

# Worms in a Tote

HGA-01025

by Mara Bacsojlaky

Worms are a good way to convert kitchen scraps into compost for your garden, greenhouse or house plants. Worms eat and digest their body weight daily. Their castings are five times richer in nitrogen, seven times richer in phosphates and 11 times richer in potassium than the average topsoil. If done with enough worms and a large enough container, worms can consume as much kitchen waste as your family produces. For a family of four, that's roughly six pounds of scraps weekly, and it requires a worm container 2 feet by 3 feet. For that type of composting — where most if not all of your kitchen scraps are utilized by worms — the Cooperative Extension's *Composting with Worms* (HGA-01020) is an excellent resource for building and tending your worm box.

If you would like to try worm composting the low-tech way, or if you don't have the room for a large container, worm composting can be easily and successfully done in a tote. It's also a fun project for kids.

## All You Need Is Worms

All you need to get started is a tote (large or small), shredded waste paper, some soil (used potting or garden soil), kitchen scraps and, of course, worms. The two types of worms that like to live in boxes and totes are red worms: *Lumbricus rubellus* and *Eisenia foetida*. Some mail-order places for worms are listed at the end of this publication.

A worm environment must be moist, but not wet. To start your tote, tear paper, like newspaper, cardboard, or recycled office paper, in narrow strips. Don't use glossy magazine paper — it has too high a clay content and the inks used may contain heavy metals, which are bad for worms. Put about two to three inches of torn paper in the bottom. Moisten it so that it is wet but doesn't drip water when squeezed. Add to that an inch or two of soil. Then add worms and kitchen scraps. Mix the scraps and worms into the soil and paper, and add a



Worm composting equipment: Small or large tote with lid, kitchen scraps and newspaper.

bit more water. Then put the lid on and let the worms do their thing. If you use a small tote, you will need to drill air holes in the top. The large tote has enough air space (as long as you don't fill it to the brim) to keep worms alive and happy, so air holes aren't necessary.

## The Care and Feeding of Worms

Worms like eggshells, coffee grounds, stale or moldy bread, tea bags, fruit and vegetable scraps and kitchen paper waste such as coffee filters, butter wrappers, etc. Chop scraps and break up eggshells into small pieces to speed up worm processing.

It takes some guess work to find the right amount to feed your tote worms. If you feed them too much, the tote will smell funky. If you feed them too little, the worms will die or not reproduce at a good rate. When your worm/food balance is right, your tote will smell like good garden earth. On average, for a large tote that is half full of bedding, castings and soil, with about 500 worms, one or two quarts of scraps per week will keep your worms healthy. Of course, as your population grows, you will have to increase the amount of weekly food.



A healthy red wiggler in a bed of castings, newspaper and soil.

You can “turn” your worms when you feed them to check on how they are doing and to see if you are getting new worms. Kids especially like this task.

Although this doesn't harm them, the worms prefer to burrow undisturbed, but turning and checking the food, moisture, and young worm content of your tote once to twice a month is good worm maintenance.

Worms like it warm, and the warmer it is, the faster they will reproduce, and you may find yourself with a worm explosion. This means the tote is overcrowded, and you will find them crawling out of the tote, even with a well-secured lid. Generally, stashing the tote in a corner or on a shelf in your kitchen or living room puts the tote at a good temperature that limits worm explosion but keeps them happy and reproducing. A closet or room away from your main heat source will be too cold for worms in winter, and it also increases the risk of forgetting to feed or check your worms.

If liquid starts to collect in the tote bottom, you are putting too much water and/or rotting vegetable material in the tote. Established totes rarely need water added to them, because plastic doesn't breathe; if you find that

your worms are too wet, you may want to drill holes in the top and upper sides to increase air circulation and help the bedding material stay drier.

Although proper layering of materials and food in conventional worm bins means easier collection of worm castings, it is not necessary to do this in totes.

With just a little work, it's easy to separate worms from their castings when the tote starts to get full or when you want to add castings to houseplants, garden starts or beds. It is important to remove castings every three to four months, because too many in the tote will make it toxic for the worms. If you keep back some starter worms, you can put all of the contents of your worm tote in your garden or greenhouse in late May or early June and let the worms do their thing throughout the summer.

### Other Tote Inhabitants

Over time, you will find your tote hosting other small life forms. These beneficial critters, like springtails and white worms, help break down organic material. Flies really like worm totes and can become a nuisance. If you have a small tote with air holes drilled in the top, you may notice an increase of black gnat-like bugs in your house. These are fungus gnats, which are harmless to people but can kill certain houseplants. Burying all food waste when you feed worms is the best way to control flies and gnats. Using a large tote that doesn't need air holes is another.

### FOR FURTHER INFORMATION AND IDEAS

- Worms Eat My Garbage*, by Mary Appelhof. 2006. Kalamazoo: Flower Press.  
*The Worm Cafe: Mid-scale Vermicomposting of Lunchroom Wastes*, by Binet Payne. 2003. Kalamazoo: Flower Press.

### REFERENCES

- Composting with Worms*, HGA-01020, UAF Cooperative Extension Service  
Appelhof, Mary. 1982. *Worms Eat My Garbage*. Kalamazoo: Flower Press.  
Uncle Jim's Worm Farm, [www.unclejimswormfarm.com](http://www.unclejimswormfarm.com)

[www.uaf.edu/ces](http://www.uaf.edu/ces) or 1-877-520-5211

Mara Bacsujlaky, Extension Faculty, Natural Resources and Community Development.



Published by the University of Alaska Fairbanks Cooperative Extension Service in cooperation with the United States Department of Agriculture. The University of Alaska Fairbanks is an affirmative action/equal opportunity employer and educational institution.

©2014 University of Alaska Fairbanks.

9-08/MB/5-14

Reviewed December 2012