



## COMPOSTING FARM WASTES

### Runoff Management Program – 8/12/09

#### DESCRIPTION

Composting can be an economical method of farm waste management, but certain Department of Natural Resources (DNR) rules apply. This guidance summarizes DNR rules that apply to composting of crop residues, manure and animal carcasses. Additional information is also provided. The following circumstances determine which rules apply:

- On-Site Farm Composting at Concentrated Animal Feeding Operations (CAFOs)
- On-Site Farm Composting at Livestock Operations that are Not CAFOs, or at Farms that are Not Livestock Operations
- Off-Site Composting at a Farm or Non-Farm site.

#### APPLICABILITY

**Chs. NR 243 or 502, Wis. Adm. Code**, apply depending on the circumstances listed above. In either case, the composting may not cause violations of laws pertaining to carcass disposal, surface water and groundwater quality, and air emissions.

**CAFO** generally means a livestock operation that houses more than 1,000 animal units, or a livestock operation identified as a medium or small CAFO by the DNR. CAFO is defined in s. NR 243.03(12), Wis. Adm. Code.

**On-site farm composting** means composting of farm wastes at any of the following sites:

- the farm site where the farm wastes were generated, or
- a farm site that is under the same ownership or management as the farm where the wastes were generated, or
- a farm site that is adjacent to the farm where the wastes were generated (the farm sites may be under different ownership or management, but must be adjacent properties)

**Carcass Disposal:** All farms, regardless of size, must comply with the following:

- state law prohibits carcass placement in a stream, lake or swale, and limits the time a carcass may be left accessible to dogs or wild animals (24 hrs. Apr. to Nov., & 48 hrs. Dec. to Mar.)
- agricultural performance standards and prohibitions ch. NR 151, subch. II, Wis. Adm. Code

#### RULE SUMMARY

**On-Site Farm Composting at CAFOs:** On-site farm composting at this type of site is regulated by the DNR Runoff Program, and is subject to review under s. NR 243.15(8), Wis. Adm. Code. DNR approval is required prior to constructing or operating the composting. A separate guidance lists information that is typically needed when submitting a proposal to compost at a CAFO (see publication, Composting at CAFOs).

**On-Site Farm Composting at Livestock Operations that are Not CAFOs, or at Farms that are Not Livestock Operations:** On-site farm composting at these types of sites is normally regulated by the DNR Solid Waste Program under ss. NR 502.12(4) and (5), Wis. Adm. Code. (However, systems for combined management of manure from non-CAFO livestock operations may be regulated under rules for CAFOs, if the combined manure is equivalent to the amount that would be generated by a CAFO.) On-site farm composting is exempt from many Solid Waste Rules that apply to off-site composting. The following information describes certain operation and performance requirements, and conditions that allow yard materials and clean chipped wood from off-site to be accepted into on-site farm composting regulated by the Solid Waste Program:

- **Operation & Performance Requirements:** A farm composting operation is exempt from other Solid Waste Program rules if it meets the following conditions:
  - The operation is on-site farm composting (as described above).
  - Meet the performance standards in s. NR 502.04, Wis. Adm. Code.
  - Landspread the compost at the same farm, or another farm, according to the exemption in s. NR 518.04, Wis. Adm. Code.
  
- **Yard Materials & Clean Chipped Wood from Off-Site:** These materials may be accepted from off-site into on-site farm composting, if all of the following conditions are met:
  - Mix yard materials and clean wood chips with farm wastes to increase the carbon to nitrogen ratio and porosity.
  - Total wastes waiting to be composted, along with wastes in the composting process and finished compost stored, do not exceed 10,000 cubic yards at the site at any one time.
  - Meet minimum design and operation standards in s. NR 502.12, Wis. Adm. Code.

**Off-Site Composting:** Composting operations that accept materials from off-site are generally considered commercial services and are regulated by the Solid Waste Program.

## **ADDITIONAL INFORMATION**

**Composting Process:** The DNR defines composting as aerobic decomposition that produces carbon dioxide and water as primary by-products. (Aerobic means in the presence of oxygen, vs. anaerobic means without oxygen.) The rule does not require a minimum oxygen content, but aeration is needed when process temperature reaches 150° F or more, or when oxygen falls to 15% or less. Research shows this minimum oxygen content is needed to prevent anaerobic conditions. Composting is a natural biological process, but proper design and operation is needed to manage large quantities of material in an efficient manner and prevent problems.

**Carcass Composting:** While rendering remains the preferred method for handling most routine farm animal mortalities, properly managed composting can provide an effective option for disposal and recycling. The following Minnesota publication is a good reference: Composting Animal Mortalities, <http://www.mda.state.mn.us/news/publications/animals/compostguide.pdf>

### **More Information Resources:**

- Runoff Management Program: see <http://dnr.wi.gov/runoff/ag/agpubs.htm>, and contact your DNR Regional Animal Waste Specialist
- Solid Waste Program: see <http://dnr.wi.gov/org/aw/wm/recycle/issues/compost.htm> and contact your DNR Regional Solid Waste Specialist

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