

Home & Heart



Kathleen Jarschke-Schultze

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There are a few rules that I live by, and Bob-O has encouraged them as a means of self preservation.

One rule is that I don't bring any furniture into the house unless I get rid of an equal amount. This also applies to tchotchkes (pronounced "chach-key," meaning a pleasing trifle). A tchotchke is, to Bob-O, anything that you keep around simply because it is pretty. Or in his words, a dust magnet. But, hey, look at the spelling. For me it's a genetic calling.

Animal Farm

One hard and fast rule is that we have no lactating animals. Bob-O already went through his lactating animal phase of back-to-the-land in the 70s. Other than that one animal rule, I have a free hand. That is why I have bees, am planning to acquire poultry soon, and have started a home vermicompost system—a worm bin.

This spring I called the local Agricultural Extension office and asked if anyone raised rabbits in our area. No one did commercially, but they gave me the name and number of the 4-H Rabbit Raising Advisor. I called him, and he promised to let people know that I was looking for rabbit manure. Within a week, we got a call. A man whose children raised rabbits was moving. He wanted all the manure under the cages removed. We got a pickup truck load in about an hour.

Ever since Bob-O raised rabbits, he has preferred rabbit manure for the garden. Next is horse manure and only as a last resort will we use cow manure. Too many weed seeds.

Tub-O-Worms

As we were loading the manure, I could see a large population of red worms (*Eisenia foetida* and *Lumbricus*

rubellus) in it. Although I knew they were the right kind of worms for composting, I didn't learn the official names until I read up on the subject. When we got home, I filled our old bathtub with some of the manure, and the rest went to the garden. After we remodeled our bathroom, we moved the old bathtub out under the large apple tree. I thought I would bury it to ground level and use it for a pond. This spur-of-the-moment use turned out to be much better.

I covered the tub with a wooden pallet to keep our dog and the wild varmints out. I was using a two gallon bucket to collect food scraps in my kitchen for composting. I use a Sun Frost solar Scrap Eater for most of my household composting (see *Home & Heart*, HP63). Now I alternate between the Scrap Eater and the bathtub. By burying the food scraps and sprinkling water occasionally, I was able to see a healthy population of worms grow in the tub throughout the summer. I used a pitchfork to aerate the manure. I added a seven gallon bucket of sawdust once and worked it in.

The process was working really well, but winter was approaching. Bob-O said he would bury the tub so I could use the ground as insulation. But I was afraid the metal tub would wick the freezing temperatures and kill the worm population. It's necessary to keep the worms' environment at temperatures between 50 and 84°F (10–29°C).

I borrowed Mary Appelhof's book, *Worms Eat My Garbage*, from my local library. The book has calculations for a worm bin 2 feet by 2 feet by 8 inches (60 x 60 x 20 cm). I had a wooden drawer left over from the bathroom remodel. Its dimensions were 30 by 18 by 9 inches (75 x 45 x 23 cm). Another common size for the home worm bin is 1 by 2 by 3 feet (30 x 60 x 90 cm), which will accommodate the food waste of four to six people. My drawer size would work for one to two people. Complete assembly instructions for the two bins are in the book.

Bin Preparation

I drilled about forty 1/2 inch (13 mm) holes in the drawer bottom for drainage and aeration. I set the bin on bricks in my basement, so air could flow around it. The next step was to choose a type of bedding. I used shredded newspapers because I had them. For my bin, I needed 4 to 6 pounds (2–3 kg) of dry bedding. The 1 by 2 by 3 foot bin (1–2–3 bin) would have used 9 to 14 pounds (4–6 kg) of dry bedding. It took a while to shred enough paper. Other options for bin bedding are shredded cardboard, chopped straw and other dead plants, seaweed, sawdust, peat moss, aged manure, and leaf mold.

A worm's body is 75 to 90 percent water. So the bedding must also be that wet. The formula is three pounds of water to one pound of bedding. My bin has 6 pounds of dry bedding so I had to add 18 pounds of water. One gallon of water weighs 8 pounds (3.6 kg). After adding the water, I mixed two handfuls of sand and soil into the bedding to aid in the worms' digestive process. They have something called a crop that acts like a gizzard in a chicken, so they need grit in their diet. The bin is covered with thick layers of newspaper to keep the moisture in and keep it dark for the worms.

Waste vs Worms

The ratio of worms to daily food waste is 2 pounds of worms to 1 pound of waste. If you collect your food waste in a 16 ounce tub, it will be easy to calculate one week's weight of waste. My bin has 1 pound of worms in it. They will consume my food waste of 1/2 pound per day. The 1–2–3 bin would house 2 pounds of worms that would consume 1 pound per day of food waste.

Fun of Sorts

Now for the fun part—sorting the worms from the manure. The swell method is to make small cone-shaped piles of the manure on some flat surface. I used a 4 by 4 foot piece of plywood. As the worms recede into the core of the pile, just keep removing the outer layer of composted material they push to the top. The really great thing about this method is that you end up with a pile of almost pure worms. This helps a lot if you are going to weigh them. Since my worms were all different ages and sizes, they are called pit-run worms and average about 2,000 worms to a pound.

Waste Trail

It will take two to three months for the worms to process each batch of buried waste. There is a pattern to use in burying the waste. Start at one corner and bury your waste under 1 or 2 inches of bedding. The next time you bury waste, put it in front of the last place. Keep doing this until you get to the other side of the bin. Then move over and use the space directly beside your last site.

Now continue back across the bin. The pattern will look like a long wavy line from side to side across the bin area. When your waste has been buried throughout the bin, start the pattern again. By the time you have returned to the first site, the worms will have broken down the food waste enough that you can bury the new waste there.

The idea is that by always having the waste buried next to the last site, the worms can just progress along the waste trail without having to go look for it. Some worms will stay at each burying site and continue to work on the composting process.

Worms will eat fruit and vegetable scraps, egg shells, tea leaves, coffee grounds and filters, breads and grains, cottage and cream cheese. Actually they will eat too many foods to name. Basically stay away from oily foods, meats (will smell bad and attract flies), and any non-biodegradable objects.

Worm Continuum

After two and a half months, the original bedding will now look like brown crumbly earth. Harvest the compost by moving the old bedding to one side of the bin. Add new bedding, bury new waste. The worms will move into the new bedding over time. You can remove the finished compost (castings) to use as a soil conditioner for any and all plants in the house and garden. If you want to get all the castings at once, use the pile and sort method described above.

I highly recommend the book, *Worms Eat My Garbage*. It takes you step by step through the whole experience. There is even a worksheet if you want to keep records. Mary Appelhof's Web site is also a must.

Access

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Worms Eat My Garbage, by Mary Appelhof, 1997, ISBN No. 942256-10-7 • Flower Press, 10332 Shaver Rd., Kalamazoo, MI 49024 • 616-327-0108
Fax: 616-327-7009 • nancy@wormwoman.com
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Victoria Compost Education Centre, 1923 Fernwood Rd., Victoria, B.C. V8T 2Y6 Canada
Compost Hotline: 250-386-9676 • Fax: 250-386-9678
compost@ampsc.com • These folks are good source of printed reference material, and have quite a good program promoting vermicomposting, as well as worm bin kits for sale.

Worm Digest, PO Box 544, Eugene, OR 97440
Phone/Fax: 541-485-0456 • mail@wormdigest.org
www.wormdigest.org • A quarterly newspaper on worms and worm composting. Subscription (4 issues) US\$12 per year in the U.S.

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