

DISPOSAL

By law, the Division of Agriculture (DAG) in the Rhode Island Department of Environmental Management (DEM) has the authority and the responsibility to regulate the sanitary and safe disposal of dead domestic animals, domestic animal products and domestic animal parts, tissues, excrement and other wastes to prevent the spread of transmissible diseases or dangerous transmissible diseases or the spread of contamination by hazardous substances.

In an outbreak, the DAG will consider the following options for disposal of dead birds and associated waste that were infected with or exposed to Avian Influenza (AI), and the DAG will identify the option(s) most appropriate method for that case. Biosecurity measures will be required in all cases.

Option A: In-House Composting

Composted material shall be kept in the house for a minimum of 30 days and will be composted according to the following established guidelines and to the protocol [In-House Composting of AI Carcasses](#) (6-9-AI-P38 in the DEM ERP):

1. Form a windrow by placing 12 inches of organic material on the floor of the poultry house. This base may be composed of litter, straw, shavings, or other organic material.
2. Pile bird carcasses on top of the windrow to form a layer eight to ten inches deep, and saturate the feathers by spraying the carcasses with water. With larger birds, create only a single layer.
3. Place another six to ten inches of organic material on top of the carcasses and continue layering carcasses (sprayed with water) and organic material to a maximum height of 6 feet.
4. Heat the poultry house to 70° to 80° F for three days.
5. Monitor the temperature of the windrow using a long-stem composting thermometer and record the temperature from four sections of the windrow daily. The tip of the thermometer must be in contact with a poultry carcass inside the composting windrow. Windrow temperatures should reach 135° to 145° F within one week.
6. After the windrow temperatures begin to decline and reach 115° to 125° F, the windrow should be turned, (This decline in temperature usually occurs after 10 to 14 days). After the windrow is turned it should be left in place for an additional 3 to 4 weeks.
7. A minimum of twenty (20) days after composting has begun, personnel designated by DAG or USDA may obtain environmental samples to test for avian influenza. Refer to protocol [Handling Litter, Cleaning and Disinfection for Revocation of Quarantine](#) (6-9-AI-P31 in the DEM ERP).
8. Environmental samples for virus isolation testing will be taken randomly from the compost piles – 88 swabs (8 tubes) will be collected. Refer to protocols [Sampling Small Flock Poultry Houses for AI](#) (6-9-AI-P15 in the DEM ERP) and [Sampling Commercial Poultry Houses for AI](#) (6-9-AI-P17 in the DEM ERP).
9. Composted material must remain in the poultry house for at least 30 days, even if samples collected at day 20 test negative for AI.

10. If composted material samples test positive for AI, the pile should be turned and additional samples must be tested at least 20 days after the positive samples were collected.
11. If the second set of samples tests negative for AI, composted material must remain in the poultry house for at least 10 days after the negative samples were collected.
12. Samples will be tested at a DAG-designated laboratory, and any positive samples will be subtyped.
13. All personnel will be educated on proper biosecurity and handling of carcasses and materials and will follow guidelines throughout the disposal procedures.
14. All personnel and equipment must be decontaminated before leaving the premises.

Option B: Composting Outdoors

Poultry carcasses and materials may be composted on site outdoors according to the following guidelines:

1. Carcasses and materials are removed from the house as weather permits. In windy conditions, precautions will be taken to ensure that feathers and dust are contained.
2. All outdoor compost piles must be covered by a barrier such as a tarp to deny access by wild animals and to prevent wind from reaching the composting materials.
3. Personnel designate by DAG or USDA APHIS will inspect the compost pile as needed to ensure that the barrier is intact and composting is being conducted properly.
4. Form a windrow by placing 12 inches of organic material on the ground. This base may be composed of litter, straw, shavings, or other organic material.
5. Pile bird carcasses on top of this base to form a layer eight to ten inches deep, and saturate the feathers by spraying the carcasses with water. With larger birds, create only a single layer.
6. Place another 6 to 10 inches of organic material on top of the carcasses and continue layering carcasses (sprayed with water) and organic material to a maximum height of 6 feet.
7. Monitor the temperature of the windrow using a long-stem composting thermometer and record the temperature from four sections of the windrow daily. The tip of the thermometer must be in contact with a poultry carcass inside the composting windrow. Windrow temperatures should reach 135° to 145° F within one week.
8. After the windrow temperatures begin to decline and reach 115° to 125° F, the windrow should be turned. (This decline in temperature usually occurs after 10 to 14 days). After the windrow is turned it should be left in place for an additional 3 to 4 weeks.
9. A minimum of twenty (20) days after composting has begun, personnel designated by DAG or USDA may obtain environmental samples to test for avian influenza. Refer to protocol [Handling Litter, Cleaning and Disinfection for Revocation of Quarantine](#) (6-9-AI-P31 in the DEM ERP).

10. Environmental samples for virus isolation testing will be taken randomly from the compost piles – 88 swabs (8 tubes) will be collected.
11. Composted material must remain at the compost site for at least 30 days, even if samples collected at day 20 test negative for AI.
12. If composted material samples test positive for AI, the pile should be turned, and additional samples must be tested at least 20 days after the positive samples were collected.
13. If the second set of samples tests negative for AI, composted material must remain at the compost site for at least 10 days after the negative samples were collected.
14. Samples will be tested at a DAG-designated laboratory, and any positive samples will be subtyped.
15. All personnel will be educated on proper biosecurity and handling of carcasses and materials and will follow guidelines throughout the disposal procedures.
16. All personnel and equipment must be decontaminated before leaving the premises.

**Option C:
On-site Burial**

With DEM permission and oversight, on a case-by-case basis, burial of dead domestic animals, including poultry, parts of dead domestic animals, and animal products shall be in accordance with the following guidelines.

1. Burial of dead animals shall not result in contamination of ground water.
2. Burial of dead animals shall not permit access of vermin, scavengers or other potential vectors of disease. Burial shall include a cover of sufficient depth and character to prevent exposure of the dead animals by burrowing or digging by animals, subsidence or eruption as result of decomposition.
3. Burial shall be in accordance with Local and State ordinances and regulations.
4. The DEM will assess each premises individually to determine if burial on site is an acceptable method of disposal.
5. All personnel will be educated on proper biosecurity and handling of carcasses and materials and will follow guidelines throughout the disposal procedures.
6. All personnel and equipment must be decontaminated before leaving the premises.

**Option D:
Disposal at an Off-site Landfill**

With DEM approval, to be determined on a case-by-case basis, AI-infected or -exposed carcasses and materials may be buried in municipal solid waste landfills or industrial solid waste landfills. The preferred RI landfill for this purpose is the Central Landfill in Johnston.

In all cases, the risk of spreading disease by transporting the carcasses and materials must be considered and minimized. Disposal in a landfill must follow guidelines of USDA, DAG and, as needed, contracted disposal and/or trucking companies. The DEM maintains a contract with a biohazardous waste cleanup and disposal company for assistance with disposal of carcasses and other materials.

See the protocol [Transport of AI-Positive Flocks or AI-Infected Materials for Off-Site Disposal](#) (6-9-AI-P36 in the DEM ERP) and [DEM-RIRRC Model MOU Concerning Landfill Disposal of LPAI Waste](#) (6-9-AI-MOU02 in the DEM ERP).

For landfill disposal, the following guidelines will normally be followed:

1. In anticipation of transport, the handling of exposed or infected carcasses and materials will be kept to a minimum. For example, in windy conditions, precautions will be taken to ensure that feathers and dust are contained. Carcasses and related materials may be placed in a lined, leakproof dumpster or may be double-bagged in leak-proof plastic bags and an appropriate container. Dumpsters and bags must be disinfected on the outer surfaces before leaving the premises.
2. All personnel – including, those handling material on-premises, transport and landfill staff – will be taught and required to follow proper biosecurity precautions, including the utilization of appropriate personal protective equipment.
3. Any equipment or personnel protective equipment used to manage the carcasses or related material must be disinfected or disposed of at the end of the day or as appropriate. No material used to manage carcasses shall leave the premises or the disposal area without disinfection.
4. In Rhode Island, DEM oversees landfill operations and key personnel in DEM will assist with landfill disposal as needed.
5. Precise locations for the deposition of AI-infected or -exposed carcasses and materials in the landfill must be documented and kept on file at the landfill. The landfill also must maintain a continuous, active bird management program to minimize the potential for wild bird exposure to poultry carcasses.
6. Transport of infected or exposed carcasses and materials must comply with relevant State and Federal regulations and guidelines. For example, carcasses and materials must be contained in closed, leak-proof vehicles that can be easily cleaned and disinfected. The vehicle must be built in such a way that leakage and aerosol dispersal during transport is minimized. See the protocol [Transport of AI-Positive Flocks or AI-Infected Materials for Off-Site Disposal](#) (6-9-AI-P36 in the DEM ERP).
7. The vehicle driver will utilize proper biosecurity precautions to avoid contaminating the interior of the vehicle cab before leaving the premises. Insofar as possible, the driver should remain in the cab while the vehicle is on the premises.
8. Before leaving the premises, vehicles moving carcasses and materials to an approved landfill must be sealed by an authorized agent of the DAG or USDA APHIS. Also before leaving the premises, vehicles must be cleaned and disinfected on the outer surfaces, including the wheels and undercarriage.
9. Transport vehicles must follow a route to the landfill that DAG has designated to avoid passage in close proximity to other poultry operations.
10. When they arrive at the landfill, all trucks that transport poultry carcasses will be directed away from the active working face to an area specified for carcass disposal.
11. An authorized agent of the DAG or USDA APHIS must break the seal on the vehicle upon arrival at the landfill and will oversee the process of disposal of the carcasses and other materials.

12. A single trench (or multiple trenches) will be excavated into existing waste for carcass disposal. Excavated solid waste will be staged adjacent to the trench for application to deposited carcasses.
13. Trucks will back up to the excavated trench and deposit their loads. Any carcasses that do not fall directly into the trench will be immediately placed into the excavation.
14. Drivers and passengers must remain in their truck from the time it enters the disposal area until disinfection of the truck is completed.
15. Deposited carcasses will be covered immediately with at least two feet of excavated solid waste.
16. Multiple trucks may off-load into the same excavated trench, provided off-loading is performed immediately upon arrival at the landfill. Carcasses must be covered progressively when multiple trucks are off-loading in the same excavation.
17. Once emptied, trucks will pull forward for disinfection. All vehicles will be pressure washed with a disinfectant approved by the DAG. The entire vehicle (excluding the interior of the vehicle cab) will be disinfected, including tires, wheel wells, undercarriages, and both the internal and external surfaces of truck/trailer beds, sidewalls, tailgates, and tarps.
18. All disinfection spray and overspray will be directed to flow back into the excavated trench. No runoff from the disinfection will occur.
19. All carcass and material disposal vehicles must be cleaned and disinfected before leaving the landfill. An authorized agent of the DAG or USDA APHIS will oversee the cleaning and disinfection of the vehicles. All outer surfaces must be included. The authorized agent will inspect the vehicle for proper cleaning and disinfection before the vehicle may leave the premises.
20. All transport vehicles must be washed at a truck washing facility before going to a different premises.
21. In addition to cleaning and disinfection of the transport vehicles, all transport personnel and other equipment must be decontaminated after each unloading operation, prior to the vehicle returning to the highways.
22. Carcasses and materials will be covered promptly and in accordance with DEM regulations.
23. All personnel, including landfill personnel, will be educated on proper biosecurity and handling of carcasses and materials and will follow guidelines throughout the disposal procedures.

Option E: Incineration

Small numbers of birds may be incinerated at USDA or DAG-designated laboratories or at other appropriate incinerator sites. The following guidelines apply:

1. Birds will be double-bagged in leak-proof biohazard bags and the outside of the bags will be sprayed with disinfectant. Bags will be placed in an appropriate sealed container for transport.
2. For transport of carcasses and materials, carcasses and materials must be contained in closed leak-proof vehicles which can be easily cleaned and disinfected. The vehicle must be built in such a way that leakage and aerosol dispersal during transport is prevented. USDA APHIS guidelines must be

- followed. Before transport off the premises, vehicles must be cleaned and disinfected on the outer surfaces, including the wheels and undercarriage.
3. The vehicle driver will utilize proper biosecurity precautions to avoid contaminating the interior of the vehicle cab before leaving the premises. If possible, the driver should remain in the cab while the vehicle is on the premises.
 4. Vehicles moving carcasses and materials must be sealed by an authorized agent of the DAG or USDA APHIS before leaving the premises and must utilize an approved transit route to avoid passage in close proximity to other poultry operations.
 5. An authorized agent of the DAG or USDA APHIS must break the seal on the vehicle upon arrival and will oversee the process of disposal of the carcasses and other materials.
 6. All carcass and material disposal vehicles must be cleaned and disinfected before leaving the incineration site. The authorized agent will oversee the cleaning and disinfection of the vehicles. All outer surfaces must be included. The DAG or USDA APHIS authorized agent will inspect the vehicle for proper cleaning and disinfection before the vehicle may leave the premises.
 7. In addition to cleaning and disinfection of the transport vehicles, all transport personnel and other equipment must be decontaminated after each unloading operation, prior to the vehicle returning to the highways.
 8. All personnel, including incinerator operators, will be educated on proper biosecurity and handling of carcasses and materials and will follow guidelines throughout the disposal procedures.
 9. Incinerator facilities may be inspected prior to use to determine suitability of service.

Option F: Rendering

Rendering will be considered only in cases where the flock is negative on virus isolation testing. If rendering is an option, the guidelines for handling and transport of carcasses listed for disposal at landfills and at incineration sites apply.

Option G: Chemical Digestion

Currently there are few sites available for disposal by chemical digestion, but this option will be considered in the future if availability increases.

The RI DEM Division of Agriculture reserves the right to amend the above mentioned requirements for Avian Influenza with the goal of any changes still being to prevent, contain and eliminate the disease. Changes to the general guidelines of the protocol may result from information including, but not limited to, virus strain, pathogenicity, morbidity and mortality, movement of birds and products, and additional epidemiological information obtained as a result of avian influenza investigations.