

# Composting at home



City of  
**West Torrens**

Between the City and the Sea



## Compost bin rebate

West Torrens residents can use the food waste recycling voucher in the 'Four easy ways to recycle your food scraps' booklet available from Council for a rebate of up to 50 per cent (up to \$50) on a new compost bin, whether purchased through Council or privately.

The voucher offer is limited to one per household while funds are available.



### Sources:

Home Composting: Environmental Educator Fact Sheet, Department of Environment and Conservation, Waste Authority, WA.

Compost Revolution, [compostrevolution.com](http://compostrevolution.com)

Composting and Worm Farming Manual: Christopher Day,  
Every Day Sustainable Living

How Composting Works, [howstuffworks.com](http://howstuffworks.com)

Alan Shepard

Images courtesy of WA Waste Authority.

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# Composting

Composting is simply a process by which the natural decomposition of organic materials such as garden waste and kitchen scraps are converted into a soil-enriching substance called humus. It is easy to do, cheap and provides many benefits.

## Composting - the benefits

- Improves soil structure, aeration and health by the addition of vital organic matter and nutrients.
- Increases water retention capacity of soil which reduces water use.
- Saves money spent on fertilisers and mulch.
- Reduces the cost of waste disposal to the community.
- Reduces greenhouse gases produced by material rotting in landfill.
- Reduces landfill



## What to compost

Most things that once grew, or are made from something that once grew can be composted.

Materials that are suitable fall into two categories:

- Nitrogen rich (usually 'moist/green' materials).  
These provide energy for the micro-organisms in the compost to live and grow.
- Carbon rich (usually 'dry/brown' materials).  
These provide structure to the compost.

**Nitrogen-rich (moist/green) materials include:**

- Food scraps (fruit, vegetable matter).
- Bread, cake, pasta and cereals.



- Fresh grass clippings.
- Manures (cow, horse, sheep, chicken, pigeon).
- Fresh leaves.
- Hair (pet and human).
- Plant material from the garden (cut up, non woody).

### **Carbon-rich (Dry/Brown) materials include:**

- Paper (tissues, paper towel, shredded paper/newspaper).
- Cardboard (heavily-soiled pizza boxes, ripped egg cartons).
- Dry leaves and grass clippings.
- Tea bags and coffee grounds.
- Egg shells.
- Hay/straw.
- Old potting mix.
- Wool.
- Sawdust.

## **What not to compost**

- Inorganic material such as soft plastic (cling wrap and bags), bread ties.
- Meat and seafood.
- Dairy products.
- Oils.
- Twigs and woody material.
- Invasive or bulbous weeds (couch grass, sour sobs)\*
- Dog and cat faeces (and other meat-eating animals)\*



\*Home composting generally does not reach the temperature needed (over 55°C) for the period of time needed to kill weed seeds or harmful micro-organisms.

Faeces from pets that are carnivores are not suitable. Items that are not suitable for home composting can be placed in the organics bin for commercial composting.

# Helpful hints

Successful compost needs:

## Air

Oxygen is essential: without it the compost will become anaerobic (low air), break down slowly and produce unpleasant odours. Regular turning of your compost (about once a fortnight) introduces air to the mix and will encourage aerobic bacteria to thrive and increase the speed of decomposition. In addition, firm or fibrous materials such as straw, pea straw and plant stems create air pockets for aerobic bacteria to thrive.

A compost aerator (metal turning screw) is ideal for compost bins. Alternatively a perforated PVC or drainage pipe inserted upright in the centre of your system will allow air to circulate.

## Diverse ingredients

The more diverse the organic material, both in type and size, the faster the material will decompose and the greater the nutrient content of the finished compost will be. Shredding paper, ripping cardboard, chopping food scraps and garden prunings will also assist the compost to break down faster.

## Nitrogen/Carbon in balance

Opinions vary as to the real quantities of nitrogen-rich (moist/green) material to carbon-rich (dry/brown) material needed: some suggest a ratio of one part moist/green to two parts dry/brown, others a ratio of 1:3 parts. Although there is no hard and fast rule, more brown organics than green are needed to keep your compost balanced.

## Moisture

Ideally the moisture content of your compost should be 40-60 per cent. It should feel like a damp, wrung-out sponge, not saturated and not crumble when squeezed. A dry mix will slow down the composting process and too much moisture may cause the compost to smell unpleasant.



## Aliveness

Compost systems need living organisms and creatures to break the materials down. These include worms, slaters, beetles, micro-organisms, bacteria and fungi. In every new compost heap add some 'starter', i.e. some compost from another heap which is in the process of breaking down. This will accelerate the process.

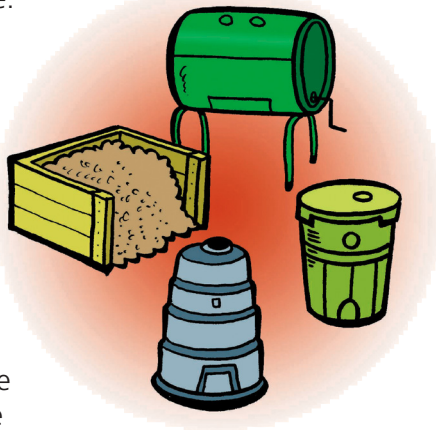
## Compost systems

A number of composting systems are available.

### Compost bin

Ideal for smaller gardens. They can be purchased from our Council or from hardware stores or nurseries. Having more than one bin allows material in one to mature while composting proceeds in another.

Effective composting should mean no rats or mice, but if you are concerned about them, rodent-proof your bin by placing a layer of fine chicken wire under the base and fold it up the sides a short distance. Alternatively, line the inside of the bin with chicken wire with at least 10cm in the soil.



### Compost tumbler

Ideal for smaller gardens. They comprise a barrel on a frame that can be rotated. With the increased aeration, they are often quicker to produce compost than other methods and are less likely to have rodent or fly problems as they are fully enclosed apart from the air vents.

### Bays

Useful for large quantities of material. Enclosures can be made from pallets, non-treated timber, wire mesh, bricks, concrete blocks or corrugated iron sheets. The best dimensions are between one to two metres wide and one metre high. Allow an access area at the front for turning the compost.

Bays can be simple one-compartment structures or multi-compartment, generally three-bay, structures. The more bays the better, however the choice depends on the effort, space and expense that you wish to devote to the process. Multi-bay composting allows you to store green, non-woody material waiting to be chopped up, to add new material to one bay, and to place finished compost in another.

# Choosing a location

Find a level, well-drained area of soil at a convenient location in your garden away from your neighbours. Contact with the soil allows drainage and access for insects and worms to start working on breaking down the contents.

A warm, sunny spot will help to increase the temperature in the compost and speed up the process. However the location should have some shade from the afternoon sun in summer so a spot next to a deciduous tree would be ideal.

## How to compost

### 1. Setting up your system

Whether you are using a bin or a bay, the best way to start the process is to arrange carbon-rich and nitrogen-rich materials in alternate layers. If you have some existing compost, start with a small quantity otherwise start with a good layer of carbon-rich materials for aeration and good drainage. Then place a thin layer of nitrogen-rich material. Repeat the addition of carbon-rich and nitrogen-rich material. This layering achieves a well-structured compost pile which is well aerated with good moisture content to promote rapid composting.



The layered process is the most convenient and suitable for the average home as it allows for the addition of food scraps or garden material as they become available. This method, however, takes longer to create usable compost and is sometimes referred to as 'cool' or 'slow' composting.

Alternatively, if you have a stockpile of materials, you could fill your compost bay or bin to the top with a mixture of carbon-rich and nitrogen-rich materials and not add any further materials. This method is referred to as 'hot' composting.

You may consider inserting a perforated PVC or drainage pipe upright in the centre of your system to allow air to circulate.

### 2. Maintaining your system

Check the moisture level regularly. It should feel like a damp, wrung-out sponge when squeezed. Water should be added if the composting material is too dry.



Mix or turn occasionally to increase aeration and prevent unpleasant odours: fortnightly should suffice. A compost screw is ideal. The insertion of a perforated PVC drainage pipe will minimise the need to turn for aeration.

When adding food scraps, place them at/near the middle of the bay/bin where the temperature is the highest and then cover them with dry material such as straw. This will help to prevent pests. A compost screw is an ideal way to create the space in the materials.

In summer in particular, cover the top layer in a bin with some damp newspaper or hessian bag before placing the lid on to prevent the materials from drying out. For a compost bay, cover with a piece of non-synthetic carpet or hessian bags to allow airflow, reduce pests and prevent the heap drying out.

### 3. Completed compost

The speed at which compost breaks down depends on the volume and diversity of materials, the temperature of the compost, the moisture content and aeration during the process. It will slow down in cool weather. Generally the process takes three - six months.

Don't add to the bay/bin when it is full to allow the material to break down and mature. Start adding material to an adjoining bay/bin.

Mature compost:

- Smells earthy - not sour or putrid.
- No longer heats up after being turned or watered.
- Has a dark brown colour and a texture which resembles soil.
- Is crumbly and doesn't have identifiable contents such as food or leaves.

If your compost does not appear crumbly this could be due to the weight of the layers of undecomposed material above compacting it and it may be quite damp. Fluff up the compost with a garden fork so that it will separate into a crumbly texture.

Home compost will be visibly different from commercially produced compost which has been screened to remove materials that are too large.



## 4. Using your compost (humus)

It is important to ensure that compost is ready to use as partially decomposed material can harm plants or slow their growth. This is due to the continuation of the decomposition process which depletes nitrogen in the soil and produces acids which damage roots. Material which has not decayed properly can also harbour pests and diseases.

Wear gloves, and if you touch the compost, make sure you wash your hands thoroughly. If the compost is dusty, wear a paper mask and moisten the contents to prevent dust generation.

Mix compost with soil on a 1:1 ratio to create a new garden bed or potting mix, or dig it in around existing plants. It can also be soaked in water in a container, strained and poured around plants using a watering can.

Compost is suitable for vegetables and exotics but is too rich for most native plants.

## Compost issues

### Smells

If the mix smells like sulphur (rotting eggs), it is too wet. Add carbon-rich, dry materials and turn the compost to aerate it.

If it smells like ammonia (acidic), it has too much nitrogen-rich material. Add carbon-rich, dry materials, turn the compost to aerate it and add gardeners lime or dolomite to balance the pH.

### Slimy compost

This is a sign of too much nitrogen-rich material which results in poor structure and inadequate aeration likely to produce odour. Add carbon-rich, dry materials and turn the compost to aerate it.

### Rodents

If they are common in your neighbourhood, they may be attracted to your compost.

- Ensure that you are putting food scraps in the middle and covering them with dry materials such as straw.

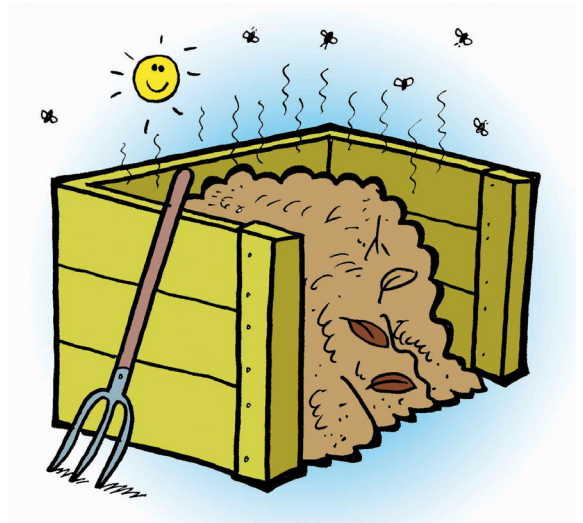


- Avoid foods rich in carbohydrates, sugars and meat.
- If using a bin, rat/mice-proof it as suggested on page 7 and check that the lid is secure and there are no gaps.

### **Pests: e.g. cockroaches, flies, ants**

Cockroaches and ants are attracted to warm, dry environments which are undisturbed. Moisten the materials or add nitrogen-rich materials and mix thoroughly, particularly around crevices/sides. If the compost is slightly acidic, add some gardeners lime or dolomite to neutralise the pH.

Most flies in compost are small vinegar flies which are harmless and indicate that the compost is working properly. If blowflies are attracted to the compost, it is usually because unsuitable materials, such as meat or dairy, have been added or they are attracted to the warmth. Make sure the lid on a bin fits securely or that a bay is well-covered.



### **Takes too long to break down**

If you are only adding small amounts, it will take longer to 'cook' or 'brew'. Increase the size of the bay or heap: it should be at least 1 cubic metre in size. Smaller quantities will not heat up as well and may dry out faster.

The bin/bay may not be creating the heat needed for active decomposition. The temperature can be raised by adding nitrogen-rich material such as cow or poultry manure.

Check the moisture content and, if it is too dry, add water. Turning the compost will add oxygen which will reinvigorate the composting process by increasing the temperature.

Stop adding new materials, leave it to mature, and start a new bin or heap.



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