



Trash to treasure — WITH WORMS

Your vegetable garden's best buddies will work all winter for scraps

By Mae Smith

In goes garbage, out comes black gold.

Vermicomposting (composting using worms) is a great way to recycle food waste into a product that will help ensure a bumper vegetable crop next year.

Fall is a great time to think about setting up a vermicomposting system. All winter, the worms can eat kitchen scraps and, by spring, you will have a great start on compost for the garden.

There are five ingredients in a successful vermicomposting system:

1. Container
2. Bedding
3. Water
4. Worms
5. Non-fatty kitchen scraps

Container

Containers can be purchased or built. Plastic storage containers are light, convenient, and come in a variety of sizes. Wooden bins can be more durable and provide better air movement.

Surface area is more important than the type of material. Containers 1-foot deep or less work best. They

are more efficient and have less potential odor problems than those that are deeper.

Mary Appelhof, author of *Worms Eat My Garbage*, suggests a 1-2-3 Portable Worm Bin, which will take care of food scraps for a family of four. This bin is made of wood and is 1-foot deep, 2 feet wide and 3 feet long.

Holes (¼ – ½ inch) drilled in the sides and bottom of the bin allow air movement while keeping the bin dark. More holes are needed in a plastic container than one made of wood for better air circulation and so there is no condensation on the inside. The wood bins breathe better and don't collect condensation on the inside.

The bin should be raised on bricks or blocks with a tray underneath to catch the "worm tea" (the juices that are secreted). This worm tea is packed full of nutrients and can be used as liquid plant fertilizer.

Depending on the size, the bin can be kept in the house, in a heated garage, or outside depending upon the temperature and available space. If it is easily moved, the bin can be inside during the winter and outside (in a shady spot) in the summer.

Bedding

Once built or purchased, the next step is bedding. Here are some materials that make great bedding:

- Shredded newspaper – the ink is not a problem, but the bleach used in computer copy paper is not desirable
- Shredded corrugated cardboard – avoid cereal boxes with a lot of color
- Coconut coir (fibers)
- Leaves
- Peat moss – but can be acidic and expensive
- Manure – must be aged well and been through the heat cycle previously heated to a temperature of 135-150°F for several days (may not be suitable for indoor bins because of the odor)

Water

The bedding should be moistened before the worms arrive. Wet the bedding and allow the water to soak in (this could take up to a full day). Wring out excess moisture so the bedding feels like a wrung-out sponge. Maintain this moistness even after the worms have been working a while.



A 1-2-3 vermicomposting bin. The box is 1-foot deep, 2 feet wide, and 3 feet long.



Holes in the bottom allow collection of "worm tea" – the juices secreted and used for liquid plant fertilizer.



Bedding ready for worms.



Holes drilled in the sides allow for air circulation. Having the bin on legs allows collection of the worm tea.



Worms will migrate to scraps on the bedding.

Prevent gnats and fruit flies from becoming pests by making sure food scraps are buried under a thin layer of the bedding.

Worms

The best worms to use are commercially grown red worms (*Lumbricus rubellus* or *Eisenia foetida*). Common garden worms do not do well in home composting systems. Red worms grow best in temperatures between 55 and 77 degrees F. The bedding temperature should not dip below freezing or exceed 84 degrees.

Obtain the worms through lawn and garden catalogs, websites, bait stores, or harvest them from a friend's copious worm bin when their worms are stampeding.

Place the worms and their transport material in the bin.

Non-fatty Kitchen Scraps

Tips for feeding worms:

- Start adding food slowly so helpful bacteria can buildup in the bin. Worms may not eat the garbage right away.
- Worms LOVE fruit and vegetable scraps, coffee grounds and

filters, tea bags, pasta.

- Worms DON'T love fat, meat scraps, bone, oils, chemicals, non-biodegradable materials.
- Feed starchy foods, garlic, onion skins, and citrus rinds sparingly.
- Worms have gizzards like chickens, so they need fine, gritty material such as coffee grounds, cornmeal, or soil.
- Worms don't need fed every day; once or twice a week is fine. They won't starve because they will eat bedding, too.
- Place scraps in one area of the bin and cover with a layer of bedding (reduces odor and pests). Rotate where you add the scraps. The worms will migrate to the new food when they are ready.

Harvesting Your Treasures

After feeding the worms three to four months, they have probably eaten most of your "trash" and turned it into "treasure." At this point, you may want to start harvesting the compost

(or you can wait longer but add moist bedding if needed and, eventually, the bin will get full).

You can either:

- Move the material to one side and add fresh bedding to the other side. Feed the worms in the new bedding and wait a couple of days for them to migrate. Scoop out the finished compost making sure you leave worms and their eggs (small, opaque cocoons) in the bin.
- Shine a bright light on the surface so the worms migrate to the lower layers. Harvest the top layers watching for worms and eggs. Replenish the bedding and food.

Use this rich, black natural fertilizer on potted plants or work it into your garden soil. It is packed with nutrients but mild enough you don't have to worry about burning or over-fertilizing.

When not wrangling worms, **Mae Smith** is a University of Wyoming Extension educator specializing in rangeland resources. She is based in Carbon County and serves southeast Wyoming and can be reached at (307) 328-2642 or at maep@uwyo.edu.