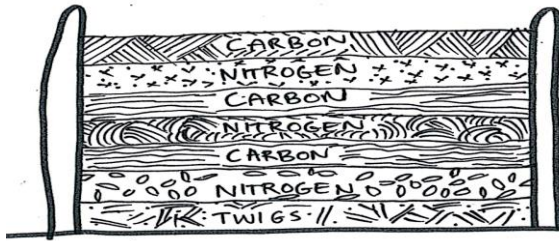


Composting Guide

Compost is one of nature's best mulches and soil amendment material; it can be used in place of commercial fertilizers. Compost improves soil structure, texture, and aeration and also increases the soil's water-holding capacity. Above all, it is very cheap. Addition of compost to soils, improves fertility of the soil and can also stimulate healthy root development in plants. The organic matter component in compost provides food/source of nutrient for microorganisms which keeps the soil in a healthy and balanced condition. Nitrogen, Potassium, and Phosphorus are in turn produced naturally by the feeding of microorganisms, and thus, a little if any of these soil amendments nutrients would be required to be added.



How to Compost

1. Start your Compost pile on a bare ground/soil: This allows worms and other beneficial organisms to aerate the compost and also to be transported to your garden beds.

Twigs & weeds

Maize or other crops straw



Animal dung



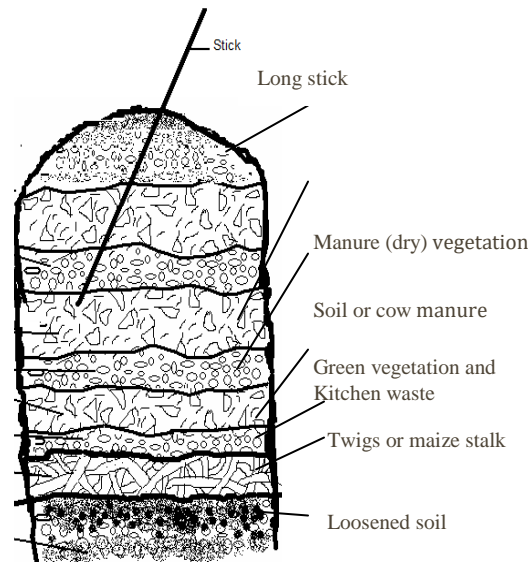
Food scraps



2. Lay twigs or straw first (about 15 cm): This aids drainage and helps aerate the pile.

3. Moist ingredients are food scraps, tea bags, seaweed, etc. Dry materials are straw, leaves, sawdust pellets and wood ashes. If you have wood ashes, sprinkle in thin layers, or they will clump together and be slow to break down. Add compost materials in layers, alternating between moist and dry material

4. Add manure, green manure (clover, buckwheat, wheatgrass, and grass clippings, etc.) or any nitrogen source: This activates the compost pile and speeds up the process. For example you can pile as follow:-



5. Keep compost moist: Water occasionally, or let rain do the job.

6. Cover with anything you have - wood, plastic sheeting, carpet scraps. Covering helps retain moisture and heat, two essentials for compost: Covering also prevents the compost from being over-watered by rain. The compost should be moist, but not soaked and sodden. The compost should be moist, but not soaked and sodden

7. Turn. Every few weeks give the pile a quick turn with a pitchfork or shovel. This aerates the pile. Oxygen is required for the process to work, and turning "adds" oxygen. You can skip this step if you have a ready supply of coarse material, like straw.



Particle Size

The ideal particle size should be around 5-7 cm. In some cases the raw material may be too large to permit adequate air flow or may be too moist. A common solution to this problem is to add a bulking agent (straw, dry leaves, paper, and cardboard) to allow for proper air flow. Mixing materials of different sizes and textures also helps aerate the compost pile.

Material for Composting

For better understanding there are two types of material used. Brown material provides carbon (e.g. paper, like shredded pieces of paper, cardboard, and paper rolls. Dry yard waste, like dry leaves, small branches, and twigs, straw, sawdust, and used potting soil). Green material provides nitrogen (e.g. wet yard waste like fresh grass clippings, green leaves, and soft garden pruning's, food scraps like vegetable and fruit peels, coffee grounds, and tea bags).

It is recommended to add three parts of 'BROWNS' to one part of 'GREENS', but making sure larger pieces are chopped or shredded. The ideal compost pile contains browns and greens (of varying sizes) placed in alternate layers of different-size particles. Anytime you add to the pile, turnover and fluff it with a pitchfork to provide aeration.

To ensure good composting process the ratio of Carbon to Nitrogen (C:N) should be 30 is to 1 in ratio. The C:N ratio of materials can be calculated by using the table below.

Example, if you have two bags of cow manure (C:N = 20:1) and one bag of corn stalks (C:N = 60:1). Combining these will result in a C:N ratio of $(20:1 + 20:1 + 60:1)/3 = (100:1)/3 = 33:1$.

What Not To Compost

Diseased Plants, Meat and Fish, Bones, Oil or Fats, Dairy Products, Cooked Food, Coal Ash, Cat and Dog Litter, Disposable Nappies, Weeds gone to seed and Weeds that spread by Roots and Runners.

Moisture

For optimum performance, moisture content within the composting environment should be maintained at 45 percent. Too much water can cause the compost pile to go anaerobic and emit obnoxious odors. Too little will prevent the microorganisms from multiplying.

ADVICE: If you take a handful from the center of your pile and you can squeeze just a few drops of moisture out of it, that's perfect.

Addition of Material during the Composting Process

Ideally, new materials should be added to the composting system during turning or mixing. Generally, the addition of moist materials accelerates the composting process while the addition of dry materials slows the process.

Solving problems:

Problem	Cause	Solution
Rotten Egg Smell	Insufficient air or too much moisture	Turn pile and incorporate coarse browns (sawdust, leaves)
Ammonia Smell	Too much nitrogen	Incorporate coarse browns (sawdust, leaves)
Pile Does Not Heat Up or Decomposes Slowly	Pile too small	Add more organic matter
	Insufficient moisture	Turn pile and add water
	Lack of nitrogen	Incorporate food waste, grass clippings, or manure
	Not enough air	Turn pile
	Cold weather	Increase pile size or Insulate with straw or a tarp

	C:N Ratio
Vegetable wastes	12-20:1
Alfalfa hay	13:1
Cow manure	20:1
Apple pomace	21:1
Leaves	40-80:1
Corn stalks	60:1
Oat straw	74:1
Wheat straw	80:1
Paper	150-200:1
Sawdust	100-500:1
Grass clippings	12-25:1
Coffee grounds	20:1
Bark	100-130:1
Fruit wastes	35:1
Poultry manure (fresh)	10:1
Horse manure	25:1
Newspaper	50-200:1
Pine needles	60-110:1
Rotted manure	20:1

Sources:

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