



ADMINISTRATIVE RULES OF MONTANA



17.50.1716 SAMPLING AND ANALYSIS REQUIREMENTS FOR COMPOST FACILITIES

- (1) For purposes of this subchapter, the department adopts and incorporates by reference:
 - (a) The United States Department of Agriculture Natural Resources Conservation Service Montana Operation and Maintenance Guide for Composting Facility (MT EFH, 4/14) available at <https://www.nrcs.usda.gov/wps/portal/nrcs/site/mt/home/> or by contacting NRCS Montana USDA Natural Resources Conservation Service, 10 East Babcock Street, Room 443, Bozeman, MT 59715-4704 or 1 (406) 587-6811; and
 - (b) US EPA Class A standard, 40 CFR 503.13, Table 2 which may be obtained at <https://www.gpo.gov/fdsys/granule/CFR-2010-title40-vol29/CFR-2010-title40-vol29-sec503-13> or by contacting the National Technical Information Service, 5301 Shawnee Road, Alexandria, VA 22312 or 1 (800) 553-6847.
- (2) The owner or operator of a licensed compost facility must sample and analyze compost material based on the size and frequency requirements in Table 3, and verify that the finished compost meets the minimum standards established in Table 4:A through 4:E based on the type of licensed compost facility.
- (3) Sampling procedures must be described in the facility's operation and maintenance plan and produce valid and representative analytical results.
- (4) The following requirements apply to finished compost:
 - (a) minor compost facilities – Table 4:D;
 - (b) animal mortality compost facilities – Table 4:C through 4:E;
 - (c) major compost facilities – Table 4:A through 4:E; and
 - (d) facilities composting biosolids – Table 4:A through 4:E.
- (5) The department may require sampling and analysis of additional constituents as determined to be necessary to protect human health and the environment.
- (6) When finished compost exceeds the applicable minimum standards identified in Table 4:A through 4:E based on the facility type, the owner or operator shall:
 - (a) reintroduce the material back into the active composting process;
 - (b) dispose of the material at a licensed Class II solid waste management facility; or
 - (c) otherwise use the material in a manner approved by the department.

Table 3:

TESTING FREQUENCY FOR COMPOST FACILITIES

<u>Finished Compost</u>	<u>Frequency</u>
Less than 5,000 cubic yards	annually
5,000 – 10,000 cubic yards	semiannually
10,000 + cubic yards	quarterly

Table 4:A

TEMPERATURE

High temperatures (133°F for 3 days minimum) are required to destroy pathogenic microbes
High temperatures (>145°F) are required to destroy weed seeds/plants
Temperatures that are too high (>160°F) shall require turning or other incorporation of air. If the pile gets too hot it will shut down (if moist and hot) and or combust

Table 4:B

MAXIMUM CONSTITUENT CONCENTRATION FOR COMPOST

SOLD OR DISTRIBUTED FOR OFFSITE USE

HEAVY METALS

Parameter	Unit	Limit	Test Method found in EPA's SW-846
Arsenic	mg/kg	41	EPA dry wt. 6010A or 7061A; or EPA 3050 and 6010A or 7061A
Cadmium	mg/kg	39	AOAC 975.03B(b) and EPA dry wt. 6010A or 7130; or EPA 3050 and 6010A or 7130
Chromium	mg/kg	1200	EPA dry wt. 6010A or 7190; or EPA 3050 and 6010A or 7190
Copper	mg/kg dry wt	1500	EPA 6010A or 7210; or EPA 3050 and 6010A or 7210
Lead	mg/kg dry wt	300	EPA 6010A or 7420 or 7421; or EPA 3050 and 6010A or 7420 or 7421
Mercury	mg/kg dry wt	17	EPA 7471A

Molybdenum	mg/kg dry wt	54	EPA 6010A or 7480 or 7481; or EPA 6010A or 7480 or 7481; or EPA 3050 and 6010A or 7480 or 7481.
Nickel	mg/kg dry wt	420	EPA 6010A or 7520; or EPA 3050 and 6010A or 7520
Selenium	mg/kg dry wt	100	EPA 7740 or 7741A; or EPA 3050 and 7740 or 7741A
Zinc	mg/kg dry wt	2800	EPA 6010A or 7950; or EPA 3050 and EPA 6010A or 7950

Table 4:C

PATHOGENS

The owner or operator of a compost operation shall ensure that:
the density of the fecal coliform present in the compost is less than 1,000 most probable number (mpn) per gram of total solids (dry weight basis); or
the density of <i>Salmonella</i> species bacteria in the compost is less than three mpn per four grams of total solids (dry weight basis) at the time the compost is to be sold or otherwise distributed for use.
Upon request of the department the licensee shall test any other disease agents determined by the source of animal mortality.

Table 4:D

COMPOST PROPERTIES

Parameter	Units	Potting Grade ^{1/}	Mulch/Top Dressing ^{2/}	Soil Amendment ^{3/}
pH	pH units	6-8.5	5.5-9.0	6-8.5
Moisture content	%, wet weight basis	30-60	30-60	30-60
Organic Matter Content	%, dry weight basis	30-65	>than 30	30-65
Soluble Salt Concentration	dS/m (mmhos/cm)	<6	<10	<10

Particle Size	% passing a selected mesh size, dry weight basis	99%<1/2"	99% <3" 25%+ <3/8"	99% <3/4"
Physical Contaminants (inert material)	%, dry weight basis	<1	<1	<1
Stability Indicator CO ₂ Evolution Rate	mg CO ₂ -C per g OM per day	<8	<8	<8
Nutrient content (total N, P ₂ O ₅ , K ₂ O, Ca, Mg)	%, dry weight	No limit, just informational.	No limit, just informational.	No limit, just informational.

- ^{1/} Potting Grade: Compost used within a blend of materials to formulate a potting mix or seed bed. Compost should not exceed 20-30% of the mix. Soluble Salt content of the mix should not exceed 2.5 dS/cm to 4 dS/cm depending on the plants to be grown.
- ^{2/} Mulch/Top Dressing: Compost is applied to the soil surface to help inhibit weed growth, conserve soil moisture, and reduce soil erosion. Compost is typically applied at a 1-2 inch thickness. Contact with tree trunks or plant stems should be avoided.
- ^{3/} Soil Amendment: Compost is incorporated into the soil to improve soil quality (organic matter, water-holding capacity, aeration, drainage, and cation exchange capacity). Typical blends for soil amendment use is one part compost to two parts soil.

Table 4:E

RESIDUAL HERBICIDES

Parameter	Units	Potting Grade ^{1/}	Mulch/Top Dressing ^{2/}	Soil Amendment ^{3/}
Maturity Indicator (bioassay)	%, relative to positive control	Minimum 80	Minimum 80	Minimum 80
Seed Emergence	%, relative to positive control	Minimum 80	Minimum 80	Minimum 80
Seedling Vigor				

- (7) Compost that contains sewage sludge or septage must meet the requirements in 40 CFR part 503 Appendix B – Pathogen Treatment Process (58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999).

Authorizing statute(s): 75-10-204, MCA

Implementing statute(s): 75-10-204, MCA

History: NEW, 2017 MAR p. 285, Eff. 3/11/17.