

Composting

Texas A&M Extension Service

Chapter 6, Composting Questions and Answers

What is really meant by the process of composting?

Composting is a microbial process that converts plant materials such as grass clippings and leaves to a more usable organic soil amendment or mulch. Gardeners have used compost for centuries to increase soil organic matter, improve soil physical properties, and supply some of the essential nutrients for plant growth.

What is compost?

Compost is the partially decomposed remains of plants. In its final state of decomposition it is referred to as humus.

Does compost have any value as a fertilizer?

Yes, because decomposed materials have some nitrogen, phosphorous, and potassium content even though in small amounts. The addition of garden fertilizers to speed up decomposition supplies some of the nutrients as well.

Can compost be used as a substitute for fertilizer in the garden?

It can be used as a source of nutrients, however, there are not enough nutrients present in the compost to supply the needs of vegetable crops and ornamental plants. The lack of large amounts of nutrients in compost is far outweighed particle size of the material being composted depends on the final use of the compost.

However, on farms and large gardens, it is doubtful whether the advantages of shredding will be sufficient to justify the additional cost and labor. In ordinary composting any particles that are too large can be forked or screened out and broken up when necessary. If the material is to be used on lawns or flower gardens, it can be screened after composting through a 1-inch or smaller screen to give it a better appearance and to make it easier to apply and work into the soil. The individual farmer or gardener may not be necessarily particular about the uniformity of the compost structure when preparing the compost. Nor is the uniformity as important for agriculture fields as for the hobby gardener.

Initial shredding of all the material is not necessary in the composting operation. It is often the best practice to limit the initial shredding to large pieces of organic materials. Some composters believe that permitting some larger irregular pieces to remain tends to create greater air spaces in the mass and entrap

more oxygen. Undecomposed pieces can be screened out of the final compost and put back through the decomposing process.

Vegetative and herbaceous matter should not be ground because it becomes soggy. The high moisture content of these materials makes them useful in small quantities throughout the composting process.

Aerobic decomposition proceeds best between 40% and 70%.

Is it necessary to add lime (calcium) to the compost pile?

It is not necessary, nor is it recommended. Too much lime may cause a loss of nitrogen from the pile. Most finished compost will have a near neutral pH without the addition of lime.

Is it necessary to add inoculum to the compost pile to activate the composting process?

Inoculation with prepared microbes may hasten the process. However, there are enough microbes present on the material being composted to initiate the process.

What are the best materials for composting?

Most plant material can be used for composting. Leaves are perhaps the best material because of their availability and organic content; however, other types of organic materials such as animal manures, grass clippings, vegetable refuse, small tree limbs and shrub trimmings, coffee grounds, and rotted sawdust are considered good composting materials. Do not compost diseased plants, weeds with seeds, or invasive weeds such as morning glory and nut grass; avoid composting feces, meat products, or materials contaminated with chemicals.

Is it necessary to shred materials for the compost pile?

The finer the material is that goes into the compost pile the quicker and more thorough the decomposition.

Can a rotary mower be used to shred materials?

Yes, it works best on dry materials that are not too woody. For example, leaves can be shredded effectively by a rotary mower. It is best to use it on a hard, level surface.

What is meant by Carbon to Nitrogen ratios?

When combining any organic materials to make compost, the concept of carbon to nitrogen (C:N) ratio is critical. The micro-organisms in compost use carbon for an energy source, and nitrogen for making proteins. The proportion of these two elements used by the micro-organisms averages about 30 parts carbon to 1 part nitrogen. Given a steady diet at this 30:1 ratio they can work on organic material very quickly. The larger the number the greater the amount of carbon in proportion to nitrogen and the slower the decomposing process. Sawdust has a very high C:N ratio and decomposes fairly slowly unless some additional nitrogen is supplied. Grass clippings have a relatively low C:N ratio and decompose relatively quickly. Providing a mixture of high and low C:N materials usually results in better or faster decomposition than too much of either material.

Do compost piles need turning?

Yes, turn the pile to supply more oxygen for the microbe population and to shift undecomposed material on the edge of the pile to the center where it too will be decomposed.

Do compost piles have offensive odors?

Not if composting is done properly (i.e. provided good aeration and moisture for rapid decomposition). If animal manures are used, some odor may be detectable in the beginning but will dissipate as the process accelerates.

What do you do about a neighbor who complains about composting even though it doesn't smell?

- 1. Set a good example by keeping your compost system as neat as possible.**
- 2. Remember the essentials when you compost, especially the C:N ratio because too much nitrogen can cause an odor problem.**
- 3. Be sure to explain the benefits of composting every chance you get. Tell them why you do it and how it works for you. They'll catch on sooner or later.**

Are earwigs bad? What is their composting role?

Earwigs are rarely a serious threat to crops and they can be an aid to the composting process as scavengers. They prefer cooler piles.

How do you compost when you have too many materials that are high in nitrogen?

- 1. Store high carbon materials (sawdust, leaves, shredded newspaper) and use them when needed.**
- 2. Buy peat moss and combine with the materials that are high in nitrogen.**

Can newspaper be composted?

Yes, if shredded and mixed well with other materials. Newspaper is also a good mulching material and be placed beneath wood chips for a path. The inks used today are generally non-toxic.

How do you know when compost is finished?

When it has become dark, loose and crumbly; and if in a hot pile, when it doesn't re-heat upon turning. Sifting out unfinished materials is helpful if the aesthetics are a problem.

How are food scraps stored and used to make compost?

Store them in sealable plastic containers and layer with sawdust to minimize odor problems. They can be used by burying them under at least eight inches of soil or turned in a hot compost.

Can noxious weeds and thorny plants be composted?

Yes, but care must be taken so the compost produced does not replant the weeds where they are not

wanted.

How are noxious weeds such as morning glory, crabgrass, buttercup, ivy roots and blackberries composted?

Plants that propagate vegetatively should be very thoroughly dried in the sun and then used as a compost ingredient. Or they should be composted alone and covered with black plastic to sit for as much as two years. A thorough composting in a hot system should kill most weed seeds.

Can bones and meat scraps be composted?

Yes, but there is too much potential for pest problems, so we do not recommend composting these materials.

Can pet wastes be composted?

Do not compost pet waste. Not only are they smelly, but they can be dangerous to your health.

How do you balance carbon and nitrogen to make a hot pile?

- 1.Learn C:N ratios of materials and balance mathematically.
- 2.Learn C:N ratios of materials and balance intuitively.
- 3.Use brown and green materials in approximately equal proportions.

Can wood ashes be added to the compost pile?

Yes, but in limited quantities.

Can sod be composted?

Yes, stacked in a pile, grass side down, kept moist and covered with black plastic. It can take up to two years to fully compost.

Should the compost pile/bin be placed in the shade or sun?

A sunny spot is best because the heat of the sun speeds decomposition. However, the pile also dries out faster and requires more frequent watering than a pile in the shade.

When is a pile too small to heat up?

For a hot compost, we recommend a minimum dimension of 3' X 3' X 3'. Insulation of the sides or top would help hold the heat of the process.

How do you know when to turn the pile?

If you are making hot compost, turn the pile when the internal temperature decreases below 100°F.

Are slugs a problem? What is their role in composting?.

They are not a problem for the composting process - they actually contribute to the process by feeding on decaying and fresh wastes. Their proximity to the garden can, of course, be a problem.

What is the easiest way to compost?

A holding unit or bin is the easiest way to compost.

Can fruit waste be composted?

Yes. With citrus, it is best to chop the rinds as much as possible to aid decomposition. Compost them like other food wastes.

Should diseased materials be used to make compost?

As a general rule, it would be best to not compost diseased plant materials because of the chance of re-infecting your garden.

When is compost ready to use?

When the pile returns to normal temperature and the organic material crumbles easily. At this point you should not be able to recognize the material that you put in the original pile. The composting process in the average pile takes about 6 to 8 months, though an ideally mixed and tended pile may take less than as 8 weeks to become compost.

How can I use compost?

Compost can be used to enrich the garden, to improve the soil around trees and shrubs, as a soil amendment for houseplants and when screened, as a part of seed-starting mix or lawn top dressing.

Can I compost grass clippings that have been treated with pesticides?

Some lawn herbicides may persist in the soil for 6 to 8 months. However, composting accelerates the degradation process. If treated grass clippings are composted for at least one year, pesticide residue should not be a problem when the compost is used in the garden or landscape.

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