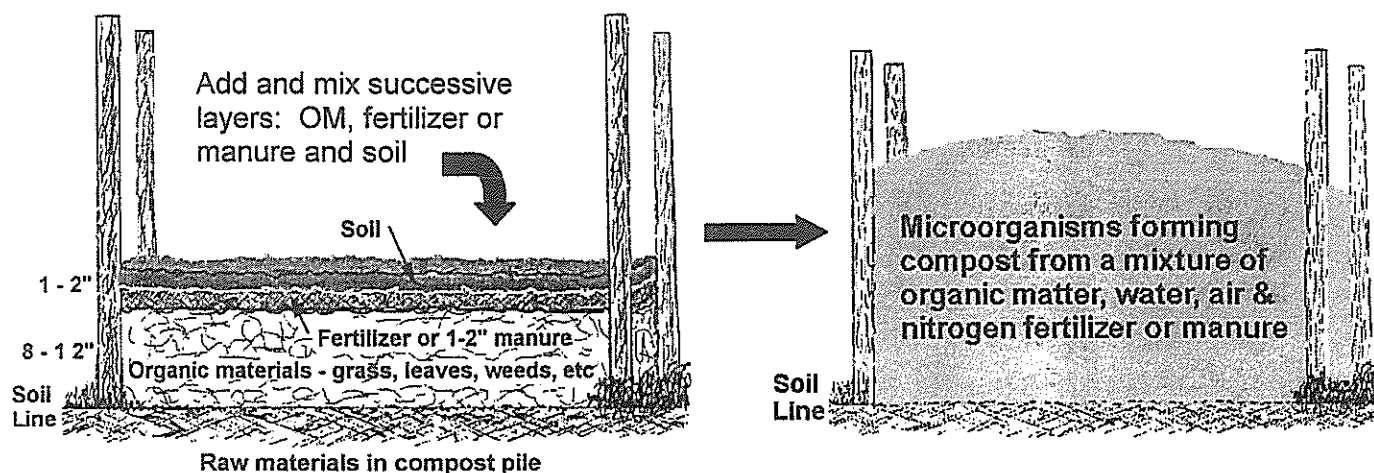


A Quick Guide to Composting

Dr. Wayne S Johnson, State Horticulture Specialist



Make compost by alternating layers of organic matter (OM), soil, nitrogen fertilizer and lime (use lime only if your soil is acidic). Follow this procedure:

- ✓ Make the compost pile 4 or 5 feet square and several feet tall, 4 to 5 feet is best. Structures are not necessary, but may be used.
- ✓ Organic Matter: Add 8 – 12 inches OM, anything from plants or animals (yard wastes, table scraps, manures) except diseased plants, coarse woody material and bone that is slow to decompose. Do not include meat, which may smell and attract vermin. Do not use cat and dog manure. Use about 50 percent green and brown OM. The finer the OM the quicker it makes compost. If you can run it through a shredder, do so.
- ✓ Soil: Soil, 1 – 2 inches, supplies microbes to decompose the organic matter. Commercial starters are not needed.
- ✓ Nitrogen Fertilizer: Add to each 5 by 5 foot layer of OM and soil $\frac{1}{4}$ to $\frac{1}{2}$ cup of a low analysis nitrogen fertilizer, less than 25% nitrogen. The microbes that decompose the organic matter need nitrogen to grow.
- ✓ Lime: Lime is not necessary if alkaline desert soils are used. They raise the pH naturally. Where acid forest soils are used, add $\frac{1}{2}$ to 1-cup lime to each 5 by 5-foot OM layer. Lime raises the pH of the compost. An overly acidic condition slows the growth or kills many beneficial microorganisms that decompose the OM.
- ✓ Water: Sprinkle the OM lightly. Moisture is required for the microorganisms to grow. **DO NOT OVER WATER** or anaerobic microorganisms will slow decomposition and cause the pile to stink! If this happens, turn the pile and reduce the amount of water applied to it. In our dry climate, you may need to cover the pile to keep it moist.

Water and mix the layers of OM, soil, fertilizer, and lime (if used) together as you make the compost heap. Turn the compost pile in on itself every few weeks and water regularly to keep the process active. The compost is ready when it turns dark brown, the individual leaves and other OM are indistinguishable and the whole has a sweet earthy odor. Use it to improve your soil and plant health. Lightly cover seeds with compost to keep them from drying out and hasten a more uniform germination.

Small Fruits

To plant strawberries, you might build a little mound of compost in the bottom of a shallow furrow and drape the roots of the young plants over the mound so they cover it like a skirt. Then bring the soil up to the plant just below the crown.

Grapes and berries can benefit from a 3-inch layer of compost mulch in early spring. The mulch will act as a weed barrier and also feed the plants.

BIOSELECTOR

This BioSelector provides recommendations for cultural practices and compost applications based on the percentage of organic matter in your soil.

Organic Matter (O.M.) Test Result

Possible Problems

Remedies

Recommended Finished Compost Applications per 1000 Square Feet

Below 2% O.M.,
LOW

Low microbe and earthworm activity. Nitrogen deficiencies likely. Poor nutrient exchange and low water-holding capacity. Garden crops will not survive stress.

Increase organic matter level over next 2 to 3 years. Use foliar nutrients and side-dress plants. Grow green manures. Apply composts and mulches. Rotate vegetables as much as possible and sow cover crops.

2000 lbs. (approximately 2 cu. yds.) This represents a 1/4" to 1/2" thick layer, which should then be thoroughly mixed into top 6 inches.

2% to 3.5% O.M.,
MEDIUM

Microbe and earthworm activity better, but still low. Nitrogen may still be deficient. Soil's ability to hold nutrients and moisture is still not adequate to avoid plant stress.

Foliar nutrients are still recommended in addition to composts. Continue to grow green manure. Mulch and sow cover crops where possible. Organic mineral fertilizers still needed, broadcast in the row. Side-dress heavy feeders.

1000 lbs. (approximately 1 cu. yd.) This represents about a 1/8" layer. Incorporate into top 6 inches.

3.5% to 5% O.M.,
GOOD

Till, structure, and water-holding should be adequate. Healthy, productive crops are more likely.

Continue growing green manures and applying composts. Heavy feeder crops still need fertilization.

500 lbs. Thoroughly mix into top 4 inches.

Above 5% O.M.,
EXCELLENT

High soil life is providing efficient nutrient exchange. Moisture-holding capacity should be good, regardless of weather stress.

Apply only maintenance amounts of organic matter. Too much raw matter could overload the soil ecosystem and tie up trace minerals. Green manuring should maintain organic levels except in the Deep South.

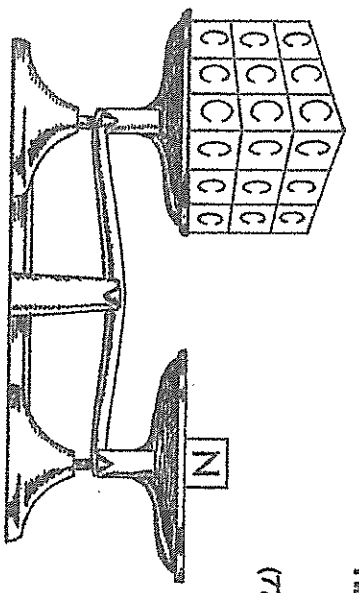
200 lbs. Thoroughly mix into top 4 inches.

Adapted from Necessary Trading Company's BioSelector™ chart.

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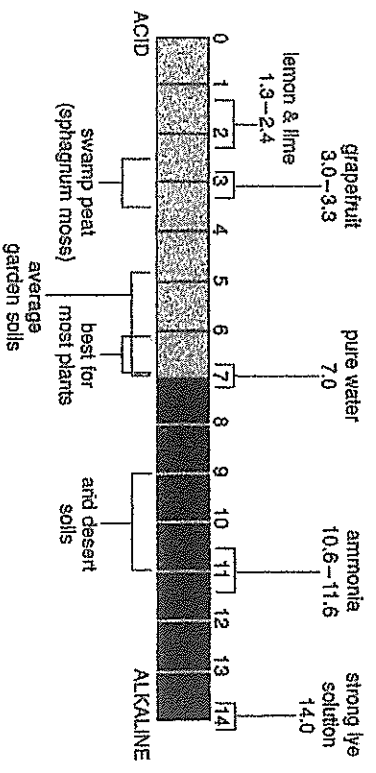
that a good ratio of carbon to nitrogen in a compost pile is about 25 to 30 parts carbon to 1 part nitrogen, or 30:1 (commonly shortened to "30"). In practical terms, this means most of the materials you add should be carbon materials. A pile with a C/N much higher than 25 to 30 will take a long time to decompose. This is why a pile of oak leaves or a mound of sawdust and wood chips will sit for years without much apparent decay. If the C/N ratio is very low (that is, if there is too much nitrogen), your pile will likely release the excess as smelly ammonia gas.

Here are the average C/Ns for some compostable materials that are often used:

Compostable Material	Average C/N
Alder or ash leaves	25
Grass clippings	25
Leguminous plants (peas, beans, soybeans)	15
Manure with bedding	23
Manure	15
Oak leaves	50
Pine needles	60-100
Sawdust	150-500
Straw, cornstalks and cobs	50-100
Vegetable trimmings	25

pH

If you know nothing else about your garden soil, you should know its pH. Plants will literally be poisoned if the pH is much too high or low. The pH of the compost you put into the garden will have a marked effect on the soil there. Hence, it is a good idea to have some understanding of what pH is all about.



The pH scale and some commonly known substances

The term pH, as you may or may not recall from high school chemistry, describes the alkalinity ("sweetness") or acidity ("sourness") of soil, compost, and other substances, and pH is usually expressed as a number. The pH scale runs from 1, indicating pure acidity, to 14, which is purely alkaline or "basic." Something neutral would be described as 7, halfway between 1 and 14. The neutral zone, somewhere around 7, is desirable for most plants. Most bacteria and fungi operate best in a medium with a pH from 6.5 to slightly more than 7. Clearly, then, you want to keep your compost pile within this range. You can find out the pH of your compost by having it analyzed. Send a sample to your state university Extension

By Stu Campbell