials is identical to the windrow construction process described above. However, because of the density of the manure and feed, it is imperative that the material be thoroughly blended with carbonaceous materials to help ensure proper porosity within the windrows. Generally, manure can be composted with a 1:1 mix of manure and carbonaceous material. Often, layer manure has a high moisture content or is extremely dry depending on manure management, and the moisture content of the windrows may need to be adjusted.

## TROUBLESHOOTING

The table below describes some of the most common composting problems and possible solutions.

<b>Problem</b>	<b>Issue</b>	<b>Solution</b>
Excessive flies or odor	Exposed carcasses	Add additional cap material
Leachate from windrow	Mixture too wet	Add additional carbon material, mix and cap

*Mortality Composting Protocol for Avian Influenza Infected Flocks*

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Temperature does not reach 131 °F	Mixture too dry (< 40% moisture)	Add water to pile, mix if necessary
Temperature does not reach 131 °F	Mixture too wet (> 60 % moisture)	Add additional carbon material, mix if necessary
Temperature drops early	Not enough oxygen	Aerate or mix pile

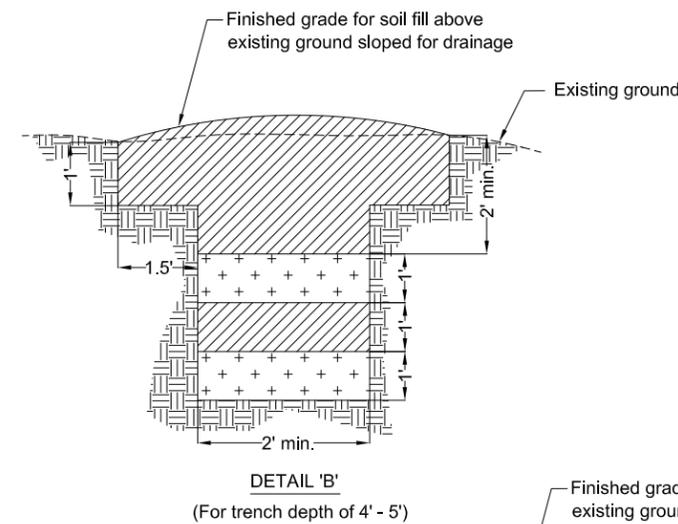
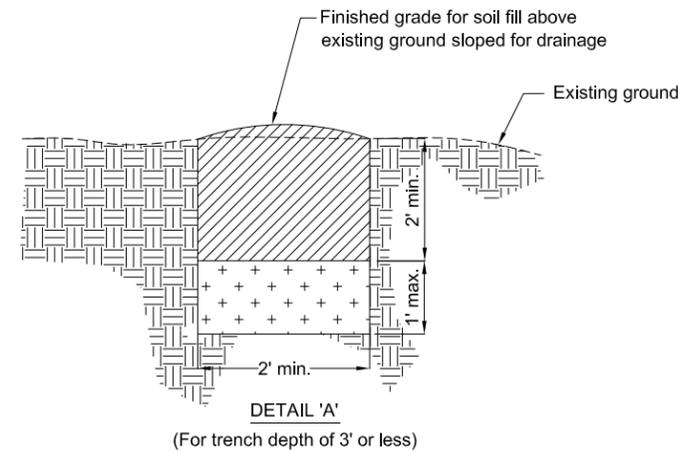
Additional Construction Drawings:  
Low Pathogenic Disease and Other  
Catastrophic Mortality Burial Trench  
Drawing

Notes:

1. Unless approved/accepted by ADAI/ADEM, this drawing does not apply to mortality caused by Highly Pathogenic Avian Diseases.
2. Select a site/location that can be easily maintained and is free from vehicular traffic.
3. Keep detailed records of mortality information and maps of burial sites.
4. Per ADAI/ADEM, burial site shall be subject to future use limitations and site restrictions including, but not limited to, building/development and certain agricultural uses.
5. Prior to excavation, contact ADAI State Veterinarian's Office (334-240-7255 x4) to obtain an on-site burial permit.
6. The maximum size of the burial excavation should be 0.1 acre (about 4,400 sq. ft.) Multiple excavations may be needed.
7. See Alabama Conservation Practice Standard 316 for general criteria for Animal Mortality Facility.
8. Do not bury or leave carcasses in highly permeable soils (permeability greater than 2 in/hr).
9. Poultry carcasses must be buried outside the 100-year floodplain.
10. Do not bury carcasses closer than 2 ft. to bedrock or the seasonal high water table (defined as the zone of saturation at the highest average depth during the wettest season).
11. Rainfall and surface runoff must be diverted around the burial location by the use of contour sloping, berms or diversions.
12. If constructing more than one burial trench/pit, maintain a minimum distance of 3 feet of undisturbed or compacted soil between the trenches/pits.
13. The burial site shall be vegetated immediately after completion.
14. Excess soil from trench excavations shall be used to construct berms or diversions, if necessary, to divert surface runoff or otherwise spread to blend with the surrounding topography. Retain adequate material to re-grade the site as settling occurs.
15. For deep soils (where bedrock or groundwater is not a concern), carcasses and soil can be placed in alternating layers to a total depth of 8 feet with carcass layer = 12" thick max. and soil layer = 12" thick min.
16. For pits that are 4 to 5 feet deep, a step or bench 18" wide and 1' deep will be dug around the perimeter of the main pit so the remaining vertical wall will not exceed 4'. For pits greater than 5' deep, the earthen wall shall be sloped at 1.5 or flatter horizontal to 1 vertical.
17. Final layer of carcasses shall be covered with a minimum of 2 ft. of non-compacted soil to the elevation of the existing ground surface. Soil fill shall then be placed to obtain finished grade above existing ground surface for drainage.
18. Details this sheet are not to scale.

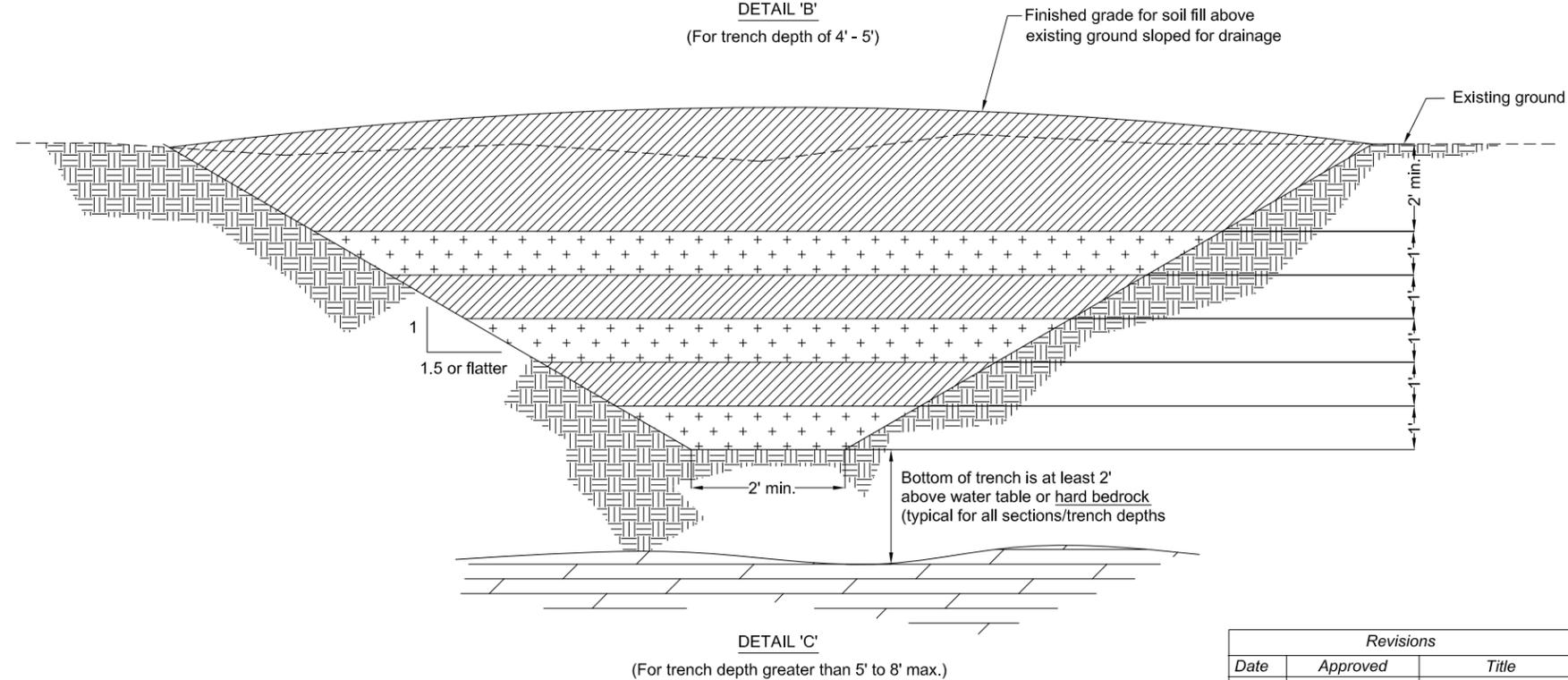
Before Proceeding with Construction,  
Call the Alabama Line Location Center  
**ALABAMA ONE-CALL**  
Dial 811 or 1-800-292-8525

Date	9/15
Designed	Alabama NRCS
Drawn	Alabama NRCS
Checked	J. Bruce
Approved	T. Williams

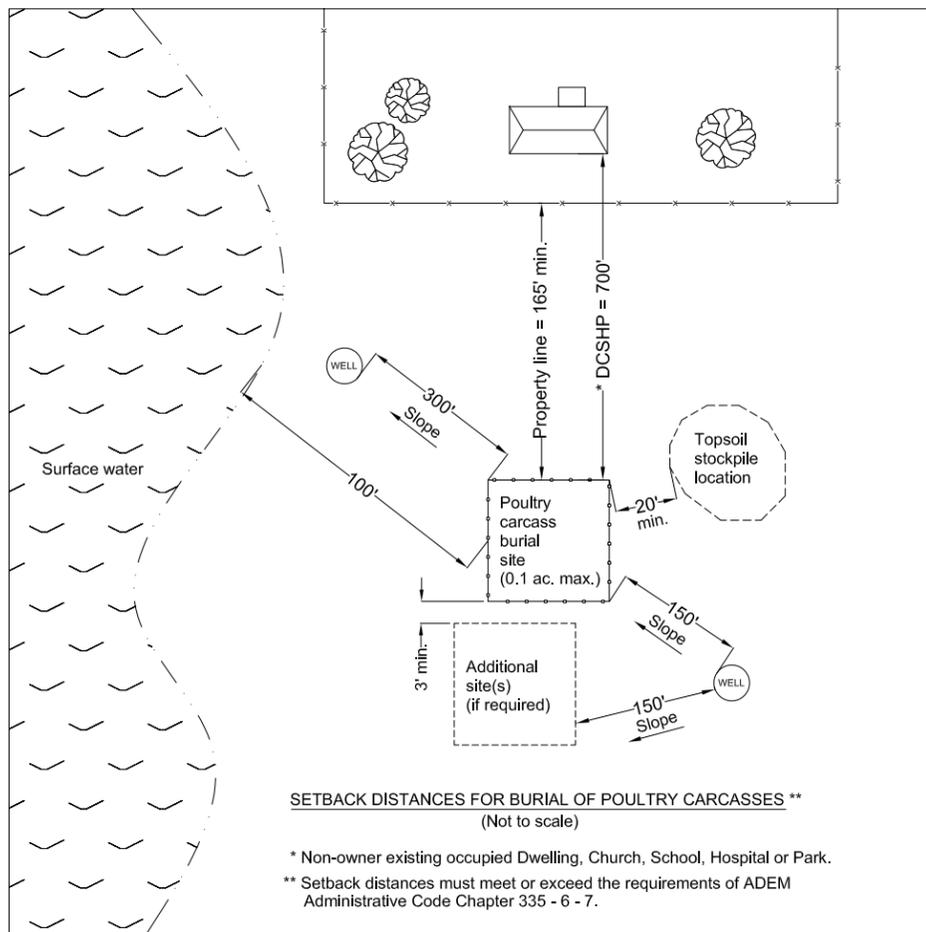


Symbology

	Trench earthfill (non-compacted)
	Existing in-place soil
	Mortality (carcasses)



TYPICAL CROSS-SECTIONS FOR VARIOUS TRENCH DEPTHS



LOW PATHOGENIC DISEASE AND OTHER  
CATASTROPHIC MORTALITY BURIAL TRENCH  
Landowner  
County, AL

United States  
Department of  
Agriculture  
**USDA**  
Natural Resources  
Conservation Service

File No.

Drawing No.  
AL-ENG-316-01

Sheet 1 of 1

Revisions		
Date	Approved	Title