

Vermiculture: Worm Composting

by Skip Richter, Travis County Extension Director

Basic Requirements

A shallow container - about 12" deep, with a cover to keep it dark inside the bin.

A controlled temperature - the temperature of the bedding material should not exceed 84 degrees F. The optimum temperature range is 55-77 degrees F.

Moisture - worms need water to keep their skin moist, but not so much that they drown

Ventilation - worms need air to breath. There are also other little organisms that are at work breaking down the organic material placed in the bin. These organisms need air. If there is not enough oxygen, the worms and other helpful organisms will die. Microorganisms that do not need air will move in, rotting the material in the bin and giving off unpleasant smelling gases as a byproduct.

Food - our trash is their treasure. Fruit, grains, vegetables, egg shells, coffee grounds, and tea bags are all fine. Avoid meat, fish, milk, fats and oils, and pet droppings.

How many worms will I need?

The first step to setting up a healthy worm bin is to determine how much organic matter will be added each week. (This may require some weighing until you feel comfortable estimating amounts.) Divide the amount discarded by seven to determine the average amount of daily waste. The recommended "worm to garbage" ratio is 2:1. So for each 1/2 pound of kitchen waste you should have 1 pound of worms.

What size worm bin do I need?

Again we return to the amount of waste produced each week. The minimum recommended amount of space is 1 square foot of surface for each pound of garbage. As an example:

If your household produces 6 pounds of waste per week, a good size for your bin would be 2' x 3' x 1'.
Hint: It might be helpful to start with this size bin, restricting the amount of waste you add until you are familiar with the process.

How do I set up my worm bin?

Determine how many pounds of garbage you plan to dispose of in this manner.

Calculate the amount of worms needed.

Calculate the amount of surface space needed.

Secure a container of the proper size, either purchased or built.

Collect newspapers to shred, and a gallon jug to measure water. Example:

For a 2' x 3' x 1' box, from five to eight pounds of newspaper is recommended. After weighing out the proper amount, begin shredding the paper into 1" strips; crumple it up to prevent matting. Multiply the weight of the paper by three to determine the amount of water needed. (A gallon of water weighs approximately eight pounds.)

Mix the shredded paper and water thoroughly. It is very important that all of the paper be wet. If there are puddles of water remaining in the bottom of the container, pour them out or add more paper. Also mix in one to two cups of soil to supply grit for the worms.

When the worm bin is set up, open the container of worms and dump them on top. Spread any clumps of worms over the surface. The worms will start moving into the bedding to avoid the light. Leave the lid off and the light on; after about an hour remove any worms that have not made their way down into the bedding—these worms are probably not going to make it. It is now ready to add the food scraps.

Adding kitchen waste...

A good method is to divide the box into twelve imaginary squares. Rotate through the squares as you add material to avoid burying stuff in the same place too soon. Try not to "overload" the system.

DO NOT USE NIGHTCRAWLERS OR EARTH-WORMS. USE ONLY BROWN-NOSED WORMS OR RED WORMS.