

Environmental Protection Criteria Oregon Agricultural Composting Management Plan

The following are necessary elements to be included in Agricultural Composting Management Plans. These elements are the equivalents to those required of composting operations regulated by the Department of Environmental Quality (DEQ) through a facility registration or permit. Implementation of an Agricultural Composting Management Plan submitted to and approved by Oregon Department of Agriculture (ODA) allows certain agricultural composters to be exempt from the DEQ permitting process and fees.

These criteria have been divided into **General Criteria** which apply to all agricultural composting facilities and **Additional Criteria** which apply to agricultural composting operations using non-green feedstocks. Terms used here are defined in OAR 340-093-0030, (Attachment A) and on page 3 of Attachment C.

Persons seeking more information about the requirements described in this document should contact Al Youse, Oregon Department of Agriculture, (503) 986-4708 or Lauren Ettlin, Oregon Department of Environmental Quality, (503) 229-5934.

GENERAL CRITERIA FOR AGRICULTURAL COMPOSTING OPERATIONS UTILIZING EITHER GREEN OR NON-GREEN FEEDSTOCKS

I. Plans

A. Location and Design Features

A written description of the location and design of the physical features of the site and composting operation including the following:

1. Surface drainage control;
2. Wastewater facilities;
3. Fences;
4. Residue disposal;
5. Controls to prevent adverse health and environmental impacts;
6. Detailed description of composting method and equipment to be used; and
7. Design and performance specifications for major composting equipment.

B. Scale Drawings of the Facility

Drawings which include:

1. Location and size of feedstock and finished compost storage area(s);
2. Compost processing areas;
3. Fixed equipment; and
4. Appurtenant facilities (scales, surface water control systems, wells, buildings, surface drainage features, waterways, land application sites, access and others).

C. Operations and Maintenance Plan

A written document which describes normal facility operations and procedures to address upset conditions and operating problems, including:

1. Mass balance calculation showing all feedstocks, amendments, and all products;
2. Removal of compost including quantities, times and destination; and
3. Use of finished compost including, if used on farm, documentation of use at an agronomic rate including crop, yield, soils, nutrient content, application rate, and timing.

D. Plan for Unusable Material

A written document which describes the method for disposal of:

1. Any processed compost that, due to concentrations of contaminants, cannot be marketed or used for beneficial purposes; and
2. Any finished compost which has been stored for two years since processing was completed.

E. Odor Minimization Process

A written document which describes procedures necessary to address odor within the confines of the composting site and includes:

1. A management plan for malodorous feedstock loads;
2. Procedures for immediately investigating any upset conditions to determine the cause of odor emissions, and remedy promptly any odor problem(s) at the facility; and
3. Additional odor-minimizing measures, which may include the following:
 - a. Avoidance of anaerobic conditions in the composting material;
 - b. Use of mixing for favorable composting conditions;
 - c. Formation of windrow or other piles into a size and shape favorable to composting and minimizing odors;
 - d. Use of end-product compost as cover to act as a filter during early stages of composting;
 - e. Odor management factors prior to turning or moving composted material:
 - i. Time of day;
 - ii. Wind direction;
 - iii. Percent moisture;
 - iv. Estimated odor potential; and
 - v. Degree of compost maturity;
 - f. Specification of a readily-available supply of bulking agents, additives, or odor control agents including a description of amount needed and availability; and
 - g. Procedures for avoiding delay in processing and managing feedstocks during all weather conditions.

F. Water Quality Plan

Appropriate procedures to deal with the following water-related issues:

1. Composting facilities shall have no discharge of leachate, wastewater, contaminated precipitation or wash water from vehicle and equipment washing to the ground or to surface waters, except in accordance with water quality requirements pursuant to ORS 468B.050 and administered by the ODA.

2. If no liquid wastes are present, the operator shall provide documentation of what conditions exist or measures have been taken to cause this situation;
3. If liquid wastes are present, the facility shall have a water quality plan that includes:
 - a. Detailed description of leachate control systems including prevention, liners, collection, sumps, storage, disposal.
 - b. Wastewater calculations including precipitation, runoff, washwater, and leachate accumulation for designed storage season.
 - c. Liquid waste and compost land application plan including rate and schedule, crop, yield, acres, nutrients applied and removed, and supplemental irrigation and fertilization.
 - d. Soil, compost and liquid waste sampling to determine agronomic application schedules, if applicable.

G. Access Roads

All-weather roads to allow operations during all intended use seasons of the year.

H. Measures to Control Noise, Vectors, Dust and Litter.

II. Record Keeping

- A. Measure and maintain records of the weight or volume and origin of feedstocks including supplemental feedstocks used for composting.
- B. Measure and maintain records of the weight or volume and destination of finished compost. If used on-site, maintain records of fields applied to, application rate, date, crops grown and yield.
- C. Operations manual that records appropriate periodic monitoring of compost processing parameters including:
 1. Feedstocks management (storage, movement and Carbon:Nitrogen ratio of incorporated feedstocks);
 2. Temperature;
 3. For non-green feedstocks composting - time and temperature measurements to demonstrate attainment of conditions for reduction of human pathogens; and
 4. Other parameters to monitor may be:
 - a. Moisture content;
 - b. Aeration; and
 - c. pH.

**ADDITIONAL CRITERIA
FOR
AGRICULTURAL COMPOSTING OPERATIONS UTILIZING
NON-GREEN FEEDSTOCKS**

In addition to the above, the following are also required in Agricultural Composting Management Plans for agricultural composting operations utilizing any amount of non-green feedstocks (dead animals or dead animal parts or feedstocks likely to support human pathogens).

I. Lining System Design

- A.** If no leachate is present, describe how the facility is operated such that no leachate is generated.
- B.** If leachate is present:
 - 1.** The composter must provide a protective layer beneath compost processing and feedstock areas, leachate sumps and storage basins, to prevent release of leachate to surface water or ground water.
 - 2.** Lining system requirements depend on leachate characteristics, climatic conditions and size of facility and shall be capable of resisting damage from movement of mobile operating equipment and weight of stored piles.
 - 3.** Facility operators shall monitor all water releases and document that there is no release to ground water.
 - 4.** A construction quality assurance plan shall be included detailing monitoring and testing to assure effectiveness of liner system.

II. Pathogen Reduction

- A.** Facilities composting any amount of non-green feedstocks shall have a pathogen reduction plan that addresses requirements of the Code of Federal Regulations(CFR) 40 Part 503.
- B.** The plan must include a Process to Further Reduce Pathogens (PFRP), pursuant to 40 CFR Part 503 Appendix B, item (B)1, dated February 19, 1993, that shall include:
 - 1.** Using either the within-vessel composting method or the static aerated pile composting method, the temperature of the active compost pile shall be maintained at 55 degrees Celsius or higher for three days;
 - 2.** Using the windrow composting method, the temperature of the active compost pile shall be maintained at 55 degrees Celsius or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees Celsius or higher, there shall be a minimum of five turnings of the windrow; or
 - 3.** An alternative method that can be demonstrated by the composter to achieve an equivalent reduction of human pathogens.