

Determining Feedstock Volumes for Your Compost Pile

I want to make a compost pile,
recycled green-waste makes me smile.
But, how much "Greens" and how much "Browns"?
Those calculations make me frown.
I wish there was an easy way.
See **Table 1**. Hip-hip hooray!

-Ted Radovich (2010)

You want your pile C:N ratio to start at 25:1-30:1. This generally requires mixing of Greens and Browns. "Greens" refer to nitrogenous materials with a C:N <30:1. "Browns" refer to carbonaceous materials with a C:N >30. Most people use a rule of thumb for mixing by volume, e.g. 3 parts "Browns" to 2 parts "Greens" by volume. But the correct proportions will actually depend on many factors. The most accurate way to establish a pile with a correct C:N ratio is to determine how much carbon and nitrogen is in each material and adjust for several factors (see below). Table 1 is derived from a Klickitat County, WA website as a quick guide for how many parts "brown" to add to each part "green".

Table 1. Add the following parts "Browns" for each part of corresponding "Greens" by volume. **For example, use ten buckets of dry leaves for every bucket of vegetable waste.** The ratio of carbon to nitrogen (C:N) is listed in parentheses.

GREENS	BROWNS				
	Dry leaves (50:1)	Newspaper (55:1)	Office Paper (130:1)	Soft Wood chips (225:1)	Cardboard (380:1)
Chicken Manure (6:1)	72	52	21	22	11
Vegetable waste (11:1)	10	7.5	2.8	3.0	1.6
Food Waste (15:1)	15	10	3.8	4.4	2.2
Packed Grass (15:1)	4.6	3.5	1.3	1.4	0.8
Cattle manure (17:1)	7.0	5.0	1.9	2.1	1.1
Horse Manure (27:1)	2	1.5	0.5	0.6	0.3

Factors incorporated into the calculations include:

- Bulk Density of Wet Material (average pounds per cubic foot or yard)
- Percent Moisture (average)
- Percent Nitrogen (average, dry weight basis)
- C:N Ratio (average, dry weight basis)
- Percent Cell Wall (average, van Soest Test for Neutral Detergent Fiber)
- Percent Lignin (average, van Soest Test for Acid Detergent Lignin)

For more details and to calculate more complex mixtures, please see:

<http://www.klickitatcounty.org/solidwaste/fileshtml/organics/compostcalc.htm>