



Dedicated to a better Brisbane

Compost and worm farms

Creating a clean and
sustainable Brisbane





Brisbane City Council is creating a clean and sustainable Brisbane for you and your family to enjoy for years to come. Learn how you can contribute using composting and worm farms at home.

Composting

What is compost?

Compost is the soil-like material that is created when plant and vegetable matter breaks down. Compost can be used as potting mix, soil enhancer or simply as mulch on the garden.

Why compost?

More than half of the average Brisbane household red bin is made up of kitchen scraps, garden waste and other recyclable material that ends up in landfill.

This material can easily be converted to nutrient-rich 'humus' through composting and used to improve soil quality.

Putting kitchen scraps and garden waste in the red bin causes problems at landfill sites and is also a waste of valuable organic resources. Composting is a simple process available to everyone, including those without a backyard. It's easy to fit into your daily routine and can be done using low-cost options, or with items you already have at home.

Composting creates rich nutrients for your garden.

Composting at home

There are a number of options for composting your kitchen scraps and garden waste at home.



Compost bin

Works well for those with a backyard.



Compost tumbler

Requires regular rotation.



Worm farm

Suitable for smaller spaces (e.g. balcony, garage, etc.)



Garden heap

For garden waste only. Gather a mix of grass clippings, dried leaves and prunings into a heap. Turn regularly with a shovel or garden fork.



Compost ingredients

A good compost mix is made up of the following ingredients:

- **nitrogen**
- **carbon**
- **air**
- **water**

Nitrogen products (greens)

- ✓ Fruit and vegetable scraps
- ✓ Fresh lawn clippings
- ✓ Tea leaves and coffee grounds
- ✓ Manure (e.g. from cows, chickens and ducks)
- ✓ Fresh garden prunings and old flowers

Carbon products (browns)

- ✓ Dried leaves and grass clippings
- ✓ End-of-season vegetable plants
- ✓ Wood chips
- ✓ Paper towel and cardboard
- ✓ Shredded paper

AVOID these ingredients

- ✗ Manure from carnivores (e.g. cats and dogs)
- ✗ Meat scraps
- ✗ Vegetable fats and oils
- ✗ Weeds that you don't want to sprout again in your garden
- ✗ Dead plants, or weeds and plants that have been sprayed with pesticides
- ✗ Dairy products
- ✗ Treated timber
- ✗ Plastic



Method



When you first set up your compost, collect enough ingredients to fill the compost bin halfway. Make sure you collect a wide range of materials, with a mix of carbon (browns) and nitrogen (greens).

1. Place a 5 to 10 cm layer of small twigs at the bottom of the bin for aeration and draining.
2. Add a layer of soil or finished compost to add microorganisms and get the decomposition process started. Other activating materials are comfrey, manure, coffee grounds or worm juice.
3. Add carbon (browns) and nitrogen (greens) materials in alternating layers, as shown in the image below.
4. Sprinkle layers with water to ensure all materials are damp.
5. Continue to add kitchen and garden scraps daily (or on a regular basis) ensuring there is a mix of carbon (browns) and nitrogen (greens) materials.
6. Turn materials regularly with a fork or compost screw and ensure materials remain damp. Add water if necessary.
7. Your compost is ready when the finished product resembles a rich, dark soil-like material.



Solving composting problems

PROBLEM	CAUSE	SOLUTION
Smelly compost	Not enough carbon	<ul style="list-style-type: none"> • Add carbon products
	Not enough air	<ul style="list-style-type: none"> • Turn more regularly to improve drainage and aeration • Add coarse material (e.g. twigs) to create air pockets
Slow to break down	Not enough nitrogen-rich ingredients	<ul style="list-style-type: none"> • Add more nitrogen ingredients (e.g. food scraps or fresh grass clippings)
	Not enough air	<ul style="list-style-type: none"> • Turn more regularly
	Compost too dry	<ul style="list-style-type: none"> • Add more water until compost is damp all the way through
Maggots or cockroaches (Both maggots and cockroaches are beneficial to the breakdown process, so if you can tolerate them, they will actually help your pile progress faster.)	Ingredients such as meats or fats added to pile	<ul style="list-style-type: none"> • Avoid adding meats or fats to pile • Cover each layer of food waste with carbon products • Turn more regularly to prevent cockroaches nesting
Mice or rats	Rodents can access compost	<ul style="list-style-type: none"> • Put fine wire mesh under the bin • Turn pile more regularly • Cover each layer of food waste with carbon products (see previous page)
	Excess bread or grains in the compost	<ul style="list-style-type: none"> • Avoid breads and grains
	Compost too dry	<ul style="list-style-type: none"> • Add more water until pile is damp all the way through



Splish, Splaw, Splash



Worm farms

Worm farming is an easy way to compost your kitchen waste and is a good solution for unit dwellers, singles or small families. A worm farm can be kept in any sized backyard, or even on a balcony as long as it is kept out of sunlight.

One worm farm can consume the kitchen waste created by a 2 to 3 person household.

Choosing a worm farm. To buy or build your own?

While many people choose to buy a worm farm online or from a gardening and hardware store, it's also easy to build your own.

Over the next few pages, learn how to build and set up a worm farm for its first use, as well as how to harvest the nutritious plant food created by worms from your kitchen scraps.



Example of a purchased worm farm.



Example of a homemade worm farm.

Make your own worm farm

You will need:

- tape
- 2 polystyrene boxes, such as broccoli boxes (one should have a lid)
- a piece of fly screen to fit in the bottom of the box
- a piece of hose or tubing about 5 cm long.



Materials needed



First box
(worms/food scraps tray)

Second box
(liquid collection tray)

Guide to box setup

Method:

1. Take your first box and use a screwdriver or pen to make air holes in the lid for airflow, and holes in the bottom for drainage. Make sure the holes are evenly spaced.
2. Take the second box and use a sharp knife to cut it in half horizontally. Remove the top half of the cut box as it is not needed for your homemade worm farm.
3. Place the remaining bottom half (of the box you just cut) so it fits neatly under your first box. This smaller lower box will act as the liquid collection tray for the worm tea generated by your worm farm, while the larger upper box will be the tray for your worms and food scraps.
4. Tape your upper and lower box sections together so they don't topple over easily.
5. Spread the fly screen in the bottom of the upper tray over the holes that you made in step one. This will stop the worms from falling through into the liquid collection tray below.
6. Make a hole at one end of the lower tray to insert the hose or tube for drainage. Place a container under the hose outlet to collect the liquid.

Congratulations, you've just built a worm farm!

Setting up a worm farm

1. For purchased worm farms, begin by lining the upper tray with a few sheets of damp cardboard. This step is not necessary for homemade worm farms as the fly screen prevents worms falling through the holes.
2. Add a 5 cm layer of bedding material to your upper tray such as coir peat (coconut fibre), shredded paper or mulch. Soak this material before you add it to your worm farm.
3. In the upper tray of your worm farm, add a minimum of 1,000 worms (at least 3 to 4 decent sized handfuls if getting them from a friend). Worms breed very quickly and double their population every 3 months, so don't be afraid to give worms away to other new worm farmers. Compost worms can also be bought online.
4. Place your worm farm in a cool, shaded area as worms don't like heat. Even a little sunlight can cook them! Worms enjoy a dark and moist environment, so keep a thick layer of damp cardboard, hessian or carpet on top of the food waste to encourage the worms to come to the surface to feed. Your worms will eventually eat it so replace it as necessary.





Feeding your worms

Feed your worms in the upper tray, underneath the layer of cardboard.

You can feed your worms every day or less frequently if feeding larger amounts. Worms will eat approximately half their body weight in food per day. On average, a standard worm farm can process the food scraps generated by 2 to 3 people.

If you produce a lot of food waste, you may need to use a compost bin to take care of the rest.

Compost worms eat almost all of the food scraps you would add to a compost heap. However, there are a few items that worms don't like eating.

AVOID these ingredients

- ✗ Citrus products such as orange and mandarin peel
- ✗ Onions
- ✗ Chilli and garlic
- ✗ Manure

The smaller the food scraps are when you add them, the faster the worms will get through them.

If you are going away on holidays, fill a separate tray with harder vegetables (such as celery, pumpkin, carrot and broccoli stems) and the worm farm will be fine to leave for up to a month.

Worm compost or castings can be used on your garden as fertiliser.

Harvesting the castings

As the worms consume the food in the upper tray, they produce castings that resemble dark soil.

If you have a homemade worm farm, exposing the castings to the sun will cause the worms to burrow away from the sunlight. You can then scrape off the top layer of castings for use.

For purchased worm farms, you can add another feed tray to your worm farm. Simply fill the new tray with worm food and relocate your thick layer of damp cardboard to the top of your new tray.

The worms will move up to the new tray when there is no food left in the first tray. This may take several months.

Once the worms have migrated to the new tray, you will be able to harvest your castings, which will be full of rich nutrients for your garden.

Using your finished compost or worm castings

Compost or castings can be used in a variety of ways, including:

- mixing an equal amount with garden soil to make potting mix
- digging it into the top 10 to 15 cm of soil in your garden beds before planting
- digging it into your established garden beds, taking care to keep it away from plant stems
- using it as a top dressing for your lawn.

Worm liquid

The liquid that accumulates in the bottom tray is known as 'worm tea'. You can use this liquid to replace the fertilisers you would normally use on your garden. The liquid should be diluted until it is the colour of weak tea (approximately 1:10 ratio), and can be used to feed your plants every 2 to 4 weeks.



Solving worm farm problems

PROBLEM	CAUSE	SOLUTION
Smelly	Too much food	<ul style="list-style-type: none">• Reduce food
	Not enough worms	<ul style="list-style-type: none">• Add worms
	Not enough oxygen	<ul style="list-style-type: none">• Aerate by stirring
	Too acidic	<ul style="list-style-type: none">• Add dolomite or garden lime and shredded paper or cardboard
Slow to break down	Food pieces too big	<ul style="list-style-type: none">• Cut food into smaller pieces
	Too much food	<ul style="list-style-type: none">• Reduce food
	Cold weather	<ul style="list-style-type: none">• Feed less during cold weather
	Other creatures attracted by food	
Vinegar flies around worm farm	Too much food	<ul style="list-style-type: none">• Reduce food
	Exposed food	<ul style="list-style-type: none">• Stir food through and cover with shredded paper or cardboard
Worms are dying	Too wet	<ul style="list-style-type: none">• Add shredded paper
	Too dry	<ul style="list-style-type: none">• Add water, place in shade
	Not enough food	<ul style="list-style-type: none">• Feed more often



Bokashi and other food waste recycling methods

Fermentation system (Bokashi bucket)

Sometimes called an 'indoor composter', this system uses a specially designed bucket and formulated mixture.

Once full, the fermentation process takes around 2 weeks.

To complete the composting process, the materials need to be buried or mixed in with a compost bin.



Worm towers

Worm towers are a great way to add nutrients to raised garden beds or plant pots. They consist of a piece of PVC pipe or a bucket without a base and a tight-fitting lid. Tubes are buried in the garden and fruit and vegetable scraps are placed inside the tube. While it's easy to build your own worm tower, there are also convenient, ready-made in-ground composting systems available for purchase.

You can either add worms to the tube or wait for the earthworms in your garden to find the nutrients.



Trench composting

Scraps are buried in a trench in the garden.



No dig gardening

Carbon and nitrogen material is layered directly onto the soil to create a raised garden for planting. To avoid vermin, minimise how much food material is used as your nitrogen component.



Mulch

Place a 10 cm layer of garden waste (such as dry leaves or prunings) and/or compost material around the base of your plants away from the stems. Mulching conserves water and provides nutrients to plants.





Compost rebate program

Council's compost rebate program makes it easier and more affordable to start composting at home.

The program provides eligible Brisbane residents with a rebate on the purchase of approved composting or food waste recycling equipment, helping households reduce organic waste and keep it out of landfill.

Eligible composting equipment includes:

- compost bin or compost tumbler
- compost aerator or compost drill
- worm farm or worm tower
- in-ground composter or worm farm
- Bokashi composting system.

Visit brisbane.qld.gov.au to check your eligibility, read the terms and conditions and find out more.



Attend a free composting workshop

Council regularly offers free compost and worm farm workshops at locations throughout Brisbane. Workshops are suited to people of all ages and are perfect for anyone wanting to learn how to compost at home.

Visit **brisbane.qld.gov.au** and search 'compost' to find out when upcoming workshops are scheduled.

Become a master composter

Are you an experienced composter who wants to learn more? Council offers free advanced level training courses in composting to those who are ready to take the next step on their composting journey.

Visit **brisbane.qld.gov.au** and search 'master composter' for further course information and dates.

Get involved in community composting

Brisbane has a large network of community composting hubs offering residents the opportunity to compost their food scraps. Getting involved with a nearby hub or starting your own hub in your unit complex or neighbourhood, is a great way to learn new skills, get to know your community and reduce waste sent to landfill.

To learn more about this program, visit **brisbane.qld.gov.au** and search 'community composting' or call Council on **07 3403 8888**.

Health and safety

The process of composting involves decomposing matter, therefore it is important you take some precautions to protect your health and safety.

The following tips are a guide to help you and your family compost safely at home.

- Always wear gloves when handling compost or worm farm castings and liquid.
- Wash hands thoroughly after handling compost or worm farm castings and liquid.
- Be mindful of sharp objects or sticks.
- Wear a mask when working with compost.
- If you injure yourself while working with compost, ensure you wash the area thoroughly. If symptoms such as itchiness or redness occur seek medical advice.
- Do not add pet faeces to your compost.
- If you see signs of rodent infestation, remove them and prevent them from returning.
- Dampen compost before turning it or using it in the garden to reduce particles becoming airborne.
- Wear closed-in shoes when handling tools such as shovels or forks.
- Rinse tools after using with compost. It's good practice to use separate tools for composting and gardening.





Translation help

If you need an interpreter to help with contacting Council, call the free Translating and Interpreting Service on **131 450**. State the language that you require and ask to contact Brisbane City Council on **07 3403 8888**.

Hindi:

यदि आप 131 450 पर फोन करके, 07 3403 8888

पर ब्रिसबैन सिटी काउंसिल से बात करने का आग्रह करें तो यह सूचना आपको हिन्दी में भी मिल सकती है।

Vietnamese:

Tin tức này có thể được dịch sang tiếng Việt bằng cách gọi số 131 450

và xin được nói chuyện với Hội Đồng Thành Phố Brisbane qua số 07 3403 8888.

Korean:

본 정보는 한국어로 번역 가능합니다. 한국어 번역을 원하시면 131 450

번으로 전화하시거나 브리스번 시청에 07 3403 8888 번으로 연락해 주십시오.

Traditional Chinese:

可透過致電 131 450 並要求與布里斯本市政廳（電話號碼：07 3403 8888）通話，將本資訊譯成中文。

Arabic:

يمكن ترجمة هذه المعلومات إلى اللغة العربية بالاتصال بالرقم 131 450 وطلب التحدث إلى مجلس مدينة بريزبن على الرقم 07 3403 8888.

Never miss bin day again!

Download the free 'Brisbane Bin and Recycling' app. This app includes a bin collection calendar, quick guide to recycling and maps.






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