

## Worms

Compost worms are called “red worms” or “red wigglers.” They are often found in old compost piles, but are different from the earthworms you normally find in the ground. Their scientific names are *Eisenia fetida* and *Lumbricus rubellus*. These worms have a big appetite, reproduce quickly, and thrive in confinement. They can eat more than half their own weight in food every day! Common earthworms and nightcrawlers don't survive well in bins, since they normally live under the soil surface. When purchasing red worms, one pound is all you need to get started. For sources, see “Where to Buy Worms.”



## Feeding Your Worms



Worms like to eat many of the same things we eat, only they aren't as picky. Stale bread, apple cores, lettuce trimmings, coffee grounds, and non-greasy leftovers are just some of the foods we usually discard that worms love.

### Do Feed

Vegetable scraps  
Fruit scraps and peels (mold/rot is fine)  
Bread and grains  
Tea bags  
Non-greasy leftovers  
Coffee grounds (and filters)  
Crushed egg shells  
Napkins, paper towels

### Don't Feed

Don't overfeed citrus—should be no more than 1/5 of worm food (Put in regular compost)  
Meats, fish  
Greasy foods  
Dairy products  
Twigs and branches  
Dog, cat, bird feces

The first feeding is like stocking an empty refrigerator. Start your worms out with 2-3 quarts of scraps. Include some chopped up soft foods (melon, grapes, cooked vegetables) or somewhat rotted foods that will decompose quickly. After the first feeding, feed the worms weekly, starting out with about a quart of food scraps per week. As they multiply, you can add

larger quantities of food scraps. After a few months you can add about an inch of food scraps each week. To avoid fruit flies and odors, bury food under top layer of the bedding. Don't dump and run!

Worms prefer smaller-sized scraps and will eat through them more quickly than large or whole pieces of food.

If your worm bin starts to smell bad, it could be a sign that you are adding more food than the worms can process. If too much food is added, it can even heat up and kill the worms! Quit feeding for awhile and when most of the food has been eaten, start feeding again.

## Maintaining Your Worm Bin



Add fresh bedding every few weeks. Always keep a two-inch layer of fresh bedding over the worms and food in your bin. Shredded, non-glossy newspaper works great!

Keep bedding a little wetter than a wrung out sponge. In a plastic bin, add dry bedding to absorb excess moisture. You may need to sprinkle the contents of wooden bins to moisten them occasionally.

## Harvesting Worm Compost

After you have fed your worms for three to six months, you'll see some worm compost in the bottom of your bin. You can harvest what's there, or wait until your bin is nearly overflowing. No matter which method you use, some worms will remain in the compost. Worms put in the garden with the compost will not live long, but your main goal is to reserve enough worms to re-start your bin. You can't save every worm! Here are a few methods for separating the worms from the compost.

**Method #1:** Most of the uneaten food, bedding and worms will probably be in the top third of your bin. Remove this material, worms and all, and put it aside to start a new bin. Remove the remaining material from the bin for use as compost. Put the uneaten food, bedding and worms back in the bin, and resume feeding and maintaining your bin.

**Method #2:** This method works only in bins over three feet long. Move the contents of your worm bin to one side, place fresh bedding in the empty space and bury

your food wastes there for a few months. Harvest the other side after most of the worms have moved into the new food and bedding.

**Method #3:** Spread a sheet of plastic out in the sun. Dump the contents of the worm bin and build a few cone shaped piles on the sheet. Gently remove the top layer of each pile until you see worms. To escape the light, the worms will dive deeper into the piles. After repeating the process every 20 minutes or so for a few hours, you will be left with a wiggling pile of worms. Return the worms to their bin with some of the compost for bedding.

## Using Your Worm Compost

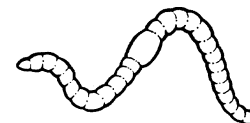


Using your finished product will help your plants thrive by adding plant growth hormones, beneficial microorganisms, humus and nutrients to the soil. Vermicompost is lumpy and clay-like when removed from the bin. You can use it right away or let it sit in an open plastic bin or bag away from rain and sun for 1-4

months to transform into a fine-grained product. Sprinkle a layer at the base of indoor or outdoor plants, making sure compost is not piled up against plant stems. Cover with soil or mulch. You can also blend worm compost up to 20% into potting mix or garden soil.

## Books and Other Resources

- Learn more about composting and order publications at [www.compostsantacruzcounty.org](http://www.compostsantacruzcounty.org)
- *Worms Eat My Garbage*, 1997, Mary Appelhof, Flower Press. Definitive guide to setting up and maintaining a worm composting system. Available from the Santa Cruz Public Libraries.
- *California Integrated Waste Management Board*, [www.ciwmb.ca.gov/Organics/Worms/](http://www.ciwmb.ca.gov/Organics/Worms/),



## Troubleshooting

Problems	Causes	Solutions
Worms are dying	Too much food in bin, starting to heat up like hot compost	Feed less food or less often or get another bin
	Too dry	Add water until slightly damp
	Too wet	Add dry shredded paper
Bin attracts ants	Too dry	Add water until slightly damp, put bin outside away from people
Bin attracts flies	Food exposed	Bury food completely
	Spring fruit fly invasion	Feed less fruit, put bin outside away from people
Sowbugs, beetles, other critters in bin	These are good for your compost!	

## Where to Buy Worms

- Buy worms at a Hands-On Wormshop! These workshops on composting with worms are scheduled throughout the year. Pre-registration required. Participants can purchase bins and worms at reduced prices. Contact the Worm Doctor or visit the website for a schedule.
  - Dharmananda Estes, Boulder Creek, 831-338-0189. Also sells worm castings.
  - Stafford Warren, Scotts Valley, 408-568-3182.
  - John Kiegelis, Scotts Valley, 831-247-1471. Also sells worm castings.
- Mail Order. Expect to pay about \$35/pound.
- Happy D Ranch, [www.happydranch.com](http://www.happydranch.com), 888-989-1558.
  - Foothill Worm Ranch, [www.foothillwormranch.com](http://www.foothillwormranch.com), 925-484-4192.

## More Information

### Wormshops

Workshops on composting with worms are scheduled throughout the year. Pre-registration required. Green Waste Recovery customers who live in the unincorporated area of Santa Cruz County are eligible for one free bin per customer at workshops. Non-customers who live in the unincorporated area and Scotts Valley residents can buy bins below wholesale cost. Worms are sold at cost. Contact the Worm Doctor or check the website for details and a schedule.

### Comprehensive Composting Workshops

Workshops covering all aspects of composting are offered spring through fall. Green Waste Recovery customers who live in the unincorporated area of Santa Cruz County and Scotts Valley are eligible for one free bin per customer at workshops. Non-customers who live in the unincorporated area can purchase bins below wholesale cost. Call the Rotline or visit the website for a schedule.

### Master Composter Program

Master Composters attend classes and field trips to learn about all aspects of composting and develop effective presentation techniques. They volunteer at home composting workshops and information booths. For more information call the Rotline.

Learn more about composting and order publications online:  
[www.compostsantacruzcounty.org](http://www.compostsantacruzcounty.org)

Composting Questions?  
Call the Rotline  
831-423-HEAP (4327)

Questions About Worms?  
Call the Worm Doctor  
831-427-3452



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# WORM COMPOSTING

## Let worms eat your garbage!



SANTA CRUZ COUNTY  
HOME COMPOSTING PROGRAM

[www.compostsantacruzcounty.org](http://www.compostsantacruzcounty.org)



The Home Composting Program is sponsored by the Santa Cruz County Board of Supervisors and produced by the Santa Cruz County Department of Public Works Recycling and Solid Waste Services

## Worm Composting



Let worms eat your garbage! They will happily turn it into some of the best fertilizer on earth—worm compost, otherwise known as worm castings or vermicompost.

Vermicomposting is a fascinating, fun and easy way to recycle your food scraps. A worm bin requires very little work,

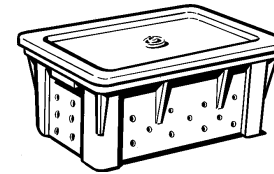
produces no offensive odors and provides worm castings that help plants thrive. Composting with worms saves money on garbage bills, improves the fertility and water-holding capacity of garden soil, benefits the environment by recycling valuable organic materials, and helps solve the crisis of over-flowing landfills.

## Getting Started

Only a few things are needed to make good worm compost: a bin, bedding, worms and worm food (*your kitchen waste*).

### Worm Bins

You can use a plastic storage bin, a shipping crate, a commercial worm bin or a homemade wooden bin. Bins should be 8-14 inches deep and have a tight fitting lid to keep out rodents. Drill 1/4 inch holes in the bottom and sides, 5-7 inches apart, to provide ventilation and drainage. Set the bin on supports so excess moisture can drain out.



Hardware and discount stores carry an assortment of plastic storage containers that can be made into bins. Ultraviolet light is toxic to worms, so bins should be made from an opaque material.

The rule of thumb for bin size is two square feet of surface area per person, or one square foot of surface area per pound of food wastes generated each week. Vegetarians often find they need a bin with four square feet of surface area per person.

Manufactured bins are available for free or below wholesale cost to residents of the unincorporated area and Scotts Valley who attend workshops. Call the Rotline or the Worm Doctor for details or visit the website.

If you live inside city limits or would like more options, call the Rotline for a copy of the handout *Everything You Need to Know About Compost Bins* or for bin construction plans.

### Where to Put the Bin

The ideal temperature for compost worms is 59-77 degrees F. Place your bin in the shade or in an area where it will only receive limited morning light and, if possible, under a tree or an overhang to protect from frost. Make sure rainwater cannot enter the bin through the lid. As long as outdoor temperatures are between 30 and 90 degrees and you have at least 4 inches of moist bedding in the bin, your worms should be fine.

Good spots for your bin:

- Under a tree
- Along side of house
- Garage
- Patio or deck
- Under the eaves
- Shed

### Bedding Materials

The compost worm's natural habitat is in piles of fallen leaves or manure. You will need at least four inches of bedding to keep the worms cool and moist, to give them fiber to eat and to discourage fruit flies from getting into the food. For best results, make bedding from a mixture of materials, including shredded, non-glossy newspaper, brown leaves (no pine, redwood, aromatic leaves or leaves with tannins), straw, sawdust, shredded corrugated cardboard, finished compost, well-rotted and rinsed horse manure and coconut pith fiber (available from nurseries). A handful of soil provides microorganisms and grit to help the worms grind their food.

Put the bedding in your bin, moisten with water and mix until it's a little wetter than a wrung out sponge. You are now ready to add the worms and food. Over time, the bedding and food are eaten by the worms and turned into rich worm compost.