

Composting Practices Composting Practices

For producers desiring to compost manure

There are two general practices recognized by the USDA for treating manure to make it safer than raw manure. The first is passive treatments, the second is active treatments.

Passive treatment practices

Passive treatment, or aging, relies on the passage of time and environmental factors to reduce pathogens in the manure.

1. The manure is piled and allowed to age.
2. The internal temperatures of piled manure will increase initially, but as oxygen and moisture are quickly depleted, the temperatures drop. In order to kill pathogens and weed seeds, manure must be held at a minimum of 131°F for 14 days. During this time, the outsides of the pile will never reach that temperature. Pathogens may be killed with the passage of time through drying and ultra violet irradiation. Weed seeds, especially on the outside of the pile, will not be destroyed.

It will be very difficult, if not impossible, to document that the resulting product has reached the proper temperature for the proper amount of time as required by section 1-19 of the audit.

Active treatment practices

1. Manure that is to become compost must be turned frequently to maintain proper oxygen and moisture levels, and to ensure the entire amount of material is heated properly to destroy pathogens and weed seed.
2. After piling, a carbon source such as straw will need to be added to and mixed with raw manure to maintain an ideal Carbon:Nitrogen (C:N) Ratio of 25-30:1.
3. The temperature will rise and will need to be maintained at over 131°F for 14 days to destroy pathogens and weed seeds.
4. During this time, the pile will need to be mixed or aerated to maintain proper oxygenation and to ensure the entire pile is exposed to the high temperatures.
5. The recommended procedure is to follow the process known as Procedure to Further Reduce Pathogens (PFRP).
 - The pile is created, let heat for 3 days, and then turned.
 - Subsequent turnings are done every three days for a total of 5 turnings.
 - In order to comply with Section 1-21, it will be necessary to have a composting procedure and document pile temperatures and moisture content, as well as turning dates.
 - This documentation will be referred to as a time/temperature log. See next page.

Storage Pest Management Program

A rodent and bird control program has been implemented at this storage facility.

1. If rodent traps are placed inside the storage facility, only spring-loaded style traps will be used.
2. No bait traps will be used inside the storage facility. Bait traps may be used outside the storage facility only.
3. All traps will be checked frequently and bait traps will be restocked with bait when necessary. Traps will be located in several areas inside and outside around the facility.
4. If appropriate, chicken wire or netting will be used over the air intake door and exhaust louvers to help prevent birds from entering the storage facility.

Thermometer Calibration

Melting point of ice method

1. Place ice in a container and allow melting to begin.
2. Stir to insure the temperature in the ice/water mixture is uniform throughout the container.
3. When the container is filled with a 50/50 ice and water solution, insert the thermometer and wait until the temperature stabilizes.
4. If the thermometer is properly calibrated it should read 32°F (0°C).
5. If the thermometer is not reading 32°F (0°C), adjust the thermometer (if possible), use the temperature difference to adjust for the readings, or replace the thermometer.

Avoid adding tap water to the ice (to obtain the 50/50 mixture) because the mixture will *not* be 32°F (0°C) rather at a higher temperature. The calibration will be more accurate if ice is used.

Reference:

“Food Store Sanitation”, 1998, Sixth Edition, Gravani, Robert B., Rishoi, Don C., Cornell University Food Industry Management Distance Education Program, Lebharr-Friedman Books, Chain Store Publishing Corp.

Storage and Equipment Cleaning Procedures

General instructions for cleaning and disinfecting a potato storage and/or equipment:

1. Remove all plant and potato debris from the storage floor, plenum, duct pipes and/or from equipment used for production and handling.
2. Remove the top 1 to 2 inches of dirt floor and replace with soil not associated with potato production.
3. Thoroughly wash all components of the storage facility and/or equipment with soap and water or steam using a high-pressure sprayer and then rinse.
4. Use an appropriate, registered, and labeled disinfectant for your storage. Contact local suppliers or the Idaho State Department of Agriculture for an updated list of registered disinfectants.
5. When disinfecting, make sure the sprayer pressure and volume are sufficient to effectively clean all surfaces. Wet all surfaces thoroughly and allow the disinfectant to remain on the surfaces for at least 10-15 minutes to be fully effective.
6. Make sure to thoroughly clean the inside of duct pipes.
7. Close up the storage facility for 2 weeks for maximum disinfectant effectiveness and then open the facility, allowing all surfaces to dry.
8. Follow label and supplemental label instructions or hire a professional applicator.
9. Remember, storage and/or equipment cleaning and disinfecting are critical components of good potato storage management.