

Why have worm farms?

A worm farm is a self-contained composting system that doesn't generate heat, and retains most nutrients.

Worms' digestive systems impart a stable crumb structure

to worm compost, a nutrient-rich material made up of partially decomposed organic waste, bedding material and worm castings. A worm farm will not deal with all your organic waste - have a regular compost bin as well.



- it can be kept inside or outside all year round and if properly maintained, is odourless
- you don't need a lot of space, effort or knowledge
- the compost enriches soil fertility and improves texture
- worm juice is also useful for your garden
- they keep compostable waste out of landfills
- it conserves a valuable resource.



Using the compost and worm juice

Worm compost is nutrient rich.

It's an excellent material to:

- condition soil in your garden
- mix into the soil when transplanting to give plants a good start
- top-dress container plants
- include as an ingredient in potting mixes.



Use the worm juice! Dilute it with 10 parts water and spray it directly onto your garden in small amounts.

A guide to Worm Farming



For further information contact:
Waste and Environmental Solutions
Dunedin City Council
Phone 03 477 4000

www.dunedin.govt.nz/composting

www.sustainableliving.org.nz

03 477 4000
www.dunedin.govt.nz

Setting up your worm farm

If you follow some simple steps, your worm farm will provide your garden with a never-ending supply of nutrient-rich compost. It doesn't even take much effort.

Container

This can be plastic, wood or metal – recycle an old bath tub, wooden box, drawer or tyres. Wooden containers provide good insulation and absorb excess moisture. Plastic containers tend to keep the compost too wet.



- avoid treated wood as it may leach chemicals
- the container needs to be 20–40cm deep with a relatively large surface area (about 40 x 40 – 60cm) as worms like to work near the surface in the darkness
- the container needs a drainage hole to allow the worm juice – if using a bath put it on a slight angle with a small container under the plug hole
- keep a layer of damp newspaper over the worm/compost layer
- cover the bin to conserve moisture and provide a dark environment - carpet works well although outside containers may need a lid to keep scavengers out
- worms need air so ensure adequate aeration.

Location

Keep it near the house so it is easy to use. A sheltered spot that gets some sun is ideal - worms don't like it too hot. If the temperature drops below 10°C, either move it inside or insulate it with, for example old carpet.

Worms

Tiger Worms and Red Worms are the best as they thrive on moist organic materials such as food scraps, sometimes eating as much as their own weight per day. About 450g of worms can process up to 225g of food scraps a day (about quarter of an ice cream container).

For worm suppliers, check with your local garden centre or contact us on 03 477 4000.

Bedding

- worms need moist bedding to lay their eggs and live in
- three quarters fill the worm bin with damp bedding, such as finely shredded newspaper that has the consistency of a squeezed out sponge (moist, not soggy)
- newsprint is best, but cardboard, peat, straw, aged manure or compost are also good
- sawdust is not recommended due to its resin content
- some coarse sand or top soil (preferably silty loam) will provide the grit worms need to grind their food
- keep it completely covered with layers of damp newspaper.

Food

Worms will eat most kitchen scraps such as vegetable/fruit peelings, shredded paper, tea bags/leaves, coffee grounds/filters and crushed egg shells.



A monthly sprinkling of dolomite or garden lime will stop the worm farm getting too acidic. Acidic conditions are often indicated by an increase in the numbers of pot worms or nematode worms, tiny white worms which are usually present in small numbers.

- feed your worms regularly and keep the worm farm moist
- chopping or mincing food scraps before feeding speeds up the composting process
- add small amounts regularly
- crushed egg shells provide calcium which stimulates reproduction and activity
- bury food in the top layers of the bedding to avoid fruit and house flies – worms feed in this top layer
- if your worm farm smells, it may have been overfed, become too moist or the bedding may have become compacted, limiting air flow
- any added seeds may germinate, (tomatoes, pumpkins).

Avoid:

- acidic fruits such as oranges, lemons, grapefruit and kiwifruit
- garden waste – branches, leaves etc
- fats, cooking/salad oils and oily foods
- bread, dairy and meat scraps
- onions, garlic or hot spicy food scraps.

Harvesting your compost

Over about three to four months, the bedding, along with the food waste is converted into vermicast (worm castings), diminishing the quality of the worms' environment, as they have effectively fouled it with their manure.

For your worms' health and continued efficient, remove some or all of the compost. If you separate the worms out, watch for small worms and the tiny yellowish-pink oval cocoons, which may contain babies.

Changing your worms' bedding

Move the finished compost over to one side of the bin and place fresh bedding in the space created. Add food just to the new bedding and the worms will gradually move over and the compost can be removed. At this stage you may wish to start extra worm bins or give some worms to a friend.



Tip the entire contents of the bin onto a plastic sheet or a concreted area. Spread the compost out to form a layer about 100mm thick. The worms will burrow into the compost to avoid the light. Over about an hour, slowly remove the compost in layers, until eventually you have a mass of wriggling worms which can be added back into the new bedding. Be careful the worms don't dry out while you're doing this.

Use a hand fork to remove the top 150mm worm rich layer, and set it aside for seeding the next bin. Use the rest immediately or store it until you need it. Put the top layer back into the container with fresh bedding.