

Low Cost Homebuilt Worm Casting Harvester



What is vermicompost? Vermicompost is the castings or worm poop from organic waste streams. *Eisenia foetida*, commonly known as red wiggler, brandling, or manure worms, to break down organic materials and food scraps from your house hold. The vermicompost can then be used to amend soils in your garden and house plants.

The finished castings must be separated from the worms and bedding to create a uniform quality product. An 1/8 inch wire mesh screen cut 12 inch by 12 inch can be used to separate the castings. A hand full of bedding is placed on the screen and then shaken by hand over a container. The finished castings fall through the screen and

the unfinished bedding, worms and eggs is put back into the worm bin for further processing.

Harvesting the worm castings with this method is very time consuming. A one cubic foot area of bedding takes about an hour to process. Each week the worm bin will produce this same amount of material to be harvested. Now we are looking at 52 hours a year harvesting castings.

Composting worms are very prolific and with enough food and room their population grows exponentially. Larger compost bins require a better harvester. There are commercial harvesters available from \$150 to thousands of dollars but this is not economical for most home vermicomposters. The following harvester turned out to be low cost, easy to use and easy to store item that any one can build with minimal tools.

Materials list:

- 4-Four wire, paint roller frames
- 1-3 ft X 2ft, 1/8 in galvanized Hardware cloth
- 1-roll Duct tape
- 1-roll 24 GA Floral or hobby wire
- 2-1 ½ ABS black plumbing pipe, cut 32in long
- 1-5 gallon round bucket
- 2-2X4X4 ft used
- 8-drywall screws 1 ½ in

Total cost should be less than \$35 dollars but using recycled materials will reduce overall costs and is always good for the environment.



Assembly:



Step 1: The bucket was sectioned into two, four inch segments. The top and bottom were not used in this project. Please remember to use proper personal protective equipment and read your owners manuals for proper tool usage.

Step 2: Wrap the hardware cloth into a cylinder around the outside of one of the bucket pieces and duct tape in place. Use a clamp or piece of hobby wire to secure other end of the cylinder.



Step 3: Use the 24 gage wire to lace up the hardware cloth making a tight weave. You may have to double back to get a tight seam.

Step 4: Place the cylinder in side the other bucket piece and duct tape in place. Other forms of fasteners may be needed to hold the hardware cloth cylinder to the plastic bucket. Short sheet rock screws inserted from the outside to inside work well. Keep the outside of the cylinder as smooth as possible to avoid catching yourself when operating the harvester. Replace the duct tape when necessary.



Step 5: The cradle is assembled by pre-drilling the paint rollers. Two holes parallel to the roller through the handle.

Step 6: Screw the rollers to the 2X4s 10 inches apart with 11/2" drywall screws. Find the center of the 2X4 and measure 5 inches each side. The PVC pipes slide onto the rollers, but not affixed to allow for break down of the assembly for future moves.



Operating the Harvester

This is a manual operated harvester but with the rollers operates very easily with a large load of worm castings. The design can be modified for larger screen sizes, but the 1/8 hardware cloth gives a very nice casting and the worm eggs go back into the worm bin.

The moisture content is very important when using a screen harvester. The castings normally need to have the moisture content reduced compared to the rest of the worm bedding. A good rule of thumb is when you grab a handful and compress it should form a clump, but then break apart again into a fine texture.

The harvester pictured is set up on saw horses but can be set up over a plastic storage container, on a table or anything that suits you. Load the screen with a small shovel full of worm bedding. A large soda cup works well as a scoop.



Grasp the top of the cylinder and pull down towards yourself and let it roll. One end of the harvester may need to be elevated so the material travels out the opposite end it is loaded. Make sure you have a container to catch the material larger than the screen. This can be mixed back into the worm bin and usually contains many worm eggs and unprocessed worm bedding.

Building this low cost home harvester you will be amazed at the quality of your castings and the ease and speed of harvesting your bin.

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