

Worm Wonders



Eisenia foetida, commonly called redworms, are a specific type of worm that are best suited for worm bins. As surface dwellers, they process large amounts of organic material in their natural habitats of manure, compost piles and decaying leaves. They reproduce quickly and love to eat a variety of kitchen wastes.

Worms have no eyes, but are extremely sensitive to light, which they "see" via special skin cells located at the head and tail end of their body.

Worms have no lungs to breathe with as we do. Their moist skin allows them to "breathe" oxygen into their body and release carbon dioxide from inside their body into the surrounding bedding.

Worms, in nature, will usually live and die within the same year. Worms in a worm bin may live up to five years.

An earthworm can move a stone that is fifty times its own weight.

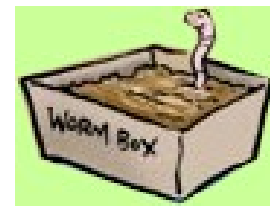
A mature redworm (four to six weeks old) can mate and produce two to three cocoons per week. Two to five baby worms can hatch from each cocoon in only three weeks.

A single worm has both male and female reproductive organs, but it still takes two worms to reproduce.



When food scraps are thrown into the garbage a valuable resource is lost. Composting with worms or *vermicomposting* provides an alternative method for disposing of kitchen waste. Maintaining a worm bin is fun, educational and will reduce household waste while providing a source of natural nutrients for your plants.

Worm Bin Recipe



1 10-18 gallon dark plastic storage bin with a snug fitting lid (such as a Rubbermaid Rough tote). Choose size according to food waste produced.
Rule of Thumb: one square foot of surface space is needed for each pound of food waste produced per week.

Newspaper or shredded paper
2-3 cups of water (sprayer optional)
1 handful of garden soil
½- 1 pound of redworms
Food waste



Drill small holes on lid and along top 2-4 inches of bin to allow aeration.

Make bedding by ripping newspapers into strips no wider than 2 inches. Put the paper in the container.

Mix or spray water into newspaper until bedding is thoroughly moistened. There should be no standing water in bottom of container.

Mix in soil. Fluff bedding.

Spread worms over top of bedding.

Bury food waste. Cover bin and place in a location where the temperature will remain 55-77 degrees Fahrenheit.

Worm Bins FAQ

WHAT KIND OF FOOD CAN I PUT IN THE WORM BIN?



Worms will eat most anything. A list of their favorites is given below. Feed your worms a good variety of produce scraps to keep an even chemical balance in the soil which keeps them healthy. Mostly fruit or tomato waste could make the soil too acidic.

Apples	Cereal	Orange Peels
Apple Cores	Coffee Grounds	Pancakes
Baked Beans	Cucumbers	Pears
Banana Peels	Egg Shells*	Pineapple Rind
Biscuits	Grapefruit Peels	Pizza Crust
Cabbage	Lettuce	Potato Peels
Cake	Oatmeal	Tea Leaves
Carrots	Onion Peels	Tomatoes



**good source of calcium carbonate, necessary for worm reproduction*

WHAT FOODS SHOULD I AVOID?



Avoid highly processed snack foods, such as salty chips, candy, cakes/twinkies, etc. It is best to feed worms small pieces of whole foods. Dry tree leaves can be used instead of shredded paper, but do not add grass clippings, flowers, or other yard waste to the bin. Worms thrive with a healthy, balanced diet, so even too much of a good thing, such as watermelon rind or orange peels can overwhelm the bin. Keep a light touch, see how much is being digested and slowly increase the amount of food each week. Remove and discard any moldy items immediately.

HOW MUCH DO WORMS EAT?

Redworms eat almost half of their body weight each day. If you start with a pound of worms you can feed them 3-5 pounds a week. Don't worry about the worms when you go on vacation for a couple of weeks. The worms will eat the bedding when no food waste is available.



WILL THERE BE ODORS AND BUGS?

A properly maintained bin should not give off any offensive odors. Avoid adding meat scraps and *always completely bury all food waste* in the bin. Burying fruit waste will prevent fruit flies from being attracted to the worm bin. Air is necessary for the worms and other microorganisms to work effectively. Without air you may develop anaerobic conditions which will allow gas producing microorganisms to thrive. Some people find that freezing their food waste before adding to the bin eliminates fruit flies, too.

WILL I NEED TO ADD MORE BEDDING?

Add bedding every 3 - 5 weeks or when there is not enough bedding material to completely bury the food waste. Other suitable sources for bedding are fall leaves, shredded office paper or shredded corrugated cardboard.

WHEN & HOW CAN I USE THE VERMICOMPOST?

The redworms will work most productively when they live in 55 -77 degrees Fahrenheit, are fed, kept moist and minimally disturbed. Given these conditions you will have compost available within a few months. The worm castings (or vermicompost) are very rich in nutrients for plants. You may work the vermicompost into garden soil, add a spoonful periodically to indoor plant soil, or water plants with compost tea.



WHAT IS THE BEST WAY TO HARVEST THE VERMICOMPOST?

The easiest method is the "Divide and Dump" technique. You simply remove about two-thirds of your vermicompost, worms and all, and dump directly onto your garden. Add fresh bedding to the vermicompost that is still in the box. There will be enough worms and cocoons remaining to repopulate the worm bin.

You can let the worms do the sorting for you by putting the vermicompost and worms to one side of the worm bin. Then add new bedding to the empty side. Bury your food waste in the new bedding only. The worms will move over to the new bedding in search of food. After 2 to 3 months the vermicompost can be harvested. You can continue this back and forth method to simplify your harvest of future vermicompost.

Another method is to dump and hand sort the worms from the vermicompost. First dump your worm bin out onto a large sheet of plastic. Make several cone-shaped piles. When the light is very bright the worms will quickly move into the center of each pile. After about five minutes, you will not be able to see the worms. Gently remove the outer surface of each pile, exposing the worms to the light and sending them deeper into the pile. Following this process you will eventually end up with a container of vermicompost and a mass of pure worms. It's a good idea to have fresh bedding made up before getting started with this method so you can refill your empty bin and add the worms as you sort.

WHERE CAN I GET REDWORMS?

Flowerfield Enterprises
10332 Shaver Rd.
Kalamazoo, MI 49002
(269) 327-0108



Also check your local bait shop for redworms. They are also commonly called red wigglers, red hybrids or manure worms.

WHERE CAN I LEARN MORE?

The worm supplier listed is extremely knowledgeable about worms and vermicomposting. Also *Worms Eat My Garbage* (book), *Worms Eat Our Garbage* (curriculum), and various videos are available from Flower field Enterprises listed above. The web offers a host of helpful sites including www.wormwoman.com, www.wormdigest.org, www.wormlady, and www.wormworld.com. Additional resources may be available through your local cooperative extension office, garden club, ecological organizations, or the environmental office of your local or county government. Information adapted from material provided by Charter Township of Ypsilanti(1995): Updated by the City of Ann Arbor (2004) # # #