

IN-HOUSE COMPOSTING OF AI CARCASSES

PLANS

- ❑ Recommended published overviews include: Maryland Cooperative Extension Fact Sheet #801 (2002), [Guidelines for In-House Composting of Catastrophic Poultry Mortality](http://www.agnr.umd.edu/MCE/Publications/PDFs/FS801.pdf), <<http://www.agnr.umd.edu/MCE/Publications/PDFs/FS801.pdf>> and Virginia Cooperative Extension Fact Sheet 1 (2004), [Guidelines for In-House Composting Poultry Mortality as a Rapid Response to Avian Influenza](http://www.deq.virginia.gov/waste/pdf/factsheet1va.pdf), <<http://www.deq.virginia.gov/waste/pdf/factsheet1va.pdf>>.
- ❑ The team leader should consult with regional experts who have experience in carcass composting, such as the Rhode Island Office of the USDA [National Resources Conservation Service](http://www.ri.nrcs.usda.gov/contact/) (NRCS) <<http://www.ri.nrcs.usda.gov/contact/>> and the [Maine Compost School](http://www.composting.org/index.htm) <<http://www.composting.org/index.htm>>.
- ❑ See also relevant advisories, including NRCS, Conservation Practice Standard, Code 316, [Animal Mortality Facility](http://efotg.nrcs.usda.gov/references/public/AL/tg316.pdf) <<http://efotg.nrcs.usda.gov/references/public/AL/tg316.pdf>> and Code 317, [Composting Facility](http://efotg.nrcs.usda.gov/references/public/AL/tg317.pdf) <<http://efotg.nrcs.usda.gov/references/public/AL/tg317.pdf>>.

SUPPLIES

- ❑ Have on-hand ample biosecurity and personal protection supplies, including: Tyvek or breathable coveralls (depending on weather conditions) in assorted sizes, rubber boots and/or disposable booties and hair bonnets, disposable particulate/dust face masks, safety goggles and sterile gloves, Lysol or an equivalent, a sprayer and/or bucket and brush with approved disinfectant, and large heavy-gauge plastic garbage bags. During the quarantine period, poultry growers should have biosecurity packets to use when entering their houses.
- ❑ Hand tools, including: 2 square-point long-handle shovels, 2 pitch forks, chain, duct tape, flashlights, ladder, hammer, crowbar, cutting pliers, and (if the grower is not available to assist) a drill with a feeder winch attachment.
- ❑ Composting equipment, including: 2 long-stem compost thermometers per house and a data sheet for the grower to record and report temperatures at least every 2 days.
- ❑ Sawdust or equivalent carbon and bulking material. This can be poor-grade, wet or hardwood waste from local sources.
- ❑ Transport companies to deliver sawdust. (Local feed mills usually have a list of independent haulers).
- ❑ Personal supplies for at least 8 hours: cell phone, cooler and eating utensils, food, drinks, paper towels, and disinfectant hand wipes.

SKID-STEER OPERATION

- ❑ Insofar as possible, engage a skilled skid-steer operator who is familiar with cleaning poultry houses and who does not have contact with poultry on his/her home farm.
- ❑ The skid-steer operator must understand and follow strict biosecurity, cleaning, and disinfection (C&D) protocols.

- ❑ One mid-size machine may be adequate on small farms, but an additional smaller skid-steer may be useful on larger farms, on those with built up litter, and in houses with low ceilings. Two machines may also be warranted if there is a potential backlog of farms for composting.

COMPOSTING PROCEDURES

- ❑ Clearly identify the person(s) who will be in-charge, who will coordinate composting operations, who will purchase supplies and services, and who will document and pay for expenditures.
- ❑ In addition to the team leader, the poultry grower should supply approximately 6 workers to assist with the process of composting and poly removal/disposal.
- ❑ At least one day prior to starting the in-house composting, the company coordinator and in-house composting experts should visit the farm to determine if composting is an option in each house and if additional sawdust will be needed. The sawdust will need to be ordered for delivery on-time. If in-house composting is not an option, alternative disposal method(s) also need to be established at least one day prior to depopulation.
- ❑ The grower should let birds eat all feed from the pans before depopulation.
- ❑ As soon after euthanizing the birds as it is safe to enter the house, begin removing the poly. Be sure to have cleared as much litter as possible and all carcasses entangled in the poly prior to removing it from the house. If possible, the poly should be removed via the end of the house with the least traffic. The skid-steer loader will likely be needed to pull poly out from the house and to carry the carbon dioxide tanks to the wash area.
- ❑ As soon as the poly and carbon dioxide canisters are removed from the house, start cross augers to empty all feed from bins.
- ❑ Make sure that all drinker and feeder lines are raised as high as possible and that any hanging lines are clear for the skid-steer operator. If necessary, adjust the cable/rope suspensions to raise lines to a maximum height. Likewise, remove or raise all partitions and fans from the floor area.
- ❑ Remove carcasses and compost from the compost bin and place them inside the house for windrowing.
- ❑ Consult with a DAG-approved composting expert and skid-steer operator on a plan of action that both meets the composting needs and requires the least material handling and supplemental sawdust. The plan should take into account: the age of the birds, the depth of litter in each part of the house, its moisture and condition, the location of casualties, access to the end door for sawdust and litter removal, the ability to turn piles, and the height of the house ceiling.
- ❑ Composting essentials include: a base layer of litter in the center of the house that is at least 4" deep and 10' wide, a litter mixture around birds or layered on top of the carcasses; and (for birds 5 weeks or older) a windrow that is no more than one bird deep. After forming the windrow, cover it with litter or sawdust to assure that no carcasses are exposed.
- ❑ Feed from the bins should not be used to cap the windrows. Instead, spread it uniformly over the litter/birds or on the windrow before capping the piles.
- ❑ Since the skid-steer will be unable to get some litter from along the walls and corners, use shovels to clean up these areas.

- ❑ Windrow or deep stack excess litter to allow it to go through the heating process. Any remainder can be used to cap the windrows following turning.
- ❑ After forming the windrows, all equipment that was placed outside (e.g. brood partitions, fans, etc.) should be returned to the house.
- ❑ Close the house with curtains cracked only about one inch to prevent build up of extreme moisture and toxic gas.
- ❑ Since toxic gas might still build-up inside these houses, warning signs (such as, “Danger: Do not enter”) must be posted on entry doors to each house. If reentry is required, quickly go inside, drop curtains, and then exit to allow the house to air-out before any sustained work begins inside. For safety reasons, when taking temperature readings or turning stoves on or off, 2 “buddies” need to be involved. One person enters the house while the other stands on the outside to assist in the event of an emergency.
- ❑ When done efficiently, time to complete in-house composting is about 4 hours per house.
- ❑ On the third day, heat the house to 100° F and maintain that temperature for 3 consecutive days. The combination of heat and ammonia will aid in virus deactivation.
- ❑ Monitor the windrow temperatures at least every 2 days. The grower normally records these temperatures and reports them to the designated in-house compost coordinator.
- ❑ When temperatures start to fall (~14 days), schedule the skid-steer operator to return to turn the windrows. It is important to mix the compost as much as possible during this turning process. It may be necessary for the operator to scrape along the edge of the windrow for any partial composted carcasses that roll off the pile. Additional sawdust may be required to cap the piles after turning.
- ❑ Estimated time to turn and cap piles is about 2 hours or less per house.
- ❑ Consider a second re-heating of the house for 3 additional days.
- ❑ Compost and environmental samples are recommended at the first turning and prior to compost removal.
- ❑ Destination of the compost upon removal will be determined on an individual basis.

BIOSECURITY PROCEDURES

- ❑ Before work commences, the skid-steer loader’s vehicles should be parked outside the farm entrance. All other workers should arrive and park at a remote location and be taken to the site by a van (arranged by the sanitation team).
- ❑ Protective apparel is to be donned at the site entrance and, upon exit, removed at the C&D station. All supplies, tools and reusable personal items are to be cleaned and disinfected at the station and secured there (e.g., placed in doubled plastic bags). Disposable items are to be bagged and left at the C&D station.
- ❑ The cleaned dead bird compost bins should be disinfected by the C&D team.
- ❑ The van and any other personal vehicles are to be cleaned and disinfected at the farm entrance station prior to leaving.
- ❑ The skid-steer must be thoroughly cleaned and disinfected and air filters bagged and left at the farm entrance area before leaving the farm.

- ❑ The interior floor area of personal vehicles should be sprayed with disinfectant and the vehicle washed after leaving the farm (or washed at the farm at the C&D station area).
- ❑ Everyone on an exposed farm should wash all clothing and shower upon returning home.
- ❑ Based on individual circumstances, personnel will be instructed on the amount of time to avoid contact with other growers or poultry operations.

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.