



Producer Information Sheet

USDA Avian Influenza Response: Mass Depopulation and Carcass Disposal

As part of its safeguarding mission, the U.S. Department of Agriculture (USDA) protects the health of the Nation's livestock and poultry. USDA responds to major animal disease events, helping to keep dangerous diseases from spreading and threatening even more animals. USDA also works to reduce the economic impact of disease events.

Since December 2014, USDA has confirmed cases of highly pathogenic avian influenza (HPAI) H5 in the Pacific, Central, and Mississippi flyways (or migratory bird paths). The disease has been found in wild birds, as well as in a few backyard and commercial poultry flocks. The Centers for Disease Control and Prevention (CDC) considers the risk to people from these HPAI H5 infections to be low. No human cases of these HPAI H5 viruses have been detected in the United States, Canada, or internationally.

In responding to the detections, USDA must depopulate affected flocks to prevent the spread of this highly contagious disease to additional flocks and must safely dispose of all depopulated birds. USDA and State officials evaluate disposal options based on the size of the flock, local conditions, and applicable laws/regulations.

Mass Depopulation Method

- HPAI eradication activities typically involve quarantine and movement controls, a humane depopulation component, disposal, and cleaning and disinfection activities.
- When depopulation is deemed necessary, Federal authorities, in conjunction with State and Tribal agricultural officials and industry, will euthanize infected birds and affected flocks.
- USDA's Animal and Plant Health Inspection Service (APHIS) employs depopulation technologies that are humane, limit human exposure to the AI virus, and better accommodate large-scale eradication efforts.
- The use of water-based foam has the potential to reduce the number of workers involved in depopulation efforts, decreases their exposure to zoonotic HPAI viruses, is relatively easy to deploy under field conditions, and will mitigate the physical threat to responders who depopulate animals in a structurally unsound building.

Biosecurity During Carcass Disposal

If USDA determines that moving the carcasses to a landfill for disposal is the best available option, animal health officials will ensure this move is safe for both landfill operators and the general public, and that all necessary biosecurity steps are followed.

General Carcass Disposal

Q. What are the carcass disposal options?

A. There are a variety of safe methods for carcass disposal. These methods include composting, onsite burial, incineration, rendering, and landfilling.

Q. How do animal health officials decide which disposal method to use?

A. USDA and its State partners evaluate disposal methods based on a variety of factors, including the size of the flock, space requirements, associated costs, local conditions, and applicable laws/regulations. There are benefits and limitations to using each method:

- **Composting.** This method contains the virus to the farm and produces a soil amendment/fertilizer product. However, composting requires wide-open spaces and may not be feasible for all farming operations, such as egg layer facilities or other facilities where space is limited.
- **Burial.** On-farm carcass burial must be approved by the State environmental regulatory agency and may not be permitted if the water table is close to the ground surface.
- **Incineration.** Incineration is another method that can be safely used to dispose of carcasses. The limitation of this method is that the fuel requirements are substantial and can be costly.
- **Rendering.** This involves processing carcasses until they are reduced to water, fat or tallow, and meat or bone meal. It is very effective but requires additional safety precautions to ensure that the virus does not become aerosolized during the rendering process and transported throughout the plant. It also necessitates disruption of the plant's normal operations.
- **Landfilling.** Landfilling allows safe and efficient disposal of large quantities of carcasses. However, individual landfill managers may put restrictions on the type or quantity of materials they accept.

When necessary, USDA takes an integrated approach and uses a combination of some or all of these methods.

Landfilling—Health and Safety Concerns

Q. Is landfilling an environmentally safe option for HPAI carcass disposal?

A. Yes. Landfills are highly regulated by the U.S. Environmental Protection Agency (EPA) and—in many cases—individual States to ensure that disposed materials do not present a risk to human health and the environment. Under EPA and State regulations, landfills are located, designed, operated, and monitored to ensure protection of the environment from contaminants that might be present.

Q. What measures are in place at the landfill to protect the environment?

A. There are numerous, overlapping safety controls in place to protect the environment. For example, per EPA and State requirements, municipal solid waste landfills must include an impermeable liner overlaying 2 feet of clay soil along the bottom and sides of the landfill. This protects groundwater and soil from water that trickles through the landfill and absorbs some of its materials, referred to as leachate. In addition, a collection and removal system sits on top of the liner system and removes leachate from the landfill for treatment and disposal.

Q. Will the carcasses in the landfill pose a threat to human health?

A. No. The CDC considers the risk to people from these HPAI H5 infections to be low. No human cases of these HPAI H5 viruses have been detected in the United States, Canada, or internationally. In addition, the virus does not survive more than 6 days in carcasses held at room temperature.

Carcass Transport

Q. How will the carcasses be safely moved to the landfill?

A. Carcasses will be moved on trucks to landfills in a controlled manner designed to mitigate the risk of spreading HPAI.

Q. Will moving the carcasses spread the virus to new locations or farms?

A. No. USDA has conducted a thorough assessment of the risks associated with transporting such carcasses; the risk assessment found that, when transporting the carcasses is necessary, the movement can be done safely and will not spread the disease if the protocols described are followed. In addition, we employ several layers of redundant safety measures and carefully monitor all cleanup and disposal activities to ensure that they are done in compliance with USDA protocols.

Q. Who is ultimately responsible for ensuring this transport is done safely?

A. USDA and its State partners are responsible for ensuring that carcasses are transported safely. Each truck carrying infected carcasses is issued a permit which allows it to move outside of the quarantine zone. USDA also establishes the requirements that must be met to allow such movement.

Q. Has this been done successfully in previous disease outbreaks?

A. Yes. USDA has successfully used landfilling in several major disease situations over the years. In 2002, USDA used landfills to dispose of turkeys infected with low pathogenic avian influenza in Virginia and routinely uses landfilling in Wisconsin to dispose of cervid carcasses infected with chronic wasting disease.

Q. Is there anything the public or producers in the area need to do?

A. All bird owners, whether commercial producers or backyard enthusiasts, need to continue:

- practicing good biosecurity,
- preventing contact between their birds and wild birds, and
- reporting sick birds or unusual bird deaths to State/Federal officials, either through your State veterinarian or through USDA's toll-free number at 1-866-536-7593.

You can find more information online at <http://healthybirds.aphis.usda.gov>.