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| Analysis Report For: | Copy To: |
|---|---|
| Compost with Me LLC<br>153 North Falmouth Hwy<br>North Falmouth MA 02556 | |

| LAB ID: | SAMPLE ID: | REPORT DATE: | SAMPLE TYPE: | FEEDSTOCKS | COMPOSTING METHOD | COUNTY |
|---|---|---|---|---|---|---|
| C10286 | 18.01 | 03/02/2018 | Finished Compost | | Windrow | |

# COMPOST ANALYSIS REPORT

*Compost Test 1C*

| Analyte | Results (As is basis) (Weight basis) | Results (As is basis) (Volume Basis)* | Results (Dry weight basis) |
|---|---|---|---|
| pH | 7.6 | — | — |
| Soluble Salts (1:5 w:w) | 1.15 mmhos/cm | — | — |
| Bulk Density[1] | — | 1072 lb/yd$^3$ | — |
| Solids | 43.9 % | 471 lb/yd$^3$ | — |
| Moisture | 56.1 % | 601 lb/yd$^3$ | — |
| Organic Matter | 18.6 % | 199 lb/yd$^3$ | 42.2 % |
| Total Nitrogen (N) | 1.1 % | 11.4 lb/yd$^3$ | 2.4 % |
| Organic Nitrogen[2] | 1.1 % | 11.4 lb/yd$^3$ | 2.4 % |
| Ammonium N ($NH_4$-N) | < 2.2 mg/kg *or* < 0.0002 % | < 0.002 lb/yd$^3$ | < 4.9 mg/kg *or* < 0.0005 % |
| Carbon (C) | 10.9 % | 117 lb/yd$^3$ | 24.9 % |
| Carbon:Nitrogen (C:N) Ratio | 10.30 | — | 10.30 |
| Phosphorus as ($P_2O_5$)[3] | 0.44 % | 4.69 lb/yd$^3$ | 1.00 % |
| Potassium (as $K_2O$)[3] | 0.16 % | 1.75 lb/yd$^3$ | 0.37 % |
| Calcium (Ca) | 1.38 % | 14.77 lb/yd$^3$ | 3.14 % |
| Magnesium (Mg) | 0.10 % | 1.02 lb/yd$^3$ | 0.22 % |
| Sulfur (S) | 0.12 % | 1.30 lb/yd$^3$ | 0.28 % |
| Sodium (Na) | 536 mg/kg | 0.57 lb/yd$^3$ | 1220 mg/kg |
| Aluminum (Al) | 1925 mg/kg | 2.06 lb/yd$^3$ | 4383 mg/kg |
| Iron (Fe) | 2161 mg/kg | 2.32 lb/yd$^3$ | 4919 mg/kg |
| Manganese (Mn) | 96 mg/kg | 0.10 lb/yd$^3$ | 219 mg/kg |
| Copper (Cu) | 9.9 mg/kg | 0.01 lb/yd$^3$ | 22.5 mg/kg |
| Zinc | 47.5 mg/kg | 0.05 lb/yd$^3$ | 108.2 mg/kg |

[1]*Volume results are calculated on the basis of compost bulk density. Bulk density value was provided by individual who submitted sample.

[2]See comments on back of report .

[3]To convert phosphorus as ($P_2O_5$) into elemental phosphorus (P), divide by 2.29. To convert potassium (as $K_2O$) into elemental potassium (K), divide by 1.20.

# INTERPRETATION

**pH**

pH is a measure of active acidity in the feedstock or compost. The pH scale is 0 (acidic) to 14 (basic) with 7 being neutral. Most finished composts will have pH values in the range of 5.0 to 8.5. Ideal pH depends on compost use. A lower pH is preferred for certain ornamental plants while a neutral pH is suitable for most other applications. pH is not a measure of the total acidity or alkalinity and cannot be used to predict the effect of compost on soil pH.

**Soluble Salts**

Soluble salts are determined by measuring electrical conductivity (EC) in a 1:5 (compost:water, weight ratio) slurry. EC is related to the total soluble salts dissolved in the slurry and is measured in units of millimhos/cm (mmhos/cm). Compost soluble salt levels typically range from 1 to 10 mmhos/cm. High salinity may be toxic to plants. Ideal soluble salt levels will depend on the end use of the compost. Final compost blends with soil or container media/potting mixes should be tested for soluble salts.

**% Solids, % Moisture**

The ideal moisture content for composting will depend on the water holding capacity of the materials being composted. In general, high organic matter materials have a higher water holding capacity and a higher ideal moisture content. A typical starting compost mix will have an ideal % solids content of 35-55 % (65-45 % moisture. Finished compost should have a % solids content of 50-60 % (50-40 % moisture).

**% Organic Matter**

There is no ideal organic matter level for feedstocks or finished compost. Organic matter content will decrease during composting. The organic matter content (dry weight basis) of typical feedstocks and starting mixes will be greater than 60 % while that of finished compost will be in the range of 30-70 %. An organic matter content (dry weight basis) of 50-60 % is desirable for most compost uses.

**Nitrogen :** Total, Organic, Ammonium, and Nitrate

Total nitrogen (N) includes all forms of nitrogen: organic N, ammonium N ($NH_4$-N), and nitrate N ($NO_3$-N ). Total N will normally range from less than 1 % to around 5 % (dry weight basis) in most feedstocks and from 0.5 to 2.5 % (dry weight basis) in finished composts. $NO_3$-N (an optional test) is generally present in only low concentrations in immature composts, although it may increase as the compost matures. $NH_4$-N levels may be high during initial stages of the composting process, but decrease as maturity increases. Organic N is determined by subtracting the inorganic N forms, $NH_4$-N and $NO_3$-N, from total N. However, because $NO_3$-N levels are generally very low, total nitrogen minus $NH_4$-N provides a good estimate of organic N in most composts and is the value shown on the front of this report. In stable, finished composts, most of the N should be in the organic form. While $NH_4$-N and $NO_3$-N are immediately available to plants, organic N is only slowly available, approximately 10 to 20 % per year. However, mineralization or break-down of organic N into available inorganic forms depends on the C: N ratio (see below) as well as factors such as soil moisture and temperature.

**Total Carbon**

Total carbon (C) is a direct measurement of all organic and inorganic carbon in the compost sample. Unless the sample has a high pH (> 8.3) or is known to contain carbonates, essentially all carbon will be in the organic form. Compost organic matter typically contains around 54 % organic carbon by weight. The carbon content of individual feedstocks may vary from this ratio.

**Carbon: Nitrogen Ratio**

This is the ratio of total carbon (C) to total nitrogen (N) in the compost sample provided. C:N ratio may be used as an indicator of compost stability and N availability. Compost C:N ratio typically decreases during composting if the starting C:N ratio is > 25, but may increase if the starting C:N ratio is low (< 15) and N is lost during the composting process. Composts with high C:N ratios (> 30) will likely immobilize or tie-up N if applied to soil, while those with low C:N ratios (< 20) will mineralize or break-down organic N to inorganic (plant-available) N.

**Phosphorus, Potassium**

Phosphorus (P) and potassium (K) are plant macronutrients. Values reported are for total amounts given in the oxide forms ($P_2O_5$ and $K_2O$). These results provide an indication of the nutrient value of the compost sample. However, plant availability of total phosphorus and potassium in compost has not yet been established.

**Nitrogen, Phosphorus, Potassium Balance**

When compost is applied on the basis of nitrogen (N), most composts will have an excess of phosphorus (P) and potassium (K) relative to crop demand. These mineral elements and salts can accumulate to above optimum levels with repeated application. Growers using compost should regularly soil test to monitor P, K and salt accumulation and should consider using other nutrient sources or nitrogen fixing legumes in their crop rotation especially when P and K levels are above optimum.