

WormEzine

Vol July 2002

News and information from Mary Appelhof

... about vermicomposting, worms, and other critters that live in the soil.

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For the Small Print, scroll to end.

They laughed when I said worms eat my garbage,
but I showed them how, and now thousands say the same thing ...

A WORD FROM MARY APPELHOF

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Global warming is here ... at least it feels like it here in Michigan. I'm sweltering from the 90+ degree temperatures and 75% relative humidity. I checked my patio bench worm bin, however, and the worms are doing just fine—nice, dark vermicompost, lots of young worms. They've pretty much consumed all of the extra food waste that had gone uneaten while it was frozen around the edges during the winter. Some of you may remember that I insulate my outside worm bin and insert a birdbath water heater immersed in a 2-gallon jug of water into the center of the bin. (A fall issue of the WormEzine will guide you through weatherproofing your worm bin.) Thermostat turns on at 40 degrees F, and the hardy worms find their way to the center core where they hang out until the weather warms up. I could use some of that COOL right now!

I complete my two-part worm composting basics article this month. Remember, you are welcome to use this article in print or electronic communications, just as long as you include the entire article and credit Mary Appelhof's WormEzine. I also give a brief report the Michigan Master Gardener's Conference in Lansing, MI.

As always, give me a call or drop me a note and tell me what's going on in your neck of the woods.

To read the archives on the web, visit the following URL:

<http://www.wormwoman.com>

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1=====FEATURE=====

(Continued from WormEzine Vol. 1, No. 1, June 2002)

Worm Composting Solves a Problem, Yet is Educational and Fun Part II

Part I of this series described the basic components of a worm composting system, including an aerated bin, bedding, small amount of soil, the right kind of worms and food waste. Part II continues with what to bury, how to use the vermicompost produced in your bin and additional resources available.

What to bury

All kinds of organic waste can go into your worm bin, although there are good reasons for not putting meat, cheese and bones in your inside home bin. As these nitrogen-rich materials decompose, they produce offensive odors, which can attract flies and vermin. Your worm bin can handle what you have been grinding up in your garbage disposal ... lettuce, cabbage, potato peels, leftovers, tealeaves and coffee grounds (tea bags and coffee filters are OK, too). Eggshells add calcium and other nutrients; the shells break down faster when pulverized with a rolling pin. The good thing is, you no longer have to dilute your garbage with eight gallons of drinking water to flush a pound of garbage down the drain in a garbage disposal.

People expect to find disagreeable odors when they start burying all their waste in a small worm bin. Most people are surprised at how little odor there is. The redworms need lots of oxygen. As they move around in the bin throughout the bedding, they help create an environment where the true decomposers—the bacteria, fungi, protozoa, and nematodes, which break down the material, have oxygen too. In other words, they are aerobic. They produce carbon dioxide and water, among many other products, as wastes and these don't smell. I like to say, "The time you get odor is when you put the lid on the can." Cutting off the oxygen stimulates anaerobic organisms to do the decomposing, and they are the ones that produce foul odors.

Cold climate dwellers keep their worm bins inside during winter so that the worms don't freeze. Others adapt their systems with insulation and some form of supplemental heat to keep the worms from freezing. (Fall issues will guide you through weatherproofing your worm bin.)

Free fertilizer—healthy plants

The product from a worm bin is vermicompost: a mixture of worm castings, partially decomposed waste, and uneaten bedding. Vermicompost can be used as top dressing for houseplants, as an ingredient in potting mixes, or as an immediate source of nutrients for transplants and seedbeds. In fact, recent research indicates that the true value of vermicompost may be from the millions of bacteria, fungi, protozoa, and nematodes, known as the soil foodweb that you introduce into the root zone of plants when you apply vermicompost. These microorganisms eat each other and each other's wastes, and in the process make all those nutrients from your food waste available to plants.

How do I learn more?

My personal mission is to "Change the way the world thinks about garbage—to view it as a resource, not something to dispose of." As owner of Flowerfield Enterprises I develop and produce excellent educational materials on vermicomposting for use in homes, schools, and institutions. My first book, *Worms Eat My Garbage* is a basic manual on how to set up and maintain worm-composting systems. It describes kinds of bins and where to locate them, types of worms, harvesting procedures, biology of worms and lots of worm facts.

Because I self-published the book, people whose lives were affected by this simple way to deal with organic food waste on-site would call and say, "This would make such a great activity to use in the classroom. Do you have any specific suggestions you can give me?"

Well, of course, it is inefficient to do this hundreds of times over on a one-to-one basis over the phone, especially since even a one-person office has rent and phone and postage and fuel bills to pay. So I branched from self-publishing to collaborating. Two creative co-authors and fine educators joined me and for two years we worked diligently on producing a superb book of activities to use worms to teach not only science, but math, language, history, geography, and encourage creativity, art and music activities. The result is *Worms Eat Our Garbage* with over 150 activities. Although it was designed for the classroom, it has dozens and dozens of activities that will keep children and adults fascinated for years. My dentist bought a copy and told me he and a friend spent an entire Memorial Day weekend going through the book and doing the activities. He said he thought he knew a lot about worms (he'd had a worm bin for several years), but he had to keep looking up answers in the back of the book!

We also produced a video, *Wormania!*, which has attracted many popular responses from both educators and kids because it shows live worms at work, hatching from their cocoons, the beating of their hearts, moving ... all in a fun, entertaining and educational manner.

Because any worm bin also eventually has many more creatures than worms in it and they are usually too tiny to see with the naked eye, we carry Warren Hatch's video, *Worm Bin Creatures Alive through a Microscope*, which shows mites and springtails and enchytraeids and centipedes and millipedes ... It's fascinating.

We also have a patented Worm-a-way® worm bin and carry the worms to set it up. It has a unique aeration system, is made from recycled plastic and its manufacture provides jobs and job training for differently-abled workers through our local Goodwill Industries.

Visit our website at <http://www.wormwoman.com> or feel free to call us at 269-327-0108 (note new area code). We want to hear from you! After all, if worms eat my garbage, they can eat yours, too!

2=====NOTABLE BITS=====

A. WORM BANNERS ON THEIR WAY TO WALES. Remember the giant worm banners that adorned the stage at the Vermillennium? Two colorful 16-foot long earthworms, complete with segments, a mouth and clitellum were painted on fabric by artist Mary Fordham from Montclair, New Jersey. We're loaning them to the National Museum of Wales for their Wonderful World of Worms exhibit to be up during the International Symposium on Earthworm Ecology 7 (ISEE7). According to the organizers the museum has a magnificent foyer and huge pillars and will be the site of the symposium banquet.

B. MICHIGAN MASTER GARDENERS—Over 400 eager, high-energy Master Gardeners from Michigan attended the 3-day June conference in Lansing. Between 23-30 attended each of my two presentations, "Worm Bins to Compost Tea." I developed ideas around the fact that as much nitrogen is fixed industrially these days as is fixed by nature through the action of nitrogen-fixing bacteria and lightning. This excess nitrogen leaks into our waterways and atmosphere—in the form of nitrates and nitrous oxide—with disastrous results. When nitrogen is part of living organisms it doesn't leak, so adding organisms back to the soil helps reduce toxicity. Compost tea is an effective way of getting these bacteria, fungi and protozoa back into the soil. And worm bins provide a good source of the organisms for compost tea! Of course, if this sounds like it's based on Dr. Elaine Ingham's work, it IS! We'll have more on the subject next month. Meantime, we now carry the *Soil Biology Primer* and Elaine's *Compost Tea Manual* on our website. See RESOURCES for details.

3=====RESOURCES=====

A. WORMS EAT MY GARBAGE by Mary Appelhof.
http://www.wormwoman.com/acatalog/Wormwoman_catalog_Books_6.html

B. WORMS EAT OUR GARBAGE by Mary Appelhof, Mary Frances Fenton and Barbara Loss Harris.

http://www.wormwoman.com/acatalog/Wormwoman_catalog_Books_6.html

C. SOIL BIOLOGY PRIMER by Elaine Ingham, et. al.

http://www.wormwoman.com/acatalog/Wormwoman_catalog_Books_6.html

D. THE COMPOST TEA MANUAL by Elaine Ingham.

http://www.wormwoman.com/acatalog/Wormwoman_catalog_Books_6.html

4-----HUMOR-----

A. WORM DRIVE CD ROM—I just got a chance to listen to "Worm Drive: The Musical." What fun! It's got an amusing story line, delightful characters, and some wonderful songs, including "The Dirtology Man," "Worm Lullaby," and "Computers Don't Grow Food." It has lots of good content about taking care of our soil and, of course, earthworms! Find out whether the worms make it to the back forty during the Worm Drive by listening to Ron Wright's Worm Drive. More information at:
<http://www.wormwoman.com>

5-----COMING EVENTS-----

A. July 27 RADIO INTERVIEW—A SATURDAY FOOD CHAIN, Michael Olson hosts Saturday Food Chain, a 1 hour syndicated radio show on food issues such as organic farming, alternative agriculture and genetic engineering. His invited guest Saturday July 27 is Mary Appelhof who will be talking about ... what else? Worms! Expect her to get into how having a worm bin is a good way to get a source of microorganisms for making compost tea. The show is live and listeners are invited to call in with questions and comments. Tune in from 9 to 10 a.m. Pacific Standard Time, Saturday July 27 at AM 1080 KSCO, AM 1340 KOMY, AM 1480 KGOE, or 107.5 KMPH. Call 831-479-1080 or 800-624-2665. It also streams live and is archived on the Internet at
<http://www.metrofarm.com>

B. INTERNATIONAL SYMPOSIUM ON EARTHWORM ECOLOGY 7 —Sept. 1-6 in Cardiff, Wales. First major international earthworm conference since the Vermilennium that was held in Kalamazoo. For info:

<http://www.cf.ac.uk/biosi/worm2002/registration/worm2002RegForm.pdf>

C. MINI-SYMPOSIUM ON EARTHWORMS—Sept. 7 at The National Museum of Wales, Cardiff. This event for youth takes place the Saturday following ISEE7 and takes advantage of local and international experts in town for the symposium. The schedule includes Mary Appelhof (*Worms Eat My Garbage*), Rhys Jones (*Snakes are NOT Worms - Feel Them!*), Geoff Baker (*Worms Down Under*), Trevor Pearce (*Worms are Nice - to Eat!?*), Jill Clapperton (*Junior Science Experiences in Canada*), and Liz McCurdy (*Worms in the American Classroom*).

D. VERMICO BEST MANAGEMENT PRACTICES IN VERMICOMPOSTING

October —Portland, OR; more info to come or for immediate details go to:

<http://www.vermico.com>

Thanks for subscribing!

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ABOUT THE AUTHOR Mary Appelhof is founder and president of Flowerfield Enterprises, which develops and markets educational materials on vermicomposting. Its publishing imprint is Flower Press, publisher of the how-to book *Worms Eat My Garbage*, the classroom activity book and curriculum guide, *Worms Eat Our Garbage: Classroom Activities for a Better Environment*, *The Worm Cafe: Mid-scale vermicomposting of lunchroom wastes* and *Diabetes at 14: Choosing tighter control for an active life*.

=====**THE SMALL PRINT**=====

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