

Worm Bins

What is it?

Worm farming, or vermicomposting, is a way to transform kitchen waste into rich humus with the help of worms. The vermicomposting system consists of:

1. The physical structure (bin) - box or container
2. Decomposers - worms and microorganisms
3. Controlled environment - temperature, moisture, acidity
4. Maintenance procedures - preparing the bedding, burying the food waste, separating the worms from the compost, and making use of the worm castings.

Why do it?

Vermicomposting is a valuable alternative to outdoor composting if space or facilities for a traditional compost bin are unavailable. It is an excellent source of compost (in the form of worm castings) and outlet for kitchen waste for apartment dwellers, offices or classrooms.

How to get started

To make a worm bin you will need the following items:

- A bin you can put holes in (opaque plastic storage bins work fine, but you could also build one out of wood)
- Enough soil to fill your bin up about 4"
- Newspaper, or other carbon-based material such as dry leaves or coir (coconut fiber)
- Red wiggler worms (at least a handful, ideally 1-3 lbs, depending on the size of your bin)

Key Factors to Consider

- Worms can be fed daily or weekly, depending on how much food waste you produce. When you generate more waste than usual, temporarily store the excess in another container for use on another day. Worm populations will adjust based on the amount of food they get.
- If you are going to be away for longer than 3 weeks, it is advisable to make arrangements with a friend or neighbor to ensure the worms have adequate food, bedding, moisture and temperature.
- The less you disturb the worms, the better off they are. However, you should make regular observations to know what is going on in the box. Since worms flee from light, a red light will allow you to make more detailed observations.

Local Resources

- Master Composter classes offered in spring and fall at the Civic Garden Center
- Alex McDuffie, supplier of red wiggler worms: mcduffie.alex@gmail.com or (513) 891-1163
- Hamilton County Recycling and Solid Waste District offers vermicomposting classes: www.hamiltoncountyclecyles.org



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How to Assemble a Worm Bin

1. Drill 12 evenly spaced holes in the bottom of your bin.
2. Add soil to the bottom of your bin to a depth of about 4" (depends on the depth of your bin, soil should fill no more than half of the bin).
3. Add damp newspaper strips, leaves or coir (coconut fiber) to the bin, then the worms.
4. Use an old lid to catch worm leachate (liquid that drains from the bottom of the bin). Using a secure lid on top of the bin will help keep the bin moist and dark- a happy habitat for worms.
5. Let your worms adjust to your bin for at least three days.
6. Start adding food scraps. You can add as many scraps at one time as you would like. Make sure to bury the food scraps completely under the soil to avoid attracting fruit flies. It is helpful to note where you buried your last food scraps (with a stick or something) so you can check to see how quickly they eat the food, what they prefer, and to avoid burying more food in the same place.
7. Worms do not have teeth; they have gizzards like birds, so they need grit. You can make grit by crushing up egg shells or adding a handful of gravel or sand.
8. If you notice they are not eating food scraps and you seem to be out of newspaper or leaves, add more leaves, newspaper and grit. Worms need balanced diets like people and other animals.
9. Harvesting and changing the bedding: after weeks of adding food waste to the bin, you will notice that the amount of bedding has decreased from a combination of the worms' and the microorganisms' activities. The color of bedding becomes darker and the worms have less paper or leaves in which to live. You will know the castings are ready to use when they feel slippery rather than gritty when rubbed between your fingers. To harvest the castings, scoop the worms and castings onto a tarp. Make piles the size of dinner plates. Leave them for 30 minutes then scoop the finished castings off the top. If there are still a lot of castings mixed with the worms, combine the piles and repeat the process. Refresh the bin with soil and bedding and return the worms to it. How often you will need to harvest castings depends on the type of bedding, the quantity of the worms in the bin (which will change over time), and the temperature and moisture conditions. If the worm bin is well-maintained, the bedding will need to be changed every four to six months.

Recommended Reading

- *Worms Eat My Garbage* by Mary Apellhof

