



Building a Worm Bin the Easy Way

MATERIALS NEEDED	TOOLS NEEDED
2 solid core dark plastic bins at least 14" deep with lids; minimum 10 gallons	Drill
Old T-shirt or towel or piece of burlap	1/4" drill bit
Shredded newspaper	1/8" drill bit
Pieces of egg cartons or cardboard toilet paper rolls	sandpaper
Cardboard or brown paper bag approximately the size of the top of the bin	

A TWO-PART WORM BIN

The "Working Bin" is where the worms live and eat and hide. This nests into a "Collection Bin" that keeps your bin location clean by catching any spillage, especially worm leachate — good stuff that we'll talk about later.

WORMS NEED AIR, MOISTURE (SOME), BEDDING, AND FOOD

PREPARING THE WORKING BIN (THE WORMS' HOME)

1. Make air holes. Drill eight (8) 1/8" holes in each end of the bin, four on each side of each handle.

Drill eighteen (18) 1/8" evenly-spaced holes on each side of the bin about 1 inch from the top. When the bins are nested, the holes must be exposed. Drill the holes on the sides and the ends in patterns like this →.



2. Turn the bin upside down and drill twelve (12) 1/4" holes in the bottom of the bin for drainage all around. These holes will let the worm leachate drain into the outer Collection Bin. Most plastic bins have an inner ridge of plastic to strengthen the bin's structure. Drill eight (8) 1/4" holes in that as well.
3. Be sure to remove any plastic from the holes so that there is no residue. If necessary, sandpaper over the holes and wipe up the pieces of plastic and plastic dust.
4. Cut the T-shirt/towel/burlap in a double layer so that it covers the bottom of the bin and goes 1 to 2" up the side. This will discourage the worms from going through the holes.

ASSEMBLING THE WORM BIN

Nest your two plastic bins together so that the inner Working Bin has at least 2 inches of space between its lip and the lip of the outer bin, the Collection Bin. Usually the handles keep the bins from fitting too tightly. If your bins nest too closely together, the worms won't get the air they need. If that's the case, put a brick or 2x4 block of wood in the bottom of the Collection Bin to raise the Working Bin and make it easier to lift out when needed.

GIVING THE WORMS BEDDING

Material Needed: Newspaper, egg cartons and/or insides of toilet paper rolls, a brown paper bag, and water.

1. Cut and crumble sheets of newspaper and fluff them up in the Working Bin. Spray or dribble water on them. The bedding should feel like a moist sponge. The bedding should fill the bin to just below the holes you drilled.
2. Worms like hiding places, and the pieces of egg carton or a torn up toilet roll serve nicely. Wet the egg carton pieces/toilet rolls and the brown paper bag or cardboard.
3. Put the wet egg carton pieces/toilet rolls in the middle layer of the damp shredded paper bedding.
4. Install the worms with the soil they come in on one side of the box in the middle of the bedding. Put the food (see next section) on the other side of the box in the middle of the bedding.



5. Lastly, put the wet brown paper or cardboard on top of the bedding (but below the vent holes) after adding the worms & food and place the lid on top.

FEEDING YOUR WORMS

1. One pound of worms can consume between 2-4 pounds of food per week.
2. Bury the food in a different place every few times you feed the worms.
3. Don't move the bedding too much as this will heat it up and could kill the worms.
4. Add bedding as needed; the worms do eat it.
5. Worms need a "temperate" environment: too cold they do not reproduce as much, too hot they may die.

What worms: Red Wigglers (*Eisenia fetida*). These eat 2-3 times their weight in food per week.

NOTE: Worms aren't fastidious about what they eat, so we have to be careful to keep them healthy. We also don't want to put food out that will draw undesirables.

Like: raw fruits & vegetables such as melon, potatoes/pears/banana including peels, lettuce, carrots, & peas.

Limit: acidic food, citrus, cabbage, red cabbage, cauliflower, avocado+ pit + skin.

Avoid: onions, leeks, milk products (lactose), meat, fish, cooked food, fruit pits.

GETTING THE BLACK GOLD – HARVESTING THE WORM LEACHATE & CASTINGS

WORM LEACHATE: This accumulates in the Collection bin. Check at least once a month, and empty the bottom bin as needed. Mix with water (preferably rain or purified) 20 to 1 and use as fertilizer on plants.

CASTINGS: As the food is eaten, it is transformed into castings. These can be a fairly thick moist mass.

HARVESTING: To harvest, you need to separate the worms from the castings.

1. Put a large piece of bread into the Working Bin 2 or 3 days ahead of time. The worms will collect on the bread.
2. Remove and set aside any loose uneaten food in the Working Bin. Then turn the bin contents out onto a large piece of plastic.
3. The worms fear the light and will go to the bottom of the pile.
4. After 10 minutes or so, remove the top of the pile and set it aside ensuring that there are no worms in it.
5. Repeat every 10 minutes until you have harvested most of the castings, and you've got a pile of worms all trying to get under each other.
6. Rebuild the bin bedding, and put worms back in with the remainder of the food and new food as needed. After a while, you may need to replace the burlap/T-shirt liner as that will also be eaten.
7. You can either dry the castings and sprinkle a bit around your plants (not too much as it is very strong) or you can make worm tea out of it by adding water (preferably rain water) in a ratio of 10 cups water to 1 cup castings. Let the mixture sit overnight before using as a soil drench or foliar spray.

This document was co-produced by the UC Master Gardener Program of Contra Costa County and RecycleSmart (<https://www.recyclesmart.org>). Both organizations share the goal of promoting sustainability in our communities.



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