



Interpretation and Recommendation Guide for Compost

Evaluating the Characteristics of Your Compost

As partially decomposed organic matter, compost can have a range of characteristics. Compost can vary because of the raw materials used, degree of decomposition, moisture content, nutrient content, salt content, acidity/alkalinity and contaminants (organic and non-organic materials or heavy metals). Some quality measures such as carbon/nitrogen ratio, smell and particle size are indicative of some of the above mentioned characteristics or the effectiveness of the composting process. Large particle sizes are indicative of incomplete decomposition. A foul odor is indicative of a too wet or too tight compost pile. Finished compost is dark brown, and crumbly, and has an earthy smell. The original materials should not be recognizable. Inert materials such as glass or plastic ideally should be no greater than 1% of the compost volume. The table below lists characteristics measured by the MU Soil & Plant Testing Laboratory and briefly describes their relevance to compost quality.

Table 1. Compost analysis interpretation*

Characteristic	Reported Units	Desired Range	Comments
E. C. (electrical conductivity)			Electrical conductivity is a measure of soluble salt content. Higher than desired salt levels can be harmful to germinating seeds and plants when compost is a component of the growing medium. The desired ranges may not apply when compost is used as an amendment because of the diluting effect of mixing the compost with soil.
Saturated Paste	mmhos/cm	< 4.0	
1:1 soil to water		< 2.5	
1:2 soil to water		< 1.5	
Nutrient concentration	% of N-P-K; Ca, Mg, ppm of Zn, Fe, Mn, Cu	various	Low levels of nutrients may indicate incomplete decomposition or low amount of nutrients in the original material(s). Composting concentrates nutrients and provides for their slow-release, which can result in more efficient plant uptake and less fertilizer leaching. In the latter stages of composting, nitrate and ammonium levels increase. Nitrate can leach from the compost.
pH		6.0 – 7.5	pH indicates acidity/alkalinity. Compost may help buffer soil toward neutral, pH = 7.0. It depends on the kind of material composted and the final pH of the compost.
Moisture content	percent	40 - 50	Very wet compost can cause odor problems, while dry compost can be dusty and irritating to work with.
Organic matter content	percent	50 – 70	Organic matter in compost improves soil structure and water holding capacity.
Carbon/Nitrogen (C:N) ratio		10 - 30	C:N ratio is used as a measure of stability. A ratio of less than 25 likely indicates stable compost (the composting process is finished) from which nitrogen will be more available as mineral nitrogen (nitrate and ammonium).

*Adapted from Organic Materials Management. 1995. Michael Leon. California Integrated Waste Management Board.