

Worm farms

Fact sheet

How to build a worm farm

Feeding fruit and vegetable scraps to earthworms is a cheap and simple way of recycling food and garden waste. Worm castings make a great fertiliser for gardens. Worm farms are ideal for people living in flats or houses with small backyards and for dealing with lunch scraps at the office.

Worm farms use special earthworms called compost worms that thrive in the warm, rich, moist environment of the worm farm. The most common compost worms are Tiger Worms, Red Wigglers and Indian Blues and they can eat about half of their body weight in one day. The population in a well maintained worm farm doubles every two to three months.

What you'll need to build a simple worm farm

- A container for the worm farm. There are many types of suitable containers for keeping worms, from simple polystyrene or wooden boxes from the fruit shop to stackable worm farms and plastic worm factories, which can be bought. The container must have drainage holes. A polystyrene foam fruit box about 28 cm high with drainage holes box is ideal for a first worm farm.
- At least 2,000 compost worms. These worms will breed and multiply to about 8,000 worms in 6 months. There are many companies that sell compost worms.
- Three sheets of newspaper.
- A bucketful of 'bedding' material, which is a blend of partly decomposed compost, straw, grass clippings or shredded paper or leaf mould.
- A suitably sized loose cover, such as Hessian. If you do not have Hessian, you could use a sheet of cardboard or even a whole newspaper.
- Fruit and vegetable scraps from your kitchen.
- Two bricks to support the box.

To buy worms or worm farms, consult the Yellow Pages under 'Worm Farms'. Some local councils also sell worm farms.

Method

- 1) Choose a shady spot outdoors for your worm farm, preferably on a spot with good drainage. Tree roots or grass runners may invade open based worm farms seeking out water and nutrients. To avoid this problem, place the worm farm on a plastic sheet.
- 2) Line your container with a few sheets of dampened newspaper.
- 3) Half fill the container with bedding mix that is moist but not soggy. Bedding mix can consist of compost, grass clippings and shredded paper. It is important to provide a bedding mix that is not as fresh as the main food source. The best material for this is well-rotted compost, which is a great way to use compost produced from garden waste. Prop the container on bricks to make sure the drainage holes are clear.
- 4) Add the compost worms.
- 5) Cover the container with a layer of Hessian and water till moist but not wet.

- 6) Add fruit and vegetable scraps each week. Add a small amount of food in the first week and over 6 months gradually increase the amount. A worm farm with a surface area of one metre square and around 10,000 worms will eat about 10 kg of food waste each week. Worms will breed and grow in direct proportion to the feed provided and the size of the worm farm. It is best to feed your worms weekly. If uneaten food remains, then you know you have overfed the worms.
- 7) After feeding the worms, cover the food scraps with some compost or soil to avoid attracting vinegar flies.
- 8) Add water every few days or when necessary to prevent the worm farm from drying out. More water may need to be added on hot, windy days. It is important to keep the worm farm moist, as the worms may die if it dries out. However, the worm farm should not be soggy either. Remember, there is moisture in the food scraps.

After 6 months, it may be necessary to start another worm farm, either by starting the whole process in another container, or, if using a box with holes in the bottom, by placing the second box on top of the first and only putting food scraps in the top box. The worms will migrate through the holes to the top box to feed.

To collect the worms from an established worm farm, remove the castings and place on a piece of shade cloth held over a tray. The worms will migrate through the cloth onto the tray below.

The worm castings can be used in the garden in the same way as compost or mixed with commercial potting mixes to pot plants. However, do not remove all of the castings as the worms need a good bedding mix for breeding.

What to feed the worms

Worms will eat almost any type of vegetable and fruit scraps, coffee grindings, paper, leaves and even damp cardboard. Do not add onions or too much acidic food like oranges, mandarins or pineapples. Avoid materials contaminated with toxic chemicals, for example, sawdust from treated wood. Chop up food before adding and try to feed the worms a mix of materials.

Worm facts

- There are 350 species of earthworms in Australia and most of those found on farms and in gardens are introduced species. Compost worms are rare in the bush because the conditions are not suitable. Compost worms are a special type of earthworm. Compost worms are generally more active than normal earthworms. They thrive in the rich, moist and warm environment of a worm farm and can eat about half their body weight in one day.
- The population in a well maintained worm farm doubles every two to three months. Earthworms are hermaphrodites, which means each worm has female and male sex organs, so every worm can have babies. But reproduction can only occur between two mature worms of the same species.
- After mating, both earthworms form a capsule (or cocoon) containing up to 20 eggs. Even though each mature compost worm might mate every 7 to 10 days and produce about 4 to 20 capsules a week, only 3 of these capsules produce babies. Each capsule produces around 4 baby worms, which makes a total of 12 babies per adult per week.
- Babies hatch after about 30 days and are ready to breed 55 to 70 days later. Earthworm eggs can survive in very dry conditions for a long time. The babies usually hatch when the soil becomes moist.
- Although earthworms do not have eyes, they sense light as well as vibrations and temperature through special organs in their skin.
- You can also add compost worms to standard compost bins or heaps, as long as you do not let the contents of the bin get too hot.

Note

Using worm castings is like any other gardening activity, so wear your gardening gloves and wash hands thoroughly after handling materials.

The information on worm farms is varied. This page provides information on what is believed to be commonly accepted practice.