
How to Make Compost for the
EDIBLE GARDEN
Ag for Life

How to Make Compost for the Edible Garden

Compost is made up of organic material that has been aerobically decomposed. (There are also some anaerobic systems, such as the Bokashi method). The process of decomposition, aided by living organisms called microbes, generates an end product that contains nutrients for plants, as well as helps to improve soil structure, and accordingly, reduces soil compaction and increases its water holding capacity. If you plan to use compost primarily as fertilizer, you'll find that unlike many synthetic fertilizers, it is slow-acting and possesses a relatively low concentration of nutrients. This prevents excess salts from leaching out into the soil. (Bear in mind that vermicompost, which uses worms to aid in the decomposition process, contains a higher concentration of nutrients than regular compost).

Composting is a useful way to divert some of those kitchen wastes and plant material out of the landfill and with minimal effort and expense (the microbes do all the work!) This creates an amendment that can, in its dual role of conditioner and fertilizer, boost soil health.

What Type of Composter Should I Construct?

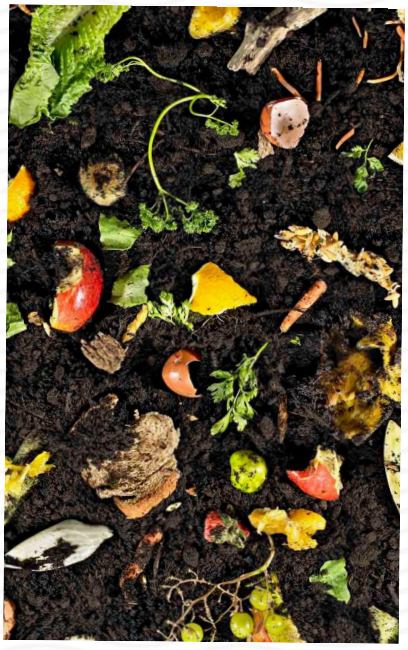
The easiest way to compost is to make a cold compost pile. This means you assign one corner of the yard (one that is far away from view and not near a neighbouring property) to pile your wastes such as food scraps and leaves. This pile sits for years and you don't have to do anything to it other than add materials to it. Over several months or even years, the microbes in the pile will have helped decompose the materials at the base of the pile. You can excavate the compost from the bottom of the pile, sift it, then use it. The cycle begins anew, as you continue to add materials to the pile and it keeps slowly producing compost. The whole no-fuss quality of cold composting is appealing but the time factor, the appearance, and the fact that it can attract wildlife and pests may discourage some gardeners. As well, if you generate a lot of food and garden wastes, an extremely tall compost pile is very inefficient. You may find you need more than one to handle the volume, and over time, this can lead to unsightly piles of what appears to be garbage in your yard.

Many gardeners choose to make hot compost instead. With this method, materials are placed in a bin, and through microbial activity and the addition of air and water, as well as periodic turning, compost is rapidly generated under very hot temperatures. Three classes of microbes work on the compost. Psychrophiles start things off when the compost is still fairly cold (around 12 to 21°C). As they eat, they release carbon dioxide, water, and a fairly significant amount of energy in the form of heat. This heat begins to warm up the pile. When the pile hits temperatures of between 21 and 32°C, microbes called mesophiles take over the work, followed by the thermophiles, which can handle the most heat. Hot compost piles usually hover around 54°C in the home garden. If you're interested in checking the temperature of your compost pile, compost thermometers are available for purchase at garden centres.

What Type of Composter Should I Construct? (Continued)

Compost bins are usually constructed from wood or plastic. You can purchase commercially-manufactured bins, or do-it-yourself by upcycling untreated wooden pallets or crates. Wooden frames with wire mesh stretched around them are easy and durable (although they don't necessarily keep mice and voles away). Many gardeners will use a two-bin or even a three-bin system to keep their compost going through a continuous cycle. This also helps deal with large volumes of food scraps or plant wastes. Some compost bins will have lids to keep pests away. Tumbler-style bins are mounted in a frame so that you can easily turn them with a cranking handle, instead of the more laborious task of manually turning them with a garden fork or other implement. Your preferences regarding aesthetics and ease of use, as well as your budget, will help you select the right compost bin. Whatever style of compost bin you choose, ensure that it has excellent air flow. This will prevent issues such as mould.

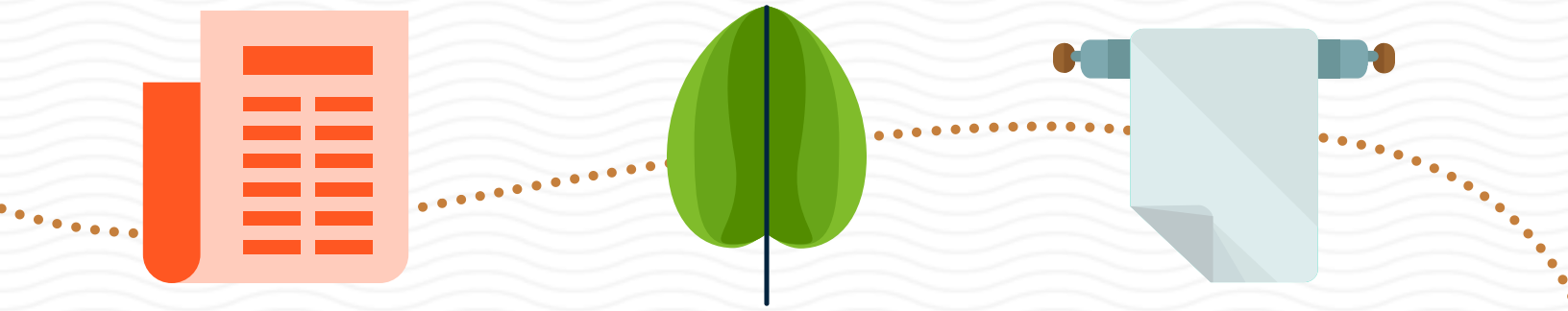
Don't place your compost bins up against the house, as they will generate heat and moisture which may be unfavourable for the siding. As well, if pests get into the bins, they may get into the house as well. Your bins should be located relatively close to a water source, so that you can add moisture when required. The bins need plenty of airflow, so they will need to be sited where they will not be blocked off on any sides. As well, if you have a tumbler-style composter, you will need room for the drum to turn without obstruction. Likewise, if you need to turn your compost, place your bins in an area that allows you full access to them. You will also need room to load wastes and unload the finished product.



What types of things can be added to a compost bin?

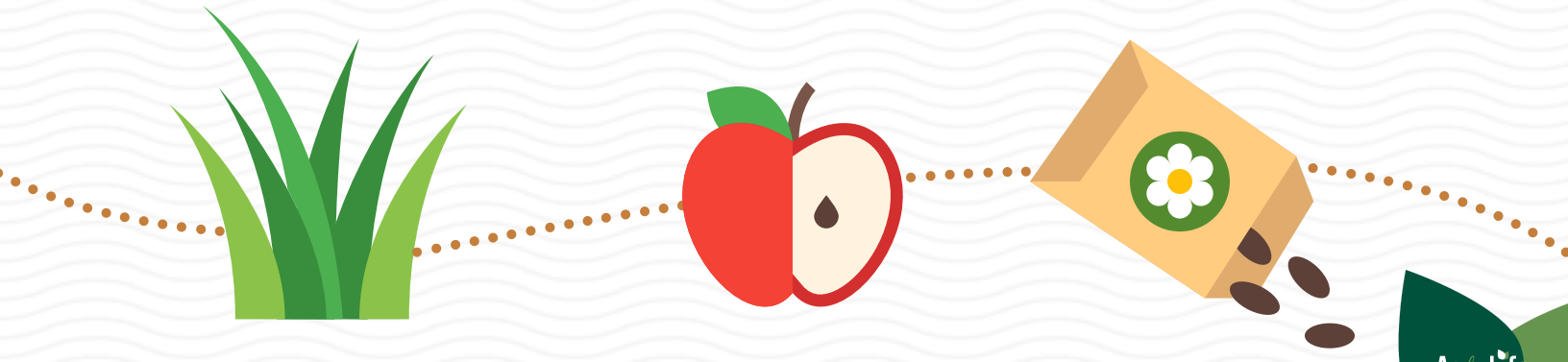
Carbon:

- Leaves (chop them into pieces to speed up decomposition)
- Twigs, branches, wood chips (chop large pieces into smaller ones, and bear in mind that woody materials take a long time to decompose)
- Newspaper
- Cardboard
- Sawdust
- Paper towels



Nitrogen:

- Grass clippings from your lawn
- Food scraps such as vegetable and fruit peels and pulp, coffee grounds, eggshells
- Non-woody plant trimmings (such as weeds without seed heads)



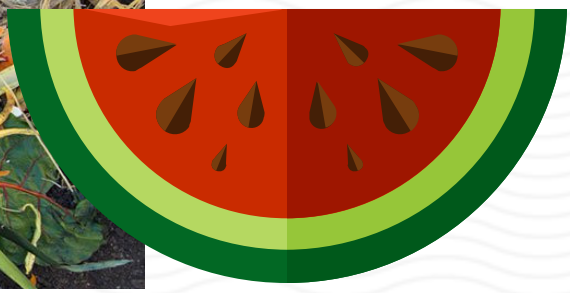
Do not add meat and dairy products or cooking oils to your compost bin. Your system may not get hot enough to properly decompose these wastes quickly and you'll end up attracting pests or creating other issues such as mould. The smell alone will be enough to send you and your neighbours packing. Do not compost the feces of carnivorous animals such as dogs and cats as a home compost system likely cannot reach the temperatures needed to deal with the pathogens involved.

The key to successful composting is maintaining an appropriate C:N ratio – the proportion of carbon-rich materials to nitrogen-rich materials. For example, wood bark is a carbon material with a high C:N ratio – approximately 130:1. Vegetable peels, on the other hand, are high in nitrogen and have a low C:N ratio, of about 13:1 (remember, these ratios are not measures of volume). The microbes in compost work most efficiently and effectively when the C:N ratio hovers between 15:1 and 30:1. That means you won't want to overload your pile with too much on either extreme – for example, don't put too much wood on the pile without balancing it with sufficient amounts of a nitrogen-based material such as food scraps.

If your compost still has a few chunks of material that hasn't fully decomposed in it when you go to use it, you can rub it through a compost sifter (or screen), a frame that holds a mesh sieve. This will separate the pieces that still need decomposing from the fine compost. You can purchase compost sifters or build one yourself.

Troubleshooting your Compost Bins

If you notice weird odours being emitted by your compost bin, things are likely not going well in there. A strong ammonia smell may mean that the contents are too high in nitrogen – you may have too many food scraps. Add some carbon-rich materials, such as dried leaves. If the compost pile doesn't seem to be breaking down and it is cold, add more nitrogen-based materials, and a bit of water if it seems dry. Turn the pile more frequently. If the pile is way too hot (over 65°C), reduce the size of the pile and turn it more often, as it needs more air circulation.



Get rid of insect pests and rodents by turning your compost regularly. The disturbance will likely cause them to leave. If you notice that your compost is attracting a large number of animal pests, your food scraps may be too close to the surface and are serving as easy meals. Bury your food scraps deep into the pile.

Finished compost should have a rich brown colour and be light and fluffy. It should have an earthy smell, not a bad one. It should not be waterlogged or mouldy.

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