

## Composting With Worms

With help from

<http://www.dnr.state.wi.us/org/caer/ce/eeek/earth/recycle/compost2.htm>

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For vermicomposting, worms are kept in a bin with shredded paper or other biodegradable bedding. They are fed food waste, which they digest, and then excrete nutrient-rich castings. After a few months, the castings combined with the well-decomposed bedding, become vermicompost---one of the richest soil improvements around. Vermicomposting requires four things.

### **THE BIN**

Commercial worm bins are the cleanest & easiest to use & maintain (\$82-\$160 with S & H). Use two 5-gallon buckets, with snap-on lids to store compost with its liquid. Follow bin instructions. However, wooden boxes, metal tubs and plastic basins work well as worm containers, provided they allow for good air circulation. See <http://www.klickitacounty.org/SolidWaste/FilesHtml/Organics/OscrJunior.pdf>

- Keep it Shallow: No more than 18 inches. Red worms feed near the surface, so there's no need for anything deeper. Bedding will mat down in a deeper bin, developing a smell if it starts to decompose anaerobically (without oxygen).
- Size it Up: To determine bin size, calculate how much food waste your household creates in an average week. Either
  - Allow one square foot for each pound of scraps per week. Example: If your household creates an average of four pounds of food waste each week, a 2'x2' bin should be adequate, or
  - Size your bin by allowing two square feet of surface for each person in your household. For a family of three to six people, try a bin that's 2'x3'. Adjust the dimensions based on how often people eat out, can or freeze produce, or discard leftovers.
- Choose a bin that has the greatest surface area. Air will circulate better and you'll have more places to bury your waste.
- Scrub plastic and metal containers with liquid dish detergent and rinse with hot water. Avoid wood treated with preservatives and containers that once stored chemicals or pesticides.
- Drill 1/4" drainage holes through the bottom of your bin. For plastic, drill 14-20 holes, 9-12 holes for a wooden container. For good air circulation, raise the bin on bricks or wooden blocks, and place a tray or a sheet of plastic underneath to catch any liquid. If you put perforated pipes through the bin for better air circulation, you may not need drainage holes.
- Put your covered bin where worms won't be subjected to temperature extremes. Worms like temperatures ranging 55°-77° F. Basements, heated garages or breezeways are usually good sites.

### **THE 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.

1. Hand or machine shredded paper---never glossy or colored,
2. Shredded cardboard or tissue rolls,
3. Mixed with one-third to one-half peat moss,
4. Half a cup of sterilized soil or sand,
5. Periodically sprinkled with small amounts of crushed eggshells or ground limestone.

### **THE WORMS**

Avoid night crawlers and other garden worms, as they don't survive well in a worm bin. The best worms for vermicomposting are red worms. The red worm (*Eisenia foetida* or *Lumbricus rubellus*) also known as: red wiggler, manure worm, red hybrid, striped worm, fish worm, is the worm capable of reproducing quickly in captivity, while chomping copious quantities of food waste.

How many worms should you start with? Use the calculation you did for the average amount of food scraps your household produces per day. Use roughly two pounds of worms to one pound of daily scraps. You can buy worms by the pound---about 1,000 worms. If your household produces a half-pound of scraps daily, a one-pound package of worms (\$36 with S & H, cheaper locally) should be enough, or use one pound of worms for a 2'x2' bin; two pounds of worms for a 2'x3' bin.

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: Breeding worms can lay two or three cocoons per week that will hatch in 21 days, with each cocoon hatching two or three worms that will mature in 60 to 90 days. A worm population eventually stabilizes at levels that can be supported by the food scraps added, and by the availability of room to move and breed. Buy worms from growers, bait shops, some garden centers, or through the Internet. Spread the word. Share your extra worms and make friends with other vermicomposters. Adopt newbies and seek experienced vermicomposters as mentors.

### **THE FOOD**

Use *anything but* non-biodegradable material and animal products, including dairy, the smaller the pieces the faster the process. Crushed eggshells are the exception.