

VERMI|COMPOSTING

to reduce
kitchen waste



“vermi” is Latin for worm

*It's easy! Fill a container
with bedding material,
worms and food waste.
The worms do the rest.*

**Uncover
the joy of
vermicomposting!**



What is Vermicomposting?

Vermicomposting or worm composting is using red wiggler worms to decompose organic household wastes into a useful soil conditioner.

Why Compost with Worms?

- For people without yards, such as apartment and condo dwellers, school classrooms and offices, vermicomposting provides the opportunity to compost year round.
- Connect with nature on a daily basis.
- Worm poop (castings) makes great compost, rich in nutrients for use as a soil conditioner.

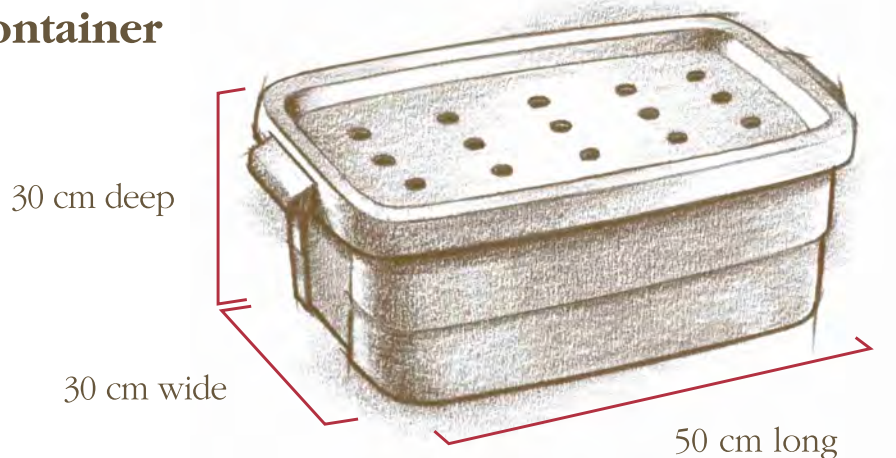


Vermicomposting is ideally suited for the indoor management of food waste.

What You Need

- ~ A 50 L container with air holes in the lid (7 mm holes spaced every 5 cm)
- ~ Red wiggler worms (you can start with as little as a 250 ml container)
- ~ Bedding (shredded newspaper and/or potting soil not enriched with fertilizer)
- ~ Food waste (uncooked fruit and vegetable waste only)
- ~ Water (to moisten the bedding)
- ~ Bag or container in freezer to store food scraps
- ~ Trowel or spoon to bury food scraps and mark the spot

The Container



Location

Any convenient space in a kitchen, storage room, garage or basement is suitable as long as the temperature is between 10 and 25 C. The red wigglers used in your composter originate in warmer regions of the world and do not tolerate cold.

The Worms

Redworms, *Eisenia fetida*, are used for composting because they process organic material quickly. They are also called red wigglers, brandlings and manure worms. Earthworms or night crawlers do not process food as quickly as red wigglers; nor does the worm bin provide suitable habitat.



Red wigglers work best near the surface of the soil, unlike other worms that live deeper in the soil.

Redworms can be obtained from a friend's compost bin or purchased from a distributor. You can start with a small quantity (250 ml container) and gradually build up the amount of food waste you add as the worm population naturally increases.



For half a kilogram of kitchen scraps per day you will need about one kilogram of worms.

The Bedding

Suitable bedding materials include shredded newspaper and/or potting soil that is free of added fertilizer. Glossy paper is not recommended. Potting soil provides necessary grit for the worms to digest food.



Bedding material from outdoors will introduce outdoor organisms, some of which may negatively affect the worms.

Fill the bin three-quarters full with bedding material. Add water until the bedding is as moist as a wrung-out sponge. Lift the bedding material gently to loosen it and create air spaces. This provides oxygen for the worms, helps control odour and helps the worms to move easily.

Suitable Worm Food

Kitchen scraps such as fruit peels and cores, vegetable trimmings, tea bags and coffee grounds can all be composted in the bin. Worms will digest the material more quickly if the scraps are cut into smaller pieces. The food should be buried under the surface of the bedding material to avoid problems with flies and odor. Another way to avoid fruit flies is to freeze the food first.



***Go odour-free** Do not add meat, oils and dairy because they create odours.*



Go disease-free Do not add waste and bedding from small pets because the ammonia in urine is toxic to worms and waste could carry pathogens.

Keep citrus fruit peelings to a minimum to avoid a build up of D-limonene, a chemical given off naturally by citrus foods as the peels are broken down. Remove peels from the bin if you detect mould or a gaseous odour.



One-fifth Rule Citrus fruit peelings and coffee grounds (with filters) should amount to no more than one-fifth of worm food.

Adding Food

Usually, you can feed the worms once a week. Start with a 500 ml container of food. Create a hole in the bedding, put in the food and cover with bedding. Mark the food site with a trowel or spoon. Check their progress to see how quickly they are eating the food. Over time, as the worm population increases, you can give them more food more often. Move the marker with each feeding.

Harvesting Your Compost

It's time to harvest when the bedding material becomes dense, dark and full of castings. The finished compost should be removed every three to four months, or as necessary. There are three methods for harvesting the compost.

1. Migration Method Move all the material over to one side of the bin. Place new bedding and new food waste on the other side for the next four to six weeks. The worms will gradually migrate over and the finished compost can be removed.

2. Leave the Lid Off Method Leave the lid open to let light drive the worms deeper into the compost. Once or twice a day, scoop off the top worm-free layer for use. Repeat.

3. Cone Method Dump the entire contents of the bin onto a large plastic sheet and shape six to nine cone-shaped piles. Place a bright light over the cone piles and let them sit for about 10 minutes. The light drives the worms deeper. Remove the top layer of the compost piles until you see the worms. Repeat.

Using Your Compost

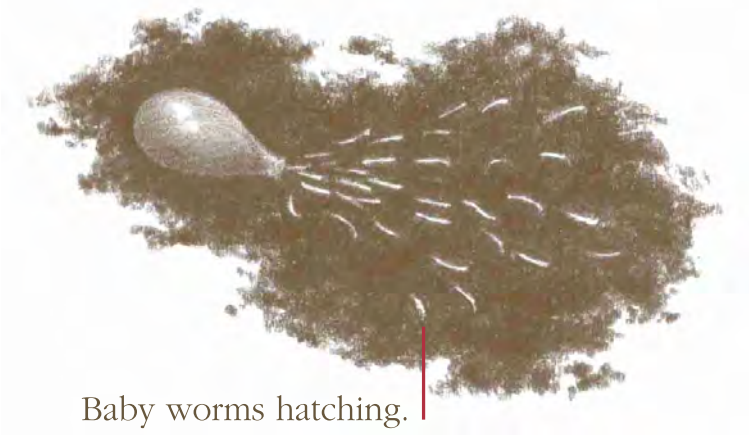
Vermicompost is actually nutrient-rich castings from the worms. Castings can be used for top-dressing container plants and for mixing in with potting soil. Use a ratio one-part compost to three parts potting soil. To use it as a top dressing just sprinkle 6 mm on house plants every couple of months. You can also sprinkle the compost with garden seeds or in new planting holes prepared for flowers or vegetables.

Multiply and Divide

The worms will multiply! After four to five months, you may find tiny, grey egg sacs in your bin, followed by tiny worms. The thread-like worms are clear to white upon hatching but will soon grow to adult red wigglers, which will also multiply. At some point, you need to remove a couple of handfuls of worms and give them to a friend to start a new bin.



Egg sacs are about the size of an apple seed.



Baby worms hatching.



An adult worm can grow to a length of 60 mm.



You know you have too many worms when more than one-fifth of your bin is worms.

Worms are living creatures with unique needs. Maintain a healthy environment for your worms so that they will thrive and do their work.

Got Problems?

Symptom	Problem	Solution
<i>Strong, bad smell</i>	Not enough air circulation	Fluff bedding. Make sure bedding or compost is not blocking air holes in the lid.
	Too much food in the bin	Feed worms less food and /or less often.
	Improper food added	Remove meat, dairy and oily products. Orange peels can emit a strong odour as they break down.
	Food exposed	Bury food completely.
	Anaerobic (no oxygen) condition	Add bedding to absorb moisture, allowing air to fill in the spaces instead of water.
<i>Fruit flies and/or springtails</i>	Food exposed	Cover food completely.
		Freeze food prior to placing in the bin to kill insect eggs.
<i>Pile is wet or water is pooled on bottom</i>	Too much water added to bedding, or food was too juicy, or water in frozen food was not accounted for	Add dry materials, such as shredded newspaper, to absorb excess moisture.
		Leave lid slightly ajar to allow for evaporation.
<i>Mouldy food</i>	Too much food or food not palatable	Remove mouldy food.

