Composting with Worms

It's a Squirmin' Good Time

How Red Wrigglers Eat Your Food Scraps and Produce Vermicompost

It's simple. Composting worms are kept in a bin with shredded paper or other biodegradable bedding. You feed them food waste. They digest the waste and bedding then excrete nutrient-rich castings. After a few months, the castings combined with the well-decomposed bedding, become vermicompost -- one of the richest soil amendments around. It will do wonders for plants, flowers, fruit trees and garden vegetables. And, fishermen will appreciate having a steady supply of worms on hand.

Getting Started

To start vermicomposting, you need five things:

* a container for your worms
* a supply of biodegradable bedding
* worms (of course)
* a supply of food waste
* a plan for harvesting the vermicompost

Container

A wooden bin, metal tub or plastic container works well as a worm container, provided it allows for good air circulation -- the secret to an odor-free bin.

The worm container should be shallow, no more than 18 inches deep. Redworms feed near the surface, so there's no need for anything deeper. To determine the size of bin you need, calculate how much food waste you'll be feeding your worms in an average week and allow one square foot for each pound of scraps per week.

Drill 1/4" drainage holes through the bottom of your bin, and for good air circulation, raise the bin up on bricks or wooden blocks, and place a tray or a sheet of plastic underneath to catch any liquid. Put your bin somewhere that's easy to get to, and where worms won't be subjected to temperature extremes. Worms like temperatures ranging from 55-77° F. Basements, heated garages or breezeways are usually good sites.

Step by Step Guide

Start with a washed bin

Drill vent holes on sides

Drill leachate holes in bottom

Shred paper by hand or machine

Put bedding in bin

Add handful of soil and sand

Bedding

Besides giving worms a place to work and rest, bedding helps hold moisture in your box and keeps your scraps under wraps.

Use light, fluffy biodegradable materials free from pesticides or chemicals.

Try beddings such as machine-shredded newsprint or computer paper; hand-shredded newsprint or computer paper (no glossy inserts); and shredded cardboard. Consider enhancing your bedding with additives such as peat moss or sterilized soil . Sand or finely ground eggshells provide the grit that worms need to digest food.

You will need 5 to 8 pounds of bedding for a 2' by 2' box, mixed with 3 pounds of water for each pound of bedding (note, a gallon of water weighs 8 pounds). Fluff damp bedding well to aerate.

Worms

The best worms are red worms (Eisenia Fetida). They reproduce quickly in captivity, while chomping lots of food waste. Use roughly 2 pounds of worms to 1 pound of daily scraps. You can buy worms by the pound (about 1,000 worms). If you want to start small, reduce the amount of food waste in the bin until the population increases. You won't have to wait long. Worms can lay two or three cocoons a week that hatch in 21 days.

Building Your Worm Bin

Feeding the Worms

Worms are not picky eaters; they munch on just about anything. They eat peelings and other vegetable or fruit wastes (not citrus), cornmeal, oatmeal, crushed eggshells, coffee grounds with the filter, and tea bags. Moist shredded cardboard is a favorite, too.

The smaller you cut the scraps, the sooner it will break down and the sooner it will be available as food for the worms.

NEVER feed your worms meat, bones, animal feces or anything that includes dairy products like milk or butter.

Do not put freshly mowed grass in the bin. It will heat the bin up as it breaks down and the heat can kill the worms. Needles from pine, fir and cedar trees will also kill the worms.

To feed your worms, bury your food scraps in various places in the bin. Feed the worms every few days, being careful to bury the scraps and spread them out.

If the bin starts to smell, you're feeding them too much or not burying the scraps deeply enough.

Worms are low-maintenance, and you can skip two or three weeks without feeding them. Any longer than that, and you'll have a big box of dead worms.

Pour water to moisten

Mix and fluff damp mixture

Place bin on lid - space with blocks

Gently add red wriggler worms

Open a hole and add food

Put a lid on it (holes in lid)

Harvesting the Bin

After 3 to 5 months, you'll notice more and more black, dark material in your bin, and not much bedding. That black material is the worm castings, or worm poop, and it means its time to harvest your bin. This material does wonders to enrich soil for indoor and outdoor plants.

To harvest the vermicompost, dump the bin contents on a large plastic sheet, and separate worms from castings. Worms hate light, so shining a flashlight on them makes the separation job easier.

Then just start the process again with new bedding. Going fishing and need worms? Dig in and take a handful of worms and you're all set.

An alternative is to set up a two bin system. Drill holes in a second bin, just as you did for the first bin.

When the initial bin is full, prepare the new bin with bedding and food and place it right on top of the old bin.

The worms work their way through the holes to the food in second bin. In one or two months most worms will be out of the original bin and your vermicompost will be ready for the garden.

Special Issues

Occasionally, things go awry with a worm bin. Common problems are:

Dry bedding: sprinkle with water.

Smelly: stop adding scraps until the worms catch up on eating their food, or add extra bedding.

Fruit flies: stop adding banana peels, add a spider, or bury food waste better until the flies leave. A deep layer of shredded newspaper on top discourages them.

Escaping or dying worms: the bin may be too hot (move to a cooler location); too wet (add bedding and ventilation); or too acid/salty (add bedding).

Source: Composting with Worms by Mary Kohrell, Calument County UW-Extension

Additional Resources: Vermicomposting Resources, SHWEC
http://www4.uwm.edu//shwec/publications/cabinet/factsheets/VermicompostingResources.pdf

Vermicomposting Supplies, SHWEC
http://www4.uwm.edu//shwec/publications/cabinet/factsheets/VermicompostingSuppliesSourceList.pdf

Photos and layout by Cathleen Condon

SHWEC
SOLID & HAZARDOUS WASTE EDUCATION CENTER

UW Extension

With staff in Green Bay, Madison, Milwaukee and Stevens Point, SHWEC has been providing quality environmental education and technical assistance throughout Wisconsin since 1990. To contact a SHWEC Specialist go to
www.shwec.uwm.edu

SHWEC -UW-Extension 610 Langdon Street, Room 528 Madison WI 53703 608.262.0385 tel 608.262.6250 fax