**Section 830.APPENDIX B: Performance Test Methods**

a) Man-made materials

1) Take four 250 gram samples.

2) Dry samples at 70° C for 24 hours. Let sample cool to room temperature (20 to 25° C).

3) Weigh each sample and pass through a four millimeter screen. Inspect material remaining on the screen, and separate and weigh man-made materials. Calculate percent man-made materials relative to the total dry weight of the sample prior to screening.

b) Pathogens

The end product compost must be tested to demonstrate compliance with one of the pathogen reduction standards set forth in Section 830.503(f). Such testing must be done in accordance with Standard Methods for the Examination of Water and Wastewater Part 9221 E or Part 9222 D, incorporated by reference at 35 Ill. Adm. Code 830.103, for fecal coliform, and Standard Methods for the Examination of Water and Wastewaters Part 9260 D incorporated by reference at 35 Ill. Adm. Code 830.103, for Salmonella sp. bacteria.

c) pH

The following protocol must be used to determine the pH of the compost: North Central Regional Publication 221, Method 14; or EPA Method 9045 in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), both incorporated by reference at 35 Ill. Adm. Code 830.103.

d) Stability

The operator shall demonstrate that the composite sample has reached stability by showing either:

1) That the compost does not reheat, upon standing, to greater than 20° C above room temperature (20 to 25° C). The degree of reheating must be measured using the following method:

A) Take 4 liters of composite sample and adjust the moisture of the end-product compost so it falls within the range of 45 to 55% water on a dry weight basis;

B) Fill a 2 liter Dewar flask (100 millimeters, inside diameter) loosely with sample within the acceptable moisture range and gently tap to simulate natural settling. Keep at room temperature (20 to 25° C).

C) Insert thermometer into Dewar flask to a point 5 centimeters from bottom of flask. Do not push thermometer against bottom of flask.

D) Record time and temperature each day for 15 days to determine when the highest point is reached. After each reading, shake down the thermometer; or

2) That the end-product compost supports a germination rate of 70% for annual ryegrass and radish using the following protocol:

A) Mix 4 liters vermiculite with 4 grams of air-dried soil.

B) Take 1 liter of the composite sample with a moisture level within the range of 45 to 55 percent, on a dry weight basis; if necessary, adjust the moisture level until within such range.

C) In three 2-liter containers, combine the vermiculite-soil mix with the compost sample at the following ratios:

|  |  |  |
| --- | --- | --- |
| Blend | Vermiculite-Soil Mix | Compost |
|  | (45 to 55% moisture) |  |
|  | (dry weight basis) |  |
|  | (grams) | (grams) |
|  |  |  |
| A | 320 | 960 |
| (75% compost, w/w) | | |
| B | 640 | 640 |
| (50% compost, w/w) | | |
| C | 1,280 | 0 |
| (Control) |  |  |

D) Break up lumps of compost with a spatula or trowel. Moisten the blend with water.

E) Cover each container with plastic wrap and mix well by inverting each container 20 times.

F) Transfer each blend into four 4-inch pots. Fill the pots to the brim and firm the surface by pressing down with the bottom of another 4-inch pot. Leave about 2 to 5 centimeters of space between surface of the blend and the top of the pot.

G) Add approximately 50 milliliters of water soluble fertilizer (e.g., 20-20-20 NPK, fish emulsion) diluted to half-strength to each pot.

H) Place 10 seeds of annual ryegrass and 10 radish seeds onto the surface of the moistened blend. Cover the seeds with about 1 centimeter dry vermiculite.

I) Set the pots in a tray of warm water and let them remain there until capillary action has drawn water up and moistened the surface of the blend. Remove the pots from the tray when moisture from the bottom-watering is observed.

J) Put pots in an environment suitable for plant growth (e.g., 8 to 12 hours of light daily, 30 to 60% humidity, 20 to 25° C). Check pots daily to determine if watering is needed. Blends should be kept evenly moist. If necessary, cover each pot with plastic wrap until the seedlings emerge. Remove plastic wrap at the first sign of emergence.

K) Seven days after planting the seeds, count emergent seedlings in each pot and record visual observations of relative plant conditions identified in Section 830.Table C.

L) Calculate the percent germination of plants in each blend relative to the control pot, using the formula set forth in Section 830.Table C.