DIY Guide to Worm Composting

Why Compost?

Instead of throwing away food and other biological scraps, composting creates valuable fertilizer and soil amendments. Chemical fertilizers and pesticides destroy the natural balance of microorganisms. Compost encourages life and vitality of the soil, which creates healthier food.

Why Worms?

Worm composting allows you to compost indoors, all year round. The worms feed on the bacteria, fungi and algae that develop on the decomposing food scraps. Worms produce worm castings that are high in plant absorbable nutrients.

Process

A bin is partially filled with bedding material, in which worms are added. Bedding can be leaves, shredded newspaper, sawdust, peat moss, coconut coir, etc. We prefer coconut coir. Food scraps are buried in the bedding material. As the food decomposes (covdered by bedding to prevent smell), the worms consume the decomposing materials. The volume will reduce as the food is consumed. Push the old material to the side, and add new bedding and food to the new side. The worms will migrate to the new side, and the old material can be scooped out for planting.

Prepare the Bin

Start with a 68 quart tote (exact size not critical), usually around $10 or less at Walmart or your local pharmacy. Sterilite is the brand we use. Get the dark ones (blue or almond), not clear, as worms do not like light.

Next, drill eight 1/4” inch holes in the bottom, four to a side. This will help with drainage. Put the lid under the bin, upside down, to collect possible drainage. You can put a hole in the lid with a bucket under it to collect the “Worm tea”. Mix this with water and use to water your plants.

Now drill four or five 1/4” to 1/2” holes on one side about 3” from the bottom, and four or five more on the other side 2” from the top. This helps with ventilation if you put a lid on top of your bin (keeps cats and mice out of the bin). Put 8 of these holes in the lid, 4 to a side for additional ventilation.

Prepare the Bedding

We use coconut coir as bedding, as it is very absorbent, stays loose and aerated, the worms like it, and it makes great potting soil. It also is a waste product of the food industry, so we like the recycling aspect of using this product. Other types of bedding that could be used are most carbon based cellulose materials, such as leaves, shredded newspaper (not color), shredded computer paper, aged or composted (at least 2 days old) animal manures (rabbit is ok fresh), wood shavings / sawdust (must be mixed with other materials), and peat moss (not very sustainable). Each of these has their advantages and disadvantages. What you want is light and fluffy, ability to retain moisture, non-toxic. A new material we are experimenting with is ground up corn cobs. It”s available at hardware stores as a sand blasting medium.

In a bin that has no holes drilled, put the compressed block of coconut fiber in the bin, and add the amount of water suggested on the package. We use 7 gallons

per 11 lb. block of fiber. This makes approximately 70 quarts, so if you are using a 68 quart container, break the block in half, and use 3.5 gallons of water per batch. The fiber will absorb the water and break apart. Mix thoroughly. Make sure you use warm water. Cold water will make the worms go into evacuation mode, and you will have to scramble to warm the bed, and catch your wayward worms.

What kind of Worms

We use the red worm, or manure worm, officially called Eisenia fetida. These worms live at the litter area, and do not borrow deep into soil like the nightcrawler. The nightcrawler does not make a good worm for vermiposting.

Bed the Bin

Lay about 5” deep of fiber in your prepared bin. Spread 1 lb. of worms across the fiber, spread a layer of food (ground up in a blender or food processor is best), cover the food with another 2” of fiber, and cover with B&W newspaper. Wet the paper with a water filled sprayer as necessary to keep it moist. The bedding temperature should be between 60 and 80F. They will be ok at 50F, but will be sluggish, or may try to find a warmer home.

Feeding the Worms

Spread the new food on top of the wet newspaper, cover with 2” of fresh fiber, and cover again with newspaper, remembering to keep it moist at all times. Keep doing this until the bin is full. As the worms eat, the volume of the bin will reduce. Again, ground up food is best. A whole banana can take weeks to digest.
One worm can produce 3 babies per week. They reach maturity in 5 to 6 weeks.
It usually takes ten weeks before they start reproducing. 8 mature worms can produce 1500 offspring in 6 months. All this is affected by temperature, moisture, food availability, and population density.

Harvesting Compost

After about 3 months, push the contents to one half of the bin, and start the empty side fresh. Most of the worms will migrate to the new half in a week or two, and you can scoop out the compost from other half for your plants. Rebuild that side when you have removed the compost.

Potting Plants
Take 50% compost and 50% fresh fiber, mix together, and use this for potting soil or seed starting.

Manure Composting

We have a separate bin for humanure and pet poo that is working out wonderfully. The cats are fine with coconut kitty litter. We use a 6” deep tote for a kitty litter box, and a 5 gallon bucket with snap on toilet seat and lid for humanure collecting. The idea is to cover each deposit with about 2” of coconut fiber to eliminate smell, and empty the containers into one of the worm bins for composting. Do not use the pet poo for edible food growing.

Update: This uses a lot of coconut fiber. The ground corncob works very nicely as a replacement.

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