



Worm Farming

Composting with worms avoids the needless disposal of organic materials while enjoying the benefits of high quality compost. When cared for properly, worms process food quickly, transforming food wastes into nutrient-rich 'castings'. Worm castings are an excellent fertilizer additive for gardens or potted plants.³

Environmental Impact of Organic Waste

When you throw vegetable scraps and gardening waste into your garbage bin it costs you and the environment.

Methane is 24 times more damaging as a greenhouse gas than carbon dioxide. Scientists predict that climate change will impact on all our lives, especially in the areas of agriculture and human health.

Did you know?

- *Worms will eat most of your kitchen waste and turn it into a high-quality fertiliser.⁵*
- *If there are more than 1 million worms living in a hectare of soil, they could make 100 tonnes of castings. These same 1 million worms burrowing into a hectare of soil can create a drainage system equal to 1.2km of 15cm pipe.¹*
- **TIP!** *Keep a tight lid on the container you use to store food scraps before adding them to the bin. This will prevent flies from laying eggs in the scraps.⁴*

Landfill space

In many areas the land allocated to waste disposal is rapidly filling up. Approximately half of all household waste is organic. Most of this waste can be recycled through composting – turning waste materials into a rich soil supplement for use in your garden. By composting, not only can you help to reduce the amount of waste that goes into landfill but you can also help to reduce contamination and greenhouse gasses.

Benefits of worm farming

Worm composting is a method for recycling food waste into a rich, dark, earth-smelling soil conditioner. The great advantage of worm composting is that this can be done indoors and outdoors, allowing year round composting. It also provides apartment dwellers, schools and offices with a means of composting.²

Contamination

Much of the land used for waste disposal cannot be reused in the future because of contamination. This occurs when rubbish in landfills is compressed and the air is squeezed out. The rubbish breaks down anaerobically (without oxygen), which means that acids are produced. The acids affect other rubbish items, such as plastic, to create a toxic mix known as leachate. Leachate collects at the bottom of landfills where it then seeps into the ground water and from there into the waterways.

Using worm compost

Worm compost will provide nutrients for your plants and will help the soil hold moisture. It can be:

Feed your worms:

- Fruit (except citrus)
- Vegetables (except onions)
- Coffee grounds and filter
- Tea bags
- Crushed egg shells
- Leaves
- Hair
- Shredded paper and cardboard

- Mixed with potting soil and used for houseplants and patio containers.
- Used as mulch (spread in a layer on top of the soil) for potted plants.
- Finely sprinkled on lawns as a conditioner.
- Used directly in the garden around existing plants or dug into the soil.
- Made into liquid fertiliser by being mixed with water until it is the colour of weak tea².

Greenhouse gases

As organic waste decomposes in landfill it produces the greenhouse gases, methane and carbon dioxide. These greenhouse gases contribute to worldwide climate change. Most landfill gas is made up of 54% methane and 40% carbon dioxide.

Moisture drained from the worm farm's bottom crate is also a good liquid fertiliser, once diluted.

Clean up - inspiring and working with all Australians to clean up, fix up and conserve our environment.

How to start your own worm farm

You can buy worm farms from your local council or you can make your own by following these easy steps.

STEP 1. Chose a container to house your worms

You can buy a ready-made plastic worm farm or reuse old materials. Some ideas are foam boxes from your green grocer, old dresser drawers, a trunk or discarded barrel.

- Make holes in the bottom of one box to let liquid drain.
- Place the box containing holes over another box without holes and make a tap in the bottom box to let the liquid out.
- Put an upturned ice-cream container or a brick in the bottom box. This will help any worms that fall through the holes to climb up into the upper box. It will also form an island for the worms so they don't drown.⁵

STEP 2. Make the bedding

The best bedding materials are torn newspaper and cardboard, leaves, chopped up straw and other dead plants, seaweed, sawdust, compost and aged manure. Be sure to wet the bedding - it must be moist like a wrung out sponge, then fill about three-quarters of the upper box.

Include a couple of handfuls of sand or soil to provide necessary grit for the worm's digestion of food.

STEP 3. Add the worms

The best kind of earthworm to use is the redworm (a.k.a. red wiggler). These worms are incredible garbage eaters! They eat and expel their own weight every day, so even a small bin of redworms will yield large quantities of rich sweet-smelling compost.

When you add the worms they will quickly crawl down into the bedding as they don't like light.⁴

STEP 4. Add food waste

Remember:

- Don't add too much at once.
- Bury the food 5-6cm under the bedding to help prevent fruit flies.
- Chopping the food makes it easier for the worms to eat.
- Meat, bones, fatty food or dairy products often smell and can attract flies and other rodents.
- Eggshells will maintain the bedding at a safe pH level. Without them the bedding may become too acidic.⁴

STEP 5. Cover the worm bed

Cover the worm farm with newspaper or a piece of hessian. This will help keep a constant temperature in the worm farm.⁵

Add water to the box whenever it begins to get dry. It should be the consistency of a lightly squeezed sponge - if it is too wet the worms will die.⁵ Be sure to keep your worm farm out of hot sun and heavy rain.

STEP 6. Harvest the worm castings

After a few months, your worm farm will be ready to harvest. There should be little or no original bedding visible in the bin and the contents will be brown and earthy looking worm castings. To harvest your bin⁴:

1. Move the contents of the bin to one side. Add fresh bedding and food to the vacant side. The worms will move from the finished compost in search of food. After a few days you should be able to remove the older, worm free compost.
2. Or dump the contents of the bin onto a large plastic sheet, and separate into small piles. Place a bright light above the sheet. The worms will move down away from the light allowing you to collect the compost.



References

- ¹ **Urban Programs Resource Network**
www.urbanext.uiuc.edu/worms/live/
- ² **Urban Agriculture Notes**
www.cityfarmer.org/wormcomp61.html
- ³ **The Compost Resource Page**
www.oldgrowth.org/compost/compost.html
- ⁴ **Recycling Council of Ontario**
www.rco.on.ca/factsheet/fs_e02.html
- ⁵ **NSW Department of Environment and Conservation – “Down to Earth” Publication**
www.epa.nsw.gov.au

Don't feed your worms:

- Citrus fruits
- Oily foods
- Meat, poultry, fish
- Dairy foods
- Vinegar or salad dressings
- Glossy coloured paper (magazines, junk mail)
- Bread
- Plants from the onion family (garlic, shallots, leek)



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