

Alberta



**TAKING
ACTION
THROUGH**

Vermicomposting
**TO REDUCE
KITCHEN
WASTE**

Vermicomposting

Worm composting is a simple way of turning organic household wastes into a useful soil conditioner and fertilizer for houseplants, gardens and lawns. It can be done year round, by apartment dwellers and householders. Worm composting is particularly useful for those who would like to compost their food scraps but do not have space for a backyard compost bin.

What You Need

- A container made of wood or plastic
- Worms (.5 - 1 kilogram of redworms)
- Bedding (shredded newspaper, leaves, etc.)
- Food waste (fruit and vegetable waste)

How You Do It

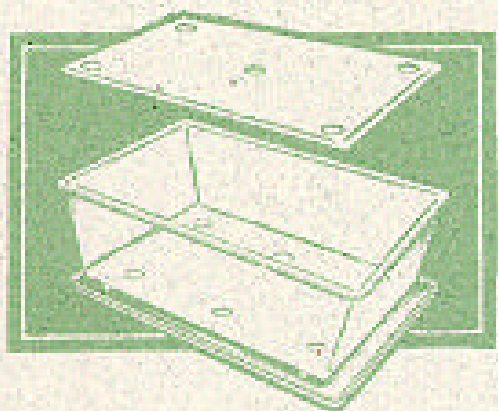
Fill the container one-half to three-quarters full with damp bedding. Add the worms. Pull aside some of the bedding, bury the food waste, and cover it up with the bedding.

What Happens

Over a period of four to six months the worms and microorganisms eat the organic material and bedding, producing rich compost.

Worm Composting - Four Main Ingredients

1. The Container



A worm bin is a sturdy container which keeps light out and moisture in. It can be a plastic bin, a box made from 2x4s and plywood, or even an old foam cooler.

The container should be between 20 and 30 centimetres deep and provide about .2 square metres (2 square feet) of surface area for every kilogram of food waste generated per week. An average household of two to four people will produce about three kilograms of food waste per week. This will require a .6 metre by 1 metre bin. The quantity of food scraps produced may vary, so you may wish to weigh your scraps for a couple of weeks to ensure the size of the bin is adequate for your household's needs.

Depending on the size of the container, drill 8 to 12 holes (5 - 10 mm) in the bottom for aeration and drainage. A plastic bin may need more drainage — if the contents get too wet, drill more holes. Raise the bin on bricks or wooden blocks to allow air circulation. Place a tray underneath the bin to capture excess liquid. This can be used as a liquid plant fertilizer.

Cover the bin to conserve moisture and provide darkness for the worms. Indoors, place a lid, a sheet of dark plastic or burlap sacking on top of the bedding. Outdoors, use a tight fitting lid to keep out unwanted scavengers.

Worm bins should be located in an area where the temperature will remain between 13° C and 25° C.

2. The Worms

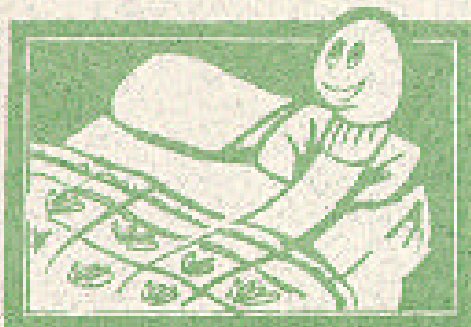


Redworms are best for composting because they thrive on organic material, such as food scraps. These worms are also called red wigglers, brandlings, and manure worms. The scientific names are *Eisenia foetida* and *Lumbricus rubellus*. Do not use earthworms or “night crawlers” as these prefer to live in soil.

Worms can be obtained from a friend’s worm bin or purchased from various distributors around the province. Local bait stores may also sell worms in bulk. Alberta’s Recycle Info Line (1-800-463-6326) can help you with sources.

For half a kilogram of food waste per day you will need about one kilogram of worms. You can start with a smaller quantity and gradually build up the amount of food waste you add as the number of worms increases.

3. The Bedding



Suitable bedding materials include shredded newspaper and cardboard, shredded fall leaves, chopped up straw and other dead plants, sawdust, dried grass clippings, peat moss, compost and aged manure. Vary the bedding in the bin to provide more nutrients for the worms and to create a richer compost. Two handfuls of sand and potting soil will provide necessary grit for the worms’ digestion of food.

Moisten the bedding until it is the consistency of a “wrung-out sponge” and fill the bin 3/4 full. Lift the bedding gently to loosen it and create air spaces. This provides oxygen for the worms, helps to control odour, and allows the worms to move easily.

4. The Food Waste



Worms will eat food scraps such as fruit peels and cores, vegetable trimmings, bread scraps, tea bags and coffee grounds. Worms will digest the material more quickly if the scraps are cut into two-centimetre pieces. To avoid potential odour problems, do not compost meats, dairy products or oily foods.

To bury the food waste, pull aside some of the bedding, add the waste, and then cover it up with bedding again. Bury successive loads in different locations in the bin.

Harvesting Your Compost

The decomposed bedding and compost should be removed every four to six months. The easiest method is to simply move all the material over to one side of the bin, place new bedding in the space created and add food waste to the new side for the next six to eight weeks. The worms will gradually move over and the finished compost can be removed.



If you want to remove the compost sooner, dump the entire contents of the bin onto a large plastic sheet. Separate the material into about nine cone shaped piles. Place a bright light over the piles and let them sit for about 10 minutes. Remove the top layer of compost until you see the worms. Let the worms burrow again and repeat the procedure. Mix a little finished compost with the new bedding for the next bin.

Use the finished compost as a soil conditioner for houseplants, gardens, and lawns.

Common Problems

Unpleasant Odours

Unpleasant odours may waft from your bin if it becomes too moist or is overloaded with food waste. If this occurs, gently loosen up the bedding to allow more air in. Stop adding food waste until the worms and microorganisms have broken down the food in the bin. Check the drainage holes to make sure they are not blocked and drill more holes if needed. If your bin has a tight-fitting lid, leave the lid ajar to allow evaporation. If the moisture level seems right, the bedding may be too acidic from having added too many citrus peels or other acidic foods. Adjust by adding a little lime or crushed egg shells and cut down on acidic wastes.

Fruit Flies

Discourage fruit flies by always burying the food waste and not overloading the bin. Keep a plastic sheet, piece of old carpet or sacking on the surface of the bedding.

A Final Word...

Once your worm bin is set up, it will require very little maintenance. However, it is important to remember that worms are living creatures with their own unique needs. You will have to ensure that you maintain a healthy environment for your worms so that they will thrive and do their work.

To learn more about worm composting:

- read *Worms Eat My Garbage* by Mary Appelhof; Flower Press, Kalamazoo, 1982
- read *Squirmy Wormy Composters* by Bobbie Kalman and Janine Schaub; Crabtree Publishing Company, Niagara-on-the-Lake, Ontario, 1992
- check your local library for books on composting. Many composting books have a section on worm composting.
- contact Alberta's Recycle Info Line 1-800-463-6326

For information on backyard composting see Action on Waste's brochure "Taking Action Through—Backyard Composting to Reduce Household Waste".

We thank the Greater Vancouver Regional District for permission to adapt their publication on worm composting.

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