



How to Build a Vermicomposting Bin

Supplies:

Opaque plastic storage box with lid (see below)
 Drill
 1/8, 9/64 or a 5/32-inch drill bit
 Newspaper

Redworms (see below)
 Burlap, the same size as the bin (optional)
 Paper shredder (optional)

Plastic Bin Size and Redworm specifications:

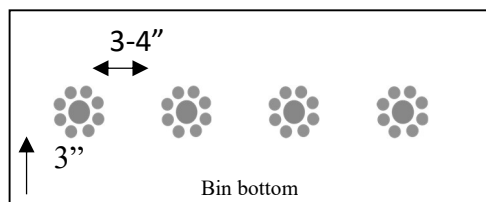
Number of People in the House	Worms needed (1 lb. ≈ 1000 worms)	Bin Size (ft)
1-2 people	1 pound	2 x 2 x 1
2-3 people	2 pounds	2.5 x 2 x 1
4-6 people	3-4 Pounds	3 x 2 x 1

- The above dimensions are estimates, if necessary, go slightly bigger and deeper.
- Hint: you will be digging around in the bin, so do not buy a bin that is deeper than your arm's length; you need to be able to reach the bottom.
- Worms are very sensitive to light, therefore, purchase an opaque bin that light can't enter.

Build the Bins

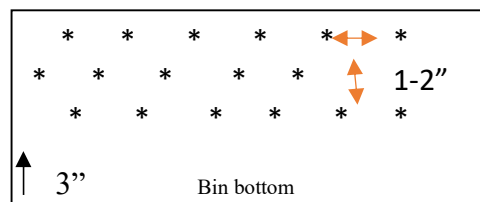
Add the air holes

- Option 1: Approximately 3 inches from bottom, drill holes within a circular pattern about the size of a half dollar, leaving a 3-4- inch space between the circles.
- Option 2: Approximately 3 inches from the bottom, drill 3-4 rows of holes. Rows should be about 1-2 inches apart from each other, and within the row, holes should also be 1-2 inches apart from each other.



Option 1

Option 2



Add Bedding

- Use a paper shredder to cut newspaper into strips, or tear by hand.
- Place the newspaper into the bin, covering the entire bottom, and at least 6-8 inches deep.
- Pour/spray water over the newspaper and stir so that all bedding becomes damp.
 - Be careful not to over-water as there is no drainage. If too wet- just add more bedding.
 - Bedding should feel like a wrung-out sponge.

ADD REDWORMS TO THE BEDDING

- Redworms are available at bait shops, worm farms and online sites.
- After adding the worms, place a sheet of newspaper or burlap over the top of the bedding and worms. This will help slow down the rate of water evaporation and help keep the bin dark.
- Place the lid on the bin, keep it cracked (if possible) to aid with air flow.

Vermicomposting: Worm Care and Bin Upkeep

The Bin Environment

There are a variety of organisms living inside the bin, redworms, at times other very small insects (“good bugs”), and occasionally patches of mold. Like the worms, good bugs and mold help break down organic waste. Eventually the mold will be consumed by the worms, but if it is a concern keep the mold out of sight by adding more bedding.

Like most living organisms, the redworms in the vermicomposting bin need shelter, water, air, and food.

Shelter: Worms do not have eyes but are very sensitive to light. As such, the bin itself and the bin lid provide the darkness worms prefer. The shredded newspaper replicates a pile of leaves, one of the the redworms’ natural habitats. Redworms desire a temperature between 55° and 75° F. Therefore, do NOT place the bin in direct sunlight nor near heating or cooling vents.

Water: Redworms don’t need water in a bowl to drink. Instead, they need water to keep their skin moist so that they can absorb oxygen through their skin (worms don’t have noses). Never have standing water in the bin (worms aren’t fish - they don’t have gills). Instead, use a spray bottle to keep the bedding as moist as a wrung-out sponge. Over top of the bedding place a sheet of newspaper or burlap to slow down the rate of water evaporation.

Air: Lightly toss the bedding every week or two to create air pockets for the oxygen/carbon dioxide exchange. To aid in the air flow, keep the bin lid cracked. If stored in a dark room keep the lid off completely. This will also keep the bin from overheating.

How and what to Feed the Redworms

Since worms have tiny mouths, in order for them to process the food more efficiently, when possible, break the food into smaller pieces. Worms also have no teeth. Microorganisms soften the food before worms will eat it. The redworm uses a muscular gizzard and the help of some grinding material like sand or ground up eggshells, to grind their food into smaller pieces. No matter the size of the food pieces, it is essential to bury the food within the bedding so as not to attract fruit flies.

One pound of worms (about 1,000 worms) will eat about ½ pound of food a day. As the worm population increases, the daily amount of food can increase as well. Overfeeding will cause the bin to have a foul odor creating anaerobic (lacking oxygen) conditions. To correct the problem, stir the bedding to create air pockets, and don’t add more food until you see a reduction in the amount that is already in the bin.

Redworms EAT organic matter such as:

(This list is not all inclusive)

Vegetable scraps and peels

Fruit scraps

Beans

Coffee grounds

Tea bags

Paper and Cardboard

Breads and pastas

Cereals (avoid super sugary cereals)

Eggshells (aid in food grinding & calcium for plants)

Leaves and grass clippings

Sand (aid in food grinding)

DO NOT include:

Meat and Fish (odor causing)

Dairy products (odor causing)

Bones

Oils

Overly salty food

Overly sugary food

A large amount of citrus (affects the pH levels in the bin)

When and How to Harvest Castings

Approximatley every 4-5 months, once the majority of the bedding has been eaten, stop adding food or water to the bin for a week or two to allow the castings to dry out slightly. The drier the compost the easier it is to separate the worms from the castings. There are a variety of methods to harvest the compost. Using trial and error, pick the technique that works best for you.

1. Push the compost to one side and add fresh bedding and food scraps to the other. Over a few weeks, the worms will move to the fresh bedding, and then the compost can be removed. Keep in mind, especially if introducing invasive animals to your garden is a concern, that worm cocoons and the very young worms will not transfer over.
2. Dump the entire contents of the bin onto a covered work table. Depending on space, you can work with 1 large pile, or to make it easier to work with separate the contents into a few small piles. Using a small paint brush and a work light, systematically separate the worms from the compost. Shine the light onto an area of the compost pile for 20 minutes or so. The worms will wiggle away from the light. Then using the paint brush sort through that lighted area looking for eggs, the young and any stragglers. Repeat until the entire pile is gone. This process typically takes a few days. When not actively harvesting the compost, place a newspaper over the pile to protect the worms from the light.
3. Dump everything onto a tarp outside on a sunny day. Heap the compost into a pyramid and wait for the worms to move to the bottom of the pyramid. Brush the compost off the outside of the pyramid and wait for the worms to burrow deeper. Keep doing this until you are left with a ball of worms.