



*Composting in Schools*

# Frequently Asked Questions

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# Frequently Asked Questions

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## 1. How long does it take?

- The answer to this question ranges widely, depending on the process used, the compost ingredients, and how the system is managed. Perhaps most importantly, it depends on the intended use of the compost: many ingredients can be used as a mulch immediately, while it may take many months to achieve the stability required for germination of sensitive seedlings. Here we assume the compost will be incorporated in soil for general garden use.
- Under optimum conditions, thermophilic composting with frequent mixing or turning can produce useable compost within a month or two. A worm bin requires three to six months to turn food scraps to compost, and an unmanaged leaf pile may take more than a year to break down.
- In general, it is best to let compost "cure" for several months even after it appears finished. During this additional time, degradation occurs at a slower rate, resulting in a more chemically stable end product.

## 2. How can you tell when compost is finished?

- Finished compost will no longer heat up, even after mixing. The initial ingredients are no longer recognizable, and what is left is an earthsmelling substance similar to a rich organic soil.

## 3. Is newspaper safe to compost? Are the inks toxic?

- Newspaper is safe to compost, but it breaks down quite slowly because of its high lignin content. (Lignin is a substance found in the woody cell walls of plants, and it is highly resistant to decomposition).
- Most newspapers today use water or soy-based inks. Although these may contain small amounts of toxic compounds, the trace levels are not of significant toxicological concern. Some caution should still be used with glossy magazines, which sometimes use heavy metal based inks to produce vivid colors.

## 4. Which kinds of pet wastes can safely be composted?

- Wastes from classroom critters such as guinea pigs, rabbits, hamsters, or gerbils can be safely composted, along with the wood or paper shavings used in their cages. Droppings from dogs or cats should be avoided, though, because they may contain parasites or disease organisms harmful to humans.

## 5. Are inoculants, activators, or other additives a good idea?

- Commercial inoculants are made up of dormant microorganisms. Although composting depends on microorganisms, you do not need to purchase them. They are already present, on the leaves, food scraps, and other materials you are composting. If you wish to augment these populations, addition of soil or finished compost will work as well as commercial inoculants.
- Activators are designed to speed up the compost process by providing sugar or nitrogen to trigger rapid microbial growth. Normally an activator is not needed. If your mixture of materials to be composted has a C:N ratio higher than about 30:1, however, then addition of nitrogen will speed up the composting process.
- Lime is sometimes added to compost piles but is not necessary unless the initial pH is lower than about 5. If the compost process becomes anaerobic, the organic acids that are produced may lower the pH of the mixture. Aerating the system to return it to aerobic conditions will also cause the pH to return to a near-neutral range.

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## 6. Can compost harm plants?

- In general, compost is good for plants -- it helps build soil structure, retains moisture, increases soil organic matter, and provides a slow release of nutrients important for plant growth. If you use compost that has not adequately matured, however, it may cause chemical burns on plants or compete with them for use of soil nitrogen.
- Fresh compost should not be used for starting sensitive seedlings such as tomatoes and peppers because they may succumb to damping-off disease. These seedlings should be started using a sterilized potting mixture.

## 7. If you use compost, do you still need fertilizer?

- That depends on the nutrient requirements of your plants and the nutrient status of your soil. Compost does provide needed plant nutrients, but this occurs in small doses gradually over the course of the growing season. If your soil is particularly barren, or you are growing a crop that needs a burst of nitrogen soon after planting, then you may want to supplement with other types of fertilizer. Your best bet is to have the soil tested, then make your decision based on the test results and your intended plantings.

## 8. How do you keep rats away?

- The best way to keep rodents and other animal pests from becoming a problem is to avoid creating conditions that will attract them. If you add meat or dairy products, or leave cooked foods such as pizza crusts lying around, you will be inviting rodents to a feast. On the other hand, if you stick to composting vegetation such as leaves and grass clippings, you will minimize your chance of hosting rodents. Adding fruit and vegetable scraps is safe as long as they are buried in the other compost ingredients and the system heats up so that the food wastes are quickly broken down.

## 9. What about flies?

- Fruit flies or house flies can become a problem for indoor composters unless preventative steps are taken. If food scraps are composted, they should not be left exposed to the air. Instead, they should be covered by a layer of brown material such as soil, old compost, leaves, or wood shavings. In worm bins, food scraps should be buried in the bedding rather than placed on the surface.
- If fruit flies do become a problem, you can make a simple but highly effective trap. Just take a soda bottle and remove the lid. Cut the bottle in half, and pour cider vinegar into the bottom half to a depth of about 2 centimeters. Then invert the top half of the bottle into the bottom half, forming a funnel leading into the bottle. Fruit flies will be attracted to the vinegar and will get trapped or drowned in bottle.

## 10. Will there be leachate?

- Composting in containers does produce leachate, a rich organic soup called "compost tea" that is prized by gardeners. It is best to design your bioreactors to catch the leachate so that it will not make a mess or cause odor or fly problems. In the 2-can bioreactor, leachate is trapped by absorbant material in the outer can. The soda bottle bioreactors hold the leachate in the bottom of the bottle unless you make holes down low enough so that it drains into a dish or tray underneath.

## 11. Will it smell bad?

- As long as your compost has enough airflow so that it remains aerobic, there may be some odor but it shouldn't be objectionable. If you do get foul-smelling odors, you should add more wood chips or other bulking agent, and mix the system to re-aerate it. Ammonia odors may develop if you compost materials that are high in nitrogen, such as fresh grass clippings. To prevent this, you can calculate the appropriate mixture of materials to achieve the right carbon-to-nitrogen ratio.

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- If you are using soda bottle bioreactors in a classroom, you can vent them through a window using flexible tubing to prevent any possibility of odor problems.

**12. Will composting break down pesticide residues?**

- Yes -- the microbial decomposition that occurs during composting breaks down the types of pesticides currently on the market, and composting is sometimes used to degrade pesticide residues commercially. (Non-biodegradable pesticides such as DDT and chlordane are no longer allowed to be sold in the U.S.).