

Harvesting Continued:

The harvested compost can be used or stored in a separate container, and your worms can return to the original bin with fresh bedding.

- **Migrating method:** Open your bin and gently push the compost to one side. Prepare and place new bedding in the empty side of the bin. Begin only placing food in the new bedding. Once most of the worms have migrated, you can remove the compost. Be sure to add more bedding to fill the empty area.
- **Scoop method:** Open your bin to allow light in, forcing worms to burrow down. After about 10 minutes, scoop the top layer of compost off.

Additional Resources

University of Illinois Extension, Adventures of Herman:
extension.illinois.edu/worms/

U.S. EPA, Worm Composting (Vermicomposting):
<https://www.epa.gov/recycle/composting-home>

Treehugger:
<https://www.treehugger.com/vermicomposting-step-by-step-guide-5185295>

Mother Earth News, How to Vermicompost:
<https://www.motherearthnews.com/organic-gardening/guide-to-vermicomposting-zmaz83jazshe/>

Troubleshooting

Vermicomposting is not an exact science and regularly observing your bin is key to success. Below is a list of some common problems:

Symptom	Reason	Solution
Strong Odor	Not enough air	Fluff bedding, be sure air holes aren't blocked
	Too much food	Feed worms less often or less food
	Improper food added	Remove meat, dairy, or oily items
	Food is exposed	Bury food completely
	Anaerobic conditions	Add bedding to absorb moisture
Fruit Flies	Food is exposed	Bury food completely
	Too much food	Don't overfeed worms
Ant Infestation		Place ant traps near bin Immerse bin feet in liquid
Mite Infestation	High mite population	Use caution when adding foods with high moisture content (i.e., fruits)
Overly Moist	Too much water added to bedding	Stop adding water Add paper to absorb moisture
	Too much food with high moisture	Add less fruit and vegetable waste

Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Ave. East
Springfield, IL 62702
217-524-3300



Bureau of Land
1021 North Grand Avenue East
Springfield, IL 62702

An Introduction to Vermicomposting



Materials Management
and Compliance

Overview

Over half (around 60%) of the 66 million tons of wasted food that was generated in 2019 was sent to landfills. Food waste is the single most common material landfilled and incinerated, and makes up the majority of the waste stream at over 24 percent of landfilled waste.* Also, food waste in landfills contribute to more methane emissions than any other material and vermicomposting can help to prevent some of that food waste from entering a landfill.

Basics of Vermicomposting

Vermicomposting is a method of composting that uses worms to break down food waste into a nutrient-rich soil amendment. It can be a faster process than other compost methods. In only a few months, you will have worm castings that can be used as a rich, natural fertilizer.

Getting Started

Selecting a Bin

It is important to select a bin that will suit your needs. Whether you make your own or buy a bin, you should base the size on the amount of food waste you produce. For homemade bins, plastic storage bins that are both wide and shallow are a great option. Bins should have a lid and not be made of transparent material in order to keep light out. Vermicomposting can be done indoors or outdoors. It is important that the location of your bin will not get too hot or too cold; your worms will be most productive in temperatures between 55° and 77° F, but can survive at 32° to 95° F (if they have at least 4 inches of bedding). Your bin should be kept in a dark or shaded area.

Worms need to breathe, so it is important that your bin has air holes to allow for ventilation and drainage. You will want to prop up your bin for proper drainage and ventilation. This can be easily done by using small wooden blocks or lids from plastic bottles.

Lastly, you should have a system to collect drainage. This can be done by using a tray, an additional bin, or a plastic tarp under your compost bin.

Bedding

Worms need bedding in their bin to stay comfortable. Bedding also serves as food and a medium to bury food waste and prevent odors. A great option for bedding is shredded paper. The bedding must be able to absorb water. You want the bedding to be moist and should feel like a wrung out sponge. If you notice your bedding drying out, you may need to add water or food with high moisture content.

The Worms

Eisenia fetida, commonly known as red worms or red wigglers, are perfect worms for composting. It is recommended to record how much daily food waste you generate for a few days so that you know how many worms you will need. It will also depend on how big your bin is. In general, there are about 1,000 red wigglers in a pound. Worms can be purchased online from reputable worm farms that sell worms by the pound and at stores that sell fishing bait. You might even be able to obtain some worms from a friend if you know someone who practices vermicomposting.

Feeding

Red worms can eat roughly half their weight in organic matter every day. The following organic materials can be fed to your worms: shredded paper and cardboard, fruit and vegetable scraps, grains, beans, or bread (without butter, etc.), leaves, tea bags, coffee grounds and filters. Make sure you include some gritty materials in your worm's diet, such as crushed eggshells, as it helps with digestion. Do NOT feed your worms meat, dairy, highly acidic fruits and vegetables, or salty or oily products as these items can cause strong odors, attract unwanted pests, or be harmful to your worms.

Let your worms acclimate to their new home before feeding them for the first time. After a few days, begin slowly adding food, burying it at least one inch deep to prevent odors. Add your waste every few days. Keep track of how long it takes for the worms to consume all of the food and what foods they seem to prefer.

Harvesting

After only a few months, the contents of your bin should look like a rich, dark soil. To utilize your compost, there are a few harvesting methods you can choose from:

- Cone method: Find an area that is protected from excessive light and heat, and lay down a tarp. Carefully empty the contents of your bin onto this area. Separate the pile into "cones" that are about 6 inches in diameter. Wait about 10 minutes so the worms can burrow down. Then, sift through each pile until all you have left is a pile of worms.

* U.S. EPA: <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management>