

GARDENERS

SUPPLY COMPANY

Worm Composting

Attention: Please read instructions immediately upon arrival to ensure proper care of your worms.

Arrival Information

Open the package immediately upon arrival. The worms may show little movement at first, especially if they arrive when outside temperatures are cold or very hot. To ensure their survival, place the worms in a warm (70 degrees F) location with suitable bedding as soon as possible. (See section on *Bedding Material*.)

During shipping, worms have a tendency to gather into a slimy mass. Some worms may die from the stress of travelling, so you may notice a strong odor when you open the package. This is normal. The odor will gradually disappear once the worms are placed in bedding and become active.

Your worms should become visibly active after 12 to 15 hours in the bedding. If your worms are not active after 15 hours—or if you have concerns about their health—please contact our Customer Service staff immediately at 1-800-876-5520.

Vermi-Composting

Worm composting (or vermi-composting) is a natural and efficient way to “recycle” your organic kitchen waste. Even in cold northern climates, where

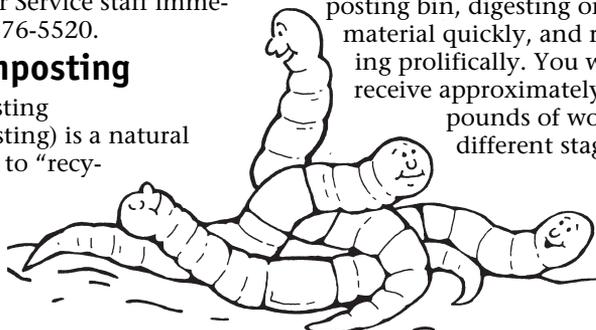
outdoor compost piles lie dormant in the winter, you can compost your food scraps indoors with worms, and reduce the volume of your household garbage by as much as 25 percent. The result is unsurpassed as an organic soil builder and plant fertilizer.

Worm composting is easy, rewarding, and fun. Given the right environment and a little routine attention, a handful of worms will multiply rapidly and digest your kitchen scraps faster than any other composting method.

To get started, you'll need a properly designed worm bin, bedding material, some water and food scraps, and a crew of hungry worms.

About Worms

Red worms (*Eisina foetida*), more commonly referred to as red wigglers, are ideal for composting kitchen scraps. Unlike many other species, red wigglers will thrive in the confinement of a composting bin, digesting organic material quickly, and reproducing prolifically. You will receive approximately 2 pounds of worms in different stages of



growth. They lose weight and moisture during shipment, but will return to their normal weight within 7 to 10 days.

Adult red wigglers will be 2" to 3" long and dark red in color. The younger worms are light-colored, and shorter. If you look carefully, the tiniest worms appear as white wiggling threads. These take about two months to reach breeding size. Red Wiggler eggs look like tiny tan beads. They normally hatch within three weeks, producing two to seven worms from each egg. Because the small worms may adhere to the peat moss, take extra care to be sure you transfer all of the material to their new home.

A Home For Your Worms

Composting worms require a moist, dark, well-drained and well-aerated environment. You can use almost any shallow, opaque container for a worm composting bin. It should have small drainage holes in the bottom and should be elevated about an inch off the ground. It should also have a lid to keep moisture in and keep light, house pets and other animals out. A metal wash tub, plastic dish bin, or a wooden box (except redwood and red cedar, which are too acidic) will do, as long as they haven't been exposed to pesticides or other harmful materials.

Keep the bins indoors or in a protected shaded area outside. Worms will not survive in extreme heat or cold, (they can tolerate 40 to 84 degrees F, but are most active between 55 and 75 degrees F).

Many people keep their worms in a utility room, basement, garage or on a shaded porch. If you do leave them outside, do not let the bin rest directly on the ground or you may attract worm-loving moles or rodents. Cover the bin to keep the moisture in and hungry birds out!

Worms do not require a large space to do their work. The surface area required for your bin will depend on the amount of food scraps your household generates. Generally, a surface area of 1 sq ft per person is adequate. It's important that the bin be no more than 14" deep. If the bin is too deep, the bottom layers of bedding and food scraps will begin to settle and the lack of air will inhibit decomposition.

Our own Worm Factory composting bin provides an ideal worm composting environment. The Worm Factory comes with a 3-tiered bin, worm bedding and instructions. It includes a drainage spigot to drain nutrient-rich water or "compost tea," a potent houseplant food and foliar feed for garden plants.

Bedding Material

The bottom of your bin must be lined with a 2" to 3" layer of bedding material. Peat humus is the best choice, because it's easy to use and improves the texture of the finished compost. But you can also use a soil-less "potting soil," hardwood sawdust, finely shredded cardboard or paper.

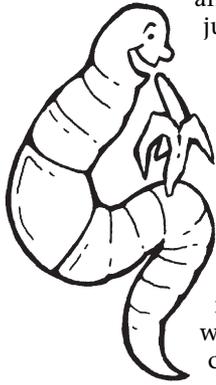
Dampen the bedding material with lukewarm water until it has about the same moisture content as a well-wrung sponge. Be aware of the moisture-robbing properties of newspaper. It can dry out the bedding if it's not properly soaked before adding it to the pile. Spread the damp bedding on the bottom of the bin and place your worms on top. They will burrow into the bedding, returning to the surface area for feeding in the evening.

Make sure the bedding material remains damp (not soggy) at all times. Worms need moisture to live, reproduce and process compost. Always check the moisture level of

the bedding weekly, especially during winter months and hot summer periods. When the bedding is dry, simply mist it with a spray bottle. Do not pour water onto the bedding.

Feeding Your Worms

Worms will crawl to the surface to do their feeding at night or under the darkness of a cover and they'll process just about any



kitchen scraps you have to offer. Avoid extremely salty, fatty, or acidic foods and keep meat, bones, fish, dairy products, and non-biodegradable material like food wrappers and bottle caps out of the bin.

If you are interested in the nutrient value of the worm castings, aim for a varied diet. Use moderation when adding any one particular item. For example, adding large amounts of pulp from citrus juicing can throw the pH out of whack. Too many banana peels, that tend to break down slowly, will cause a mess.

If you're using the worms in a large outdoor composter, you can also add a small amount of dry, aged horse, sheep, or rabbit manure to boost the nitrogen content of the finished compost.

The smaller the food scraps, the more quickly the worms will digest them. Break up large items like banana peels, melon rind, and bread slices before adding them to the bin. To get an idea of how much waste your worms can consume, start slowly with 1 to 2 pounds of kitchen scraps. We suggest that you weigh your scraps each day for a week or so to determine your typical weekly output in pounds (lb). Under proper conditions, 2 lb of worms will process approximately 7 lb of scraps a week, depending on worm activity and

variables such as temperature.

There are two ways to add scraps to the bin. The easiest method is to spread them in a thin layer on top of the bedding. If the bin is kept in a dark room, the worms will come to the surface to eat. Or, place the scraps in a shallow trench and cover them with bedding material. If you use this method, be sure the food is placed in a different part of the bin each time it's added.

It's best to add food scraps to the bin when the scraps are fresh. Holding scraps in a container for a week or more can lead to fruit fly problems. If you do experience fruit flies, sprinkle calcium carbonate (lime from stone not "quick lime") on top of the food.

Worm bedding shouldn't smell bad. If it does, your food scraps and bedding could be too wet. Use a trowel to loosen up the material and prevent anaerobic decomposition. Worms are surface dwellers and will not be active deep in the bin. If odors persist, the best solution may be to start over. Dump out the entire contents of the bin, wash it out, add fresh bedding, and a minimal amount of scraps. Sift worms out of the old compost and add them to the fresh bin. Add remaining old compost to your outside bin.

Harvesting the Compost

After several weeks, your worms will have digested much of their bedding and food scraps, leaving behind castings and compost consisting of decomposed food scraps, bedding, and worms that have completed their life cycle. The worm compost will look, smell and feel like rich, dark soil.

To harvest the worm compost, place the bin under a bright light. Because worms prefer darkness, they'll move under the top layer. Remove the top layer using your hands or a sieve. As the worms are exposed to the light, they'll continue their migration to the bottom of the bin. Pick out any wigglers or worm eggs and return them to the bin. Refill the bin with fresh layers

of moist bedding material and food.

Another method is to push the decomposed material to one side of the bin, and fill the other side with new, moist bedding and kitchen scraps. Then wait several days. The worms will migrate to the freshly filled side of the bin and you can simply scoop out the finished compost.

Worm compost is rich in phosphorus, nitrogen and other nutrients and minerals. It is a wonderful fertilizer for any house or garden plant. In the garden, simply work it into the ground around the base of each plant. The compost is very mild, so there's no need to worry about accidental burning or over-fertilizing.

Important Tips

1. Change the bedding regularly. Because worms are quiet and require very little work, they can be forgotten. If you neglect your worm bin, eventually the worms will die.

2. Strong odors or unwanted insects may be a sign that there is too much food for the worms to process. It takes a little practice to learn the capacity of your bin and how much food your worms can process. At

times, you may need to reduce the amount of food you put in and maintain an outdoor compost bin.

3. Don't throw non-biodegradable material like bottle caps, aluminum foil or plastic into your worm bin. The worms are unable to process this material and it's hard to sift it out of the finished compost.

4. Keep the bedding moist. Sprinkle with water if necessary and shade the bin if it is kept outside. Do not leave the bin in direct sunlight. Excessive heat can kill worms.

5. If you're using the worms in a large outdoor composter, you can add a small amount of dry, aged horse, sheep, or rabbit manure to boost the nitrogen content of the finished compost. Do not mix fresh cow, horse and especially chicken manure into your bedding. These manures will produce heat that can literally cook your worms.

If you have any questions about worm composting, please contact us.

Ordering Information

#02-232Red Wigglers, 2 lb
#33-250Worm Bin Factory