



# Composting 101

## Description of Materials and their Usefulness in Composting

Following are descriptions of common organic materials and their usefulness in the compost pile.

### Barbecue Ashes

Ashes from the barbecue (except for wood charcoal, such as mesquite) contain sulfur oxides and other chemicals which are bad for the garden, therefore these ashes should not be used.

### Bermudagrass

Bermudagrass is very invasive, reproducing readily from the tiniest bit of surviving vegetation. Dry the grass very thoroughly in the sun, so it is completely dead, before adding it to the compost pile.

### Bones

Bones take too long to break down and are attractive to scavenging animals, so they should not be included in the compost pile.

### Branches

Branches must be shredded before adding them to the compost pile.

### Cardboard

Cardboard is made from thick paper. If it is well shredded, it can be added to the compost pile. Because it is almost pure cellulose, cardboard should be mixed thoroughly with green materials. Waxed cardboard however, will not compost well.

### Cheese

Animal grease and oils, such as in cheese, not only attract pests,

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but also inhibit the biochemical processes necessary to successful composting.

## Coffee Grounds

Earth worms love coffee grounds, so use them in the compost pile, in your worm box, or as a mulch. The grounds are acidic and can be used by themselves around evergreens, roses and other acid loving plants. Coffee filters and tea bags can also be included in the worm box or compost pile.

## Corn Stalks

Cornstalks and husks are very slow to break down. It is best to run them through a shredder before adding them to the compost pile; and they should be mixed with materials that break down easily. They are good for providing aeration to the pile.

## Cotton Rags

Natural fibers such as cotton, fleece, hemp and burlap may all be composted. These materials tend to break down slowly so it is best to shred or chop them first.

## Diseased Plants

It is best not to compost diseased plant materials because insect eggs, disease spores, or the actual insects themselves could survive in the compost pile and reinfect your garden.

## Eucalyptus Leaves

Eucalyptus leaves have a reputation for being toxic to plants although recent studies dispute this idea. However, eucalyptus leaves are slow to breakdown due to their high oil content.

## Food Scraps

All kitchen scraps, excluding animal products (*egg shells are okay*) can be composted in closed-air containers or worm bins. Animal products are slow to break down and attract pests. Store scraps in a container with a tight fitting lid. Kitchen scraps can also be stored in the freezer.

If vegetable and fruit scraps will be added to open-air composting piles, it is important to bury the food several inches in the center of the pile. This will help avoid attracting pests, plus breakdown



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occurs quicker in the pile's center.

## Garden Trimmings and Flower Stems

The remains of flower stems and garden trimmings are often brown

## Food Scrap Uses

### CAN BE USED

Apples  
Apple peels  
Cabbage  
Carrots  
Celery  
Coffee filters  
Coffee grounds  
Egg shells  
Grapefruit  
Lettuce  
Onion peel  
Orange peel  
Pears  
Pineapple  
Potatoes  
Pumpkin shells  
Squash  
Tea leaves  
Tea bags  
Tomatoes  
Turnip leaves

### CANNOT BE USED

Butter  
Bones  
Cheese  
Chicken  
Fish scraps  
Lard  
Mayonnaise  
Meat scraps  
Milk  
Peanut butter  
Sour cream  
Vegetable oil  
Yogurt



and slower to decompose. They can be added to help aerate piles of denser materials such as grass clippings.

## Grass Clippings

Grass clippings — our most common organic discard at home — have been called "*green manure*." Fresh grass clippings are rich in nitrogen and will help a pile heat up. Because of their high water content, they can also pack down and become slimy, so add the clippings in layers and alternate with leaves, and other brown materials, or with dried grass clippings. Current research suggests that when grass clippings are dried quickly there is only a small amount of nitrogen loss; however, when subjected to alternating periods of drying and wetting before use in a compost pile, significant amounts of nitrogen will be lost.

## Hedge Prunings and Twigs

Hedge prunings and twigs are usually very coarse and difficult to break down unless they are chopped or shredded. The harder or more

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woody the twigs, the smaller they need to be chopped. Woody trimmings up to 1/8" in diameter can be run over with a power lawn mower; chopping materials with a sharp shovel is also effective. Hedge prunings are beneficial in permitting air penetration to the pile. They are commonly used on the bottom of the pile for this reason.

## House Plants

House plants are a good addition to the compost pile. They act as greens if fresh, and browns if dried. Old potting soil can also be added to the pile.

## Ivy

Plants which spread by rhizomes (vegetatively) may not be killed even in a well built hot pile. Dry these plants thoroughly in the sun before adding them to the pile.

## Manure

There are few materials that are as beneficial to compost as manure. One reason manure is so valuable is because of its large bacterial population (as much as 30% of its mass). Manure is also very high in nitrogen, acting as a nitrogen activator in the pile. When manure is added directly to the soil, it generally releases highly soluble nitrates that behave similarly to chemical fertilizers, as well as ammonia, which can burn plant roots and interfere with seed germination.

When composted first, manure's imbalances can be rectified and the manure itself can be digested and used more quickly than if added alone. It is best if fresh manure can be allowed to weather for a week before adding it to the compost pile.

Chicken manure is the "hottest" of all the animal manures, meaning that it is the richest in nitrogen, phosphorus, and potassium. Manure from horses, sheep, and rabbits are also considered hot. Horse manure is often mixed with woody stable bedding or straw, which gives it a good mix of carbon and nitrogen. Horse manure, however, is more likely than others to contain weed seeds.

Cattle manure is moister and less concentrated than that of other large animals. It is considered a cold manure, but it is especially rich in beneficial microorganisms. Feces from meat eating animals, such as dogs and cats, should not be added to the pile. Their manures can contain pathogens harmful to children and pregnant women.

## Meat



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Meat is slow to break down, attracts pests, and inhibits the biochemical processes necessary to successful composting. It should never be added to the compost pile.

## Newspaper

To use newspaper or other types of paper successfully, shred it as finely as possible. Matted layers of paper will slow decomposition. Because it is almost pure cellulose, paper should be mixed thoroughly with green materials. Many newspapers are now using soy-based inks.

Shredded newspaper also makes an excellent bedding material for farm animals.

Other types of paper can also be composted, but do not use glossy paper (such as in magazines), photographs, waxed paper, or other paper with a high amount of colored ink.

## Nut Shells

Although slow to break down, nut shells are high in carbon and help to aerate the pile.

## Oak Leaves

Oak leaves are slightly acidic, but overall are a wonderful addition to the compost pile. They are relatively slow to breakdown.

## Oleander Leaves

Oleander leaves are one of the most toxic plants known to humans. However, the leaves must be ingested to be dangerous. Therefore, oleander leaves should not be used in mulch or compost which will be spread in vegetable gardens, or anywhere that animals or children might ingest them. (Horses can die from ingesting just a small amount of oleander.) The molecule which poses the danger in oleander is very large, so there is no concern that it could be taken up by other plants in the landscape.

## Pet Feces

There is too great a risk of disease and parasite transmission if the feces of meat eating pets is added to the compost pile. Cat droppings are especially hazardous to pregnant women. Kitty litter should also not be added. Aquarium water, however, contains algae and organic

matter that can be beneficial to plants, so can be added to the pile. Dog and cat feces can be buried in the landscape around ornamental plants — NEVER in food growing areas.

## **Pine Needles**

Pine needles are compostable, although they will break down rather slowly because of their thick outer waxy coating. Pine needles are also acidic in nature, and should not be used in large quantities, unless compost for acid-loving plants is desired. Pine needles can be used as a mulch around acid-loving plants such as roses and azaleas.

## **Plants Treated with Herbicides**

Many different types of chemicals are used in herbicides. Some become harmless very quickly, and some break down after thorough composting; however, some are extremely long-lived and will probably survive most composting processes. Therefore, it is best to avoid adding plants that have been treated with herbicides to the compost pile, especially plants that have been recently treated.

## **Sawdust**

The sawdust of deciduous, hardwood trees is best for making compost. Cedar can have inhibitory substances and the sawdust from pressure-treated, pressed wood, painted wood, or plywood contains various toxic materials, so these should also be avoided due to the high oil content. In the compost pile, sawdust is valuable as a carbon source, as a bulking agent, and in allowing good air penetration in the pile. Keep in mind when using sawdust it is very high in carbon and very low in nitrogen. Sawdust also makes a great mulch.

## **Seaweed**

Kelp and other types of seaweed can be very beneficial to the compost pile (always rinse first). Avoid long vine-like varieties. Use wet, fresh seaweed quickly because it deteriorates rapidly. Bacteria feast on the leaves, which makes seaweed an excellent compost pile activator. It also adds many types of micronutrients and are a boon to plants and soil health.

## **Sod**

Sod stripped from a lawn requires special, covered compost piles. Pile the fresh cut sod, roots up, grass down, in a square or rectangle up to 3 feet high. Make sure each layer is thoroughly wet, and cover



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the entire pile (including the sides) with black plastic or a tarp. Sod piles may take one to three years to completely decompose. Decomposition of sod piles can be shortened to as little as six months by sprinkling each layer with a high-nitrogen fertilizer, such as cottonseed meal or ammonium sulfate. Small pieces of sod can be chopped and added to a regular compost pile.

## Straw

Although straw will add few nutrients to the compost heap, it is an excellent source of carbon and is unsurpassed in aerating the pile. It can be slow to break down, so be sure to add plenty of high nitrogen materials and keep the pile moist. Straw can also be used as a mulch, as long as there are no seeds present.

## Weeds

It is best to compost weeds before they go to seed. Some seeds survive high temperatures, and even a well made hot compost pile may not reach these temperatures uniformly. If you do add weeds with seeds, put them in the center of your pile-where the temperature is highest-and make sure you have plenty of greens in the pile to ensure sufficient heating.

Plants that reproduce through underground stems of rhizomes, such as Bermuda, morning glory, and ivy roots, should be thoroughly dried in the sun before adding to the compost pile.

## Wood Ashes

Wood ash is a strong alkalinizing agent. Soils in Placer County tend to be acid. Use wood ash in moderation on the compost pile. Wood ash does add potash to the pile.

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