

Compost Reference Guide

Convert C and N from “Dry Basis” to “As Is Basis”:

Method 1:

$$\frac{(\% \text{ C (or N) dry basis}) (100 - \% \text{ moisture})}{100}$$

Method 2:

$$\frac{(\% \text{ C (or N) dry basis}) (\% \text{ solids})}{100}$$

Estimate % Carbon from volatile solids or organic matter:

$$(\% \text{ volatile solids}) (.56)$$

$$(\% \text{ organic matter}) (.56)$$

Calculate C:N Ratio of a Recipe:

$$\frac{(\% \text{ C Feedstock 1})(\text{Weight of Feedstock 1})^* + (\% \text{ C Feedstock 2})(\text{Weight of Feedstock 2})^* + \dots}{(\% \text{ N Feedstock 1})(\text{Weight of Feedstock 1})^* + (\% \text{ N Feedstock 2})(\text{Weight of Feedstock 2})^* + \dots}$$

*(for as many feedstocks in recipe)

Calculate % Moisture:

$$\frac{(\% \text{ Moisture Feedstock 1})(\text{Weight of Feedstock 1})^* + (\% \text{ Moisture Feedstock 2})(\text{Weight of Feedstock 2})^* + \dots}{(\text{Weight of Feedstock 1})^* + (\text{Weight of Feedstock 2})^* + \dots}$$

*(for as many feedstocks in recipe)

Measure Bulk Density:

Fill 5 gallon bucket ½ full
Drop bucket 10 times from a height of ~ 6 inches
Fill bucket to ¾ full and repeat dropping process

Fill to brim and repeat dropping process
Fill to brim one more time, **DO NOT DROP OR PACK**
Record net weight

Convert Weight to Volume:

Data Needed:

1. Parts in recipe by weight
2. Bulk Density of each ingredient (in same units i.e.: lbs/cu yd)

Select one ingredient to be the primary feedstock A.

Calculate relative density of each feedstock:

$$\frac{\text{Bulk Density of Feedstock X}}{\text{Bulk Density of Feedstock A}}$$

$$\text{Bulk Density of Feedstock A}$$

Calculate # of parts of each feedstock in recipe by volume:

$$\frac{\# \text{ Parts of Feedstock X by weight}}{\text{Relative Density of Feedstock X}}$$

$$\text{Relative Density of Feedstock X}$$

Measure Volume of a Windrow: (all measurements in feet)

High Parabolic Windrow:

$$\frac{(0.4)(\text{width} \times \text{height}) \times (\text{length})}{27 \text{ cu ft/cu yd}}$$

Low Parabolic Windrow:

$$\frac{(0.6667)(\text{width} \times \text{height}) \times (\text{length})}{27 \text{ cu ft/cu yd}}$$

Triangular Windrow:

$$\frac{(0.5)(\text{width} \times \text{height}) \times (\text{length})}{27 \text{ cu ft/cu yd}}$$

Trapezoid Windrow:

$$\frac{(\text{height})(\text{width} - \text{height}) \times (\text{length})}{27 \text{ cu ft/cu yd}}$$