Worm Composting

Worm composting (also called vermicomposting) uses worms to convert organic matter into high quality compost. Vermicomposting is being used on a small scale by many backyard gardeners and on a large scale to reduce waste and create excellent organic fertilizer.

Red worms are the best choice for vermicomposting. Garden worms and night crawlers are adapted to living in the soil and will not thrive in a worm bin. In nature, red worms live in manure and are well suited for breaking down organic materials. Red worms are also known as red wigglers, manure worms, red hybrids, striped worms, fish worms and many others. Red worms can be purchased from dealers or mail ordered. One or two pounds of worms are adequate for the methods described in this article.

Most home vermicomposters use a wooden or plastic bin as a worm container. A common worm bin is a 10-gallon plastic tub. The container should be shallow (no greater than 18") because the worms feed near the surface. Bin aeration is provided by drilling 1/16" drainage holes in the bottom (about 20 or so) and a few in the sides near the top so air can circulate through. The bin should be elevated on wood blocks or bricks to provide air circulation on the bottom and a plastic or metal tray can catch the drippings (use it as liquid fertilizer). During winter, small bins can be kept in a garage, enclosed porch, basement, or other protected area. Red worms prefer temperatures between 55 and 77 degrees F.

To start your vermicompost, create the bedding using a few handfuls of sterilized soil or sand mixed with shredded newsprint or computer paper, crushed leaves, dried yard waste (not green grass clippings), cardboard, or other bulky organic matter. Do not use glossy paper or materials printed in color. Moisten the materials with water so that they feel as moist as a wrung-out sponge. Add the worms and observe them over time as they reduce and recycle.

Worms thrive on almost any vegetable or fruit scraps. Coffee grounds (filter included), tea bags (minus the tag), rotten produce, stale crackers, and a host of other materials are suitable worm food. Add crushed eggshells or small quantities of lime to balance the pH. DO NOT feed worms pet feces, kitty litter, non-biodegradable material, or foods high in fats and oils. Bacteria and other organisms break down the garbage and the worms do the rest, turning everything into high quality, odor free, humus. Under optimal conditions, worms will eat their weight in waste each day and double their population every 60 days.

To harvest the castings (composted material), you must separate the worms from the compost. This can be done using a simple homemade sieve made out of 3/16" hardware cloth. Remove the bulky material at the top of the bin and set it aside in a plastic bucket and sift the castings separating the worms and placing them in the bucket as you go. You will end with a rich organic soil amendment and bucket filled with worms and bulky debris. When done, reconstruct the vermicompost bin as outlined above, add the worms and reserved bulky material and you are good to go.

Additional Resource:

Vermicomposting and Earthworms , University of Arizona (4-H)

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Adapted from original Backyard Gardener publications by Jeff Schalau, Agent, Agriculture & Natural Resources, University of Arizona Cooperative Extension, Yavapai County