Worm Composting

Vermicomposting is simply composting with worms! It's ideal for apartment dwellers, or those with limited mobility, and for year-round and indoor composting. The type of worm used is the *red wiggler*, whose natural environment consists of slightly moist decomposing materials. This environment can be simulated by a properly built and maintained worm bin. Red wigglers eat their weight in waste every two days. They produce nutrient-rich castings, that become nutrient-rich compost. The worms survive between temperatures of 13°–25°C. If they are outside it is important to keep them in the shade during the summer, and insulated during the winter.

Before you decide on the size of box and amount of worms you will need, weigh the amount of organic waste you produce per day on average. The worm to waste ratio should be 2:1, so for one kilogram of waste you need two kilograms (or about 2,000) of worms.

1. To Start

You will need:
- a box
- bedding
- some soil
- worms
- moisture
- food scraps.

The box should be about 30 cm deep. Boxes are commercially available or can be built. Wooden bins should be sealed with paraffin wax, or a similar non-toxic substance, to increase bin longevity, and avoid bin rot.

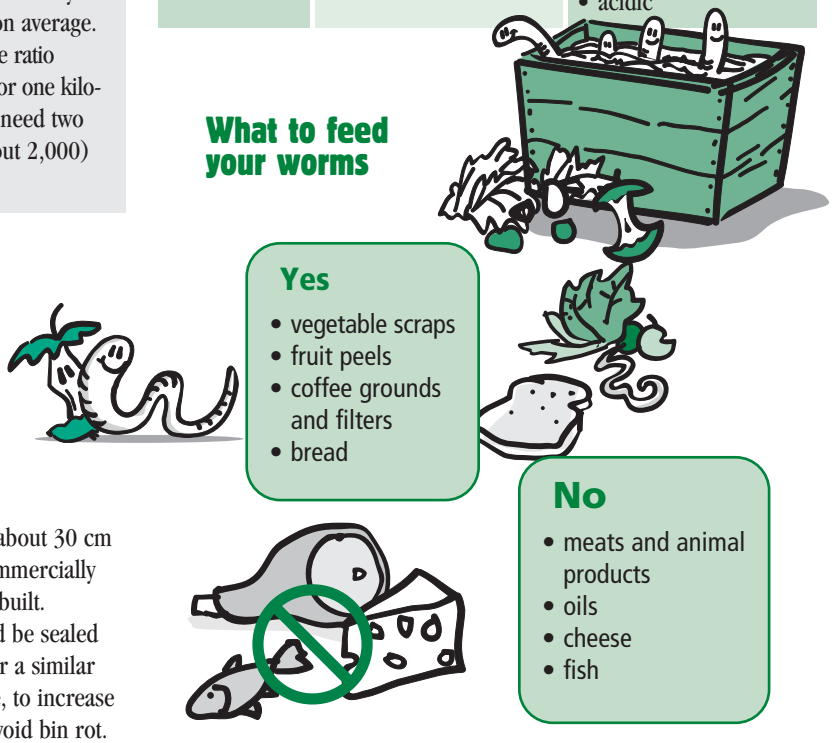
2. Bedding

You will need enough bedding to fill your worm bin to ⅔ of its depth. Bedding must be moistened with water, to be as wet as a well wrung-out sponge. Mix this with two handfuls of soil, sand, or peat moss. Below are some suggested beddings:

	Advantages	Disadvantages
Shredded paper	• free • clean • easy to prepare	• tends to dry out • can become matted if not occasionally forked through • coloured ink may contain toxins
Leaves	• free • natural environment for red wigglers	• can become matted • may contain toxins from air pollution • should be screened for undesirable insects
Corrugated Cardboard	• free • retains moisture well	• cannot use if waxed or treated • acidic

Once you have set up bedding in your worm bin, and have added your desired amount of worms, you may begin adding kitchen scraps. Waste should always be buried, as the worms stay below the surface. This will discourage flies and odour. Bury your waste in one area of your composter at a time, to keep the worm populations concentrated. This will make harvesting finished compost easier. Worms will produce compost more quickly if food is chopped or shredded.

What to feed your worms



Yes
- vegetable scraps
- fruit peels
- coffee grounds and filters
- bread

No
- meats and animal products
- oils
- cheese
- fish

3. To Harvest Finished Compost

When the contents of your worm bin are very brown, and the bedding is barely recognizable, you may harvest the finished compost from your bin. Here are two methods:

Easy:
1) Move all existing contents to one half of the bin, and put newly prepared bedding in the other half.
2) Place food scraps only in new bedding. In about a month the worms will migrate to the new side.
3) Remove finished compost and even out new contents.

Fast:
1) Place contents on a covered surface, such as a black plastic bag or burlap sheet, in sunlight or other light source.
2) Worms will avoid light and migrate down in the pile.
3) Remove top layer of castings until only small piles with mostly worms remain.
4) Return worms to bin, with freshly prepared bedding.

***PLEASE:** Take care of your worms! They are living creatures and when enclosed in a simulated environment they become your responsibility, just like a pet. Proper care and diet will allow your worms to thrive and continue to produce nutrient-rich compost for you!*

Troubleshooting Compost Problems

The Problem	The Cause	The Solution
Ammonia-like odor	Too much nitrogen-rich material	Add more dry brown material and turn more often
Strong odor	1) Pile is too wet 2) Inappropriate food waste was added 3) Food waste was not buried	1) Add more dry materials and turn the pile more often 2) Meats, oils, bones and processed foods are not good composting choices 3) Always be sure to bury your food waste. This not only keeps down the smell but helps prevent insects and other visiting pests.
Nothing seems to be happening	1) Material is to big, dense 2) Not enough oxygen 3) Not enough nitrogen or carbon 4) Not enough moisture	1) Try cutting materials into smaller pieces 2) Turn the pile more often to add oxygen 3) Add nitrogen rich organics like grass clippings and fruit and vegetable waste or carbon based materials like dried grass and leaves (there should be a 50/50 mix) 4) You may need to add water during the dry summer months NOTE: Turning the pile always assists in the composting process.
The pile is cold	The pile is too small or not enough nitrogen and carbon materials	Turn the pile more frequently and continue to add organic materials.

Possible Problems: Worm Composting

The Problem	The Cause	The Solution
Unpleasant Odor	1) Not enough air circulation 2) Too much food in the bin 3) Food exposed 4) Too moist	1) Mix up the bedding and waste regularly 2) Put less food in the bin or add more worms 3) Bury food completely 4) Add more paper to absorb the water
Flies	Food exposed	Bury all waste and add small amounts of soil and peat moss.
Overly Moist	Too much water added or very moist foods	Stop adding water and add more shredded paper