



Note: The purpose of this document is to provide a summary of the USDA APHIS *Mortality Composting Protocol for Avian Influenza Infected Flocks* and is not a substitute for that document. All appendices referenced below can be found in that Protocol located at [www.aphis.usda.gov/fadprep](http://www.aphis.usda.gov/fadprep).

## CONDUCTING THE FARM ASSESSMENT

In order to plan for windrow construction at the affected premises, a Farm Assessment is required. The Farm Assessment may be provided by the Site Manager or may be developed by a composting Subject Matter Expert (SME) recognized by APHIS. The following components found within the assessment must be completed.

- ◆ Evaluate the 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 (see *Appendix A*).
- ◆ Evaluate the type and quantity of infected materials to be composted, including
  - carcass: type, size, number, and condition;
  - in-barn manure/litter: volume, moisture content, and density;
  - stored manure/litter: volume, moisture content, and density;
  - routine mortality method, location, and physical condition of mortalities;
  - feed: quantity and location;
  - eggs: quantity and condition;
  - clean bedding; and
  - paper products.
- ◆ Calculate the amount of carbon needed for composting (see *Appendix B*).
- ◆ Evaluate premises for supplemental water and include the source and application method.
- ◆ Evaluate on farm equipment availability and determine any supplemental equipment needs.
- ◆ Ensure all overhead lines and poultry house equipment are removed or out of the way. Be sure all loose cords cables or hoses are secured so that they will not become entangled by equipment.
- ◆ Ensure ventilation is balanced to reduce the risk of disease transmission while maintaining air quality for worker safety.

## ARRANGING FOR NECESSARY EQUIPMENT

Following a Farm Assessment, the SME coordinates with the Site Manager and requests additional resources from the Incident Management Team (IMT) Logistics Branch. The resource list includes, but is not limited to:

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

## CONSTRUCTING COMPOST WINDROWS

When constructing compost windrows, the SME should ensure that the following key elements are incorporated into the construction of the compost windrows:

- ◆ windows formed outside of poultry houses are sited in consultation with State and local officials to minimize environmental impacts;
- ◆ windrows (finished dimensions not to exceed 6 to 8 feet high and 12 to 15 feet wide) are constructed on adequate and uniform base layer (10 to 15 inches thick) of sufficiently porous carbon material;

- ◆ base layer and windrow are not compacted with equipment;
- ◆ feed from the feed bins and pans is distributed evenly into the compost mix;
- ◆ good carcass to carbon contact is achieved by creating a core with a minimum of 1:1 mix volume of carcasses and other infected materials (manure, egg shells, feed, etc.) and carbon;
- ◆ windrows are constructed to ensure adequate distribution of moisture throughout; and
- ◆ windrows are capped with carbon material (minimum 8 to 12 inches thick) to ensure that no carcasses are exposed.

## TEMPERATURE MONITORING

Once windrow construction has been approved by the SME, daily temperature monitoring for 14 days can begin following the standard operating procedure (SOP) for temperature monitoring (see *Appendix D*). Temperature data should be recorded on the temperature log (see *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*, and any other safety procedures required by the Incident Command (IC) or employer.

## TURNING THE WINDROWS

After the evaluation and approval of the temperature data collected during the initial 14-day compost cycle, the windrow is eligible for turning. The SME or appointed designee will signal approval using the *Phase 1 Windrow Approval Checklist* (see *Appendix G*). Unless obvious problems are noted (leachate, exposed birds, poorly mixed piles, or excessive vector activity), windrows should not be disturbed before the end of the 14-day period. Physical mixing or rebuilding of the windrows will require restarting the 14-day period. Adding or replacing the cap materials or placement of clean carbon sources around the windrow base will not require restarting of the 14-day period. Turning must provide homogenization of the core, base and cap materials, and windrows must maintain adequate porosity and structure after turning. Following a second successful 14-day compost period, the SME or appointed designee will signal approval for releasing the windrow from quarantine by using the *Phase 2 Windrow Approval Checklist* included in *Appendix G*. If soft tissue is observed on the windrow surface, a 2 to 4 inch carbonaceous cap needs to be applied. See *Appendix H* for turning equipment and methods.

## TROUBLESHOOTING PROBLEMS

In the event that windrows fail to perform in the required manner, the following table offers some of the most common composting problems and possible solutions that may be implemented. The advice and council of an SME should be sought in identifying and prescribing remedies for underperforming compost processes.

| Problem                          | Issue                            | Solution                                         |
|----------------------------------|----------------------------------|--------------------------------------------------|
| Excessive flies or odor          | Exposed carcasses                | Add additional cap material                      |
| Leachate from windrow            | Mixture too wet                  | Add additional carbon material, mix and cap      |
| 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                               |