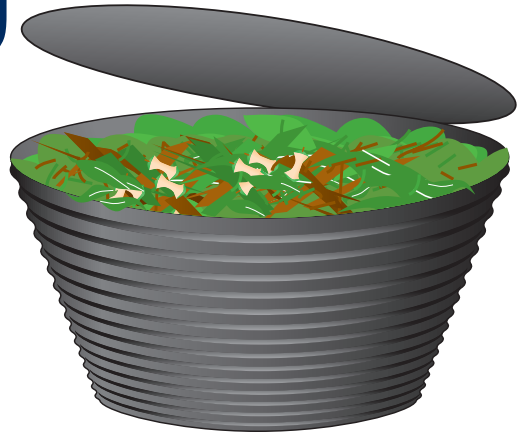


Composting

When organic materials, like plants, fruits and vegetables, decompose in the earth, the vital nutrients contained within them are unlocked and able to be recycled back into the soil to be used again by other growing organisms. Today, home composting is encouraged as a way to reduce the amount of waste that is buried at the landfill. This is because half of the waste we throw away each week is organic material, which is food and garden waste.



How to compost

Compost can be formed in either a heap or bin, depending on the amount of material for composting, and the needs and size of your garden.

A heap is suitable for gardeners with large gardens and large quantities of organic waste. To ensure your heap matures in the fastest possible time, its dimensions should be at least one cubic metre, sufficient to ensure a hot temperature is developed. The heap may be enclosed using bricks or timber. Leave an access area or workspace at the front of the heap for turning the compost. Cover it to retain heat and moisture, and provide protection from rain.

The other option is a compost bin, which is often better for smaller, suburban gardens. Plastic bins, metal tumblers and plastic tumblers can be purchased from nurseries, hardware stores and local Councils. Alternatively, you can make one yourself using a 200-litre drum or pieces of untreated timber. A compost bin should be open at the top and bottom. The top needs a tight-fitting lid. The bottom end is placed in direct contact with the soil to allow earthworms, and other composting organisms, to enter and undertake the decomposition process. A compost heap would also be built directly on top of the soil.

You will need to consider the location of your compost. Pick a spot in your yard that is at least partially shaded, protected against heavy rain and at least 2 feet from a structure like your house or a fence. It should be convenient for adding materials, have access to water and possess good drainage.

Good compost is made by always adding a balance of organic material types. Some organic materials decompose rapidly and have a high moisture content. They are called 'greens' and are high in nitrogen, and consist of items such as fruit and vegetable scraps, green grass clippings and garden prunings. On the other hand, some organic materials decompose slowly and have low moisture levels. They are called 'browns' and are high in carbon, and consist of dried leaves, hay, dried grass clippings, and twigs. These different organic materials can be added in any order, but must be added in equal proportions.

Once you have a mixture of materials, cover your compost food with a layer of soil, and add some water (just to dampen, not to drown!). Cover the compost heap with a hessian sack or an old piece of carpet, and if you are using a compost bin, replace the lid to keep the heat in and speed up the rotting process.

To increase the decomposition speed and effectiveness of your compost, turn it with a garden shovel or fork. The more frequently the material is turned, the faster it will decompose. A compost bin is an anaerobic system (i.e. the conditions lack the presence of oxygen), so it needs regular aeration and should be turned every week. A compost heap is an aerobic system (i.e. oxygen is present in these conditions), so only needs to be turned every two weeks or so.

Care should be taken to make sure that all material is turned into the inner, hottest part of the heap where weed seeds and pathogens are destroyed. If the heap is turned regularly, the compost should be ready for use in a month or two. It is then time to dig out your well-decomposed compost and use it in your garden.

Composting with ADAM

There are four principles that will ensure success with your compost, referred to as the ADAM principle:

Aliveness — Compost is a living environment. The soil on which your compost is built is alive with organisms that will move in and help with the decomposition of your organic waste items.

Diversity — To achieve healthy compost you must feed your compost bin or heap a well-balanced and diverse diet. That means equal amounts of both 'green' and 'brown' organic materials to provide balanced nitrogen and carbon levels.

Aeration — Turn the pile over every couple of weeks, or every 4–6 days if using a compost bin. Aeration helps to speed up the decomposition process, keep nasty odours at bay, and minimise the invasion of unwanted pests in your compost bin or heap.

Moisture — Keep the compost just damp. Over-watering will ruin your compost. Moisture is also very important in the decomposition process, so dampen down your compost every week or as required. Remember 'green' organic items have high moisture levels, and so will increase the moisture level of your compost.

What makes it rot?

Organisms that live in the compost break down organic waste. Such organisms include:

1. **Bacteria** – microorganisms grow and begin the rotting process on organic materials, which softens them and breaks them up so that they may be eaten up by larger organisms of the soil.
2. **Fungi** – various species of fungi also assist in the rotting process to enable organic materials to be decomposed and eaten up. Fungi also help to break down the cellulose and lignin inside woody matter.
3. **Insects, mites and nematodes** – macro organisms, the ones you can see, such as spiders, flies, slaters, earwigs, centipedes, beetles, etc., that nibble away on the decomposing organic materials and grind them up into soil.
4. **Earthworms** – earthworms are great recyclers of decomposing matter. They also nibble away on the decomposing organic materials, and grind it up into soil in their long narrow stomachs. Their castings are nutrient rich and improve soil fertility and structure.

The action of all these organisms, combined with the right type of organic waste, the production of high temperatures, sustained moisture levels, and the presence of oxygen, all work together to break down the materials, turning them into a nutrient rich, soil additive.

What makes good rot?

The organisms in your bin love to eat the following.

Green organic materials, which are full of nitrogen:

- Leaves (green prunings)
- Grass (green clippings)
- Cow, horse or chicken manure
- Food scraps
- Coffee grounds
- Tea bags
- Hair from your bush and comb
- Seaweed

Brown organic materials, which are full of carbon:

- Dried leaves and dried grass clippings
- Sawdust (not treated pine)
- Wood shavings (not treated pine)
- Hay and straw
- Vacuum cleaner dust
- Shredded paper
- Newspaper
- Egg shells

What to avoid

There are many organic waste items that may encourage vermin such as rats, flies and cockroaches, and will smell when they decompose.

Some items to avoid putting in your compost heap/bin include:

- Fats and oils
- Meat products
- Dairy products
- Cat or dog faeces
- Man-made materials such as plastic, steel, aluminium and glass

How can compost material be re-used?

Compost can be used on any garden to increase its fertility and promote growth. You simply dig the compost into gardens to a depth of about 5cm. It can be applied to the surface of garden beds as mulch or used as top dressing for lawns. When using compost on the garden, take care to keep it away from roots and stems to avoid burning. No single chemical fertilizer or animal manure can match the goodness of nutrient-rich, homemade compost. It boosts nutrient levels in the soil, helps control diseases in garden wastes, saves trips to the tip and backyard burning, and reduces garbage output significantly. Healthy, chemical-free flowers, fruit and vegetables are a bonus.

Troubleshooting guide

You need to make sure you have the right balance of moisture, heat, air, and decomposing materials to have a successful compost environment. If a problem does occur and you think you've found a solution, don't stop there. Continue to give your bin daily check-ups until you see or, in many cases, smell an improvement. This may take some time to perfect so you may have to do a little problem solving when you first start. You may encounter some of the common problems listed below.

Problem	Causes	Solution
Taking too long to break down	Too Dry	Add water
	Not the right mix of greens and browns	Add equal amounts of vegetable scraps or fresh lawns clippings (greens), with fallen leaves or straw (browns)
	Not enough air	Turn more Add more compost worms Punch holes in your bin Add in some piping
Smelly	Too Wet	See below
	To acidic	Add wood ash or dolomite to neutralise the heap
	Insufficient air	Turn more regularly Rebuild with some dry materials
Flies	Will probably be vinegar flies that are harmless	Cover organic waste with a layer of soil.
	If they are house flies or blow flies they are being attracted by meat or dairy products	Avoid meat or dairy products
Too wet	Too much water has been added	Improve drainage under the heap
	Organic waste is too moist	Mix in some dry 'brown' materials – shredded newspaper, hay, etc
Rats or mice	Attracted to uncovered food and/or warmth	Cover each organic layer with soil and place the bin on a layer of fine mesh
A lot of slaters or ants	Heaps is too dry	Add water or moist materials
Spiders under the lid	Attracted by the invertebrates, most likely small flies	Place a handle on the lid
		Check for spiders Cover each organic layer with soil