



Worms in my house

It might surprise you to learn that worms are big-hearted creatures. Worms, apparently, worms have five hearts. They must also have a big stomach (or maybe five) because they're prolific eaters, eating and expelling their own body weight every 24 hours.

"When I heard that a pound of worms and their descendents could transform a tonne of waste in year, I thought every house should get some," enthuses Cathy Nesbitt, owner of Cathy's Crawly Composters which markets vermi-composters and worms and is developing larger vermi-composter programs.

"Vermi" is, of course, Latin for worm, and "vermi-composting" is the process of using earthworms and micro-organisms to convert organic waste into a black, earthy, nutrient enriched soil conditioner. Typically a counterpoint to backyard composting, vermi-composting allows those with limited space to manage their organic wastes indoors.

Yes, that's right. Indoors.

Traditionally vermi-composting has been used for backyard or mid-scale applications (e.g., schools and small businesses). Several technologies apply vermi-composting on a larger centralized scale.



Food for rot

The worms typically used in vermi-composting are Red Wigglers (*Eisenia foetida*). These make great food for Fear Factor participants but more commonly found on the end of a hook luring the fish that almost got away.

The approach to vermi-composting is not a whole lot different from backyard composting and is easy to understand because you can see what's going on.

A critical difference is that it's not a thermophilic process. The decomposition process involves the interaction of aerobic

microorganisms and the gut of the worm. Red wigglers can tolerate a wide range of temperatures, but they should not be exposed to freezing or thermophilic temperatures. A safe temperature range is between 50 and 32o C. The ideal temperatures are between 13o and 25oC.

Worms will pretty much eat any food that you normally put in a backyard composter including fruits and vegetables, stale bread, coffee grounds, tea leaves and egg shells. They thrive and stay healthy when they have access to a variety of food. Chopping food wastes makes it easier for the worms to consume them and ultimately speeds up the whole process.

For much the same reason as for backyard composters, meats and dairy products are avoided. This is not a function of not being decomposable but rather decomposing a little too quickly and potentially creating an unpleasant odour.

A major component of a vermi-composting system is bedding. It plays an important function since it not only holds moisture, but pro-

vides a medium in which the worms can work. Worm bedding usually consists of some form of shredded paper.

The ideal bedding can consist of shredded cardboard, shredded newsprint or strips of computer paper. It's important to rip the paper into little pieces prior to putting into the bin. It's also a good idea to mix a small amount of loam or topsoil into your newspaper bedding. This soil will also assist in the worms digesting their food.

The bedding should be kept as moist as a wrung out sponge. Worms do not like to be submerged in water and will try to escape.

When feeding your worms be sure to rotate the location of the organic waste that you are placing into the composter. This will ensure an even distribution of worms throughout your bin. It's also important to bury your food, in order to not attract insects and odours.

Ongoing use applications

After two or three months the original bedding will not be recognizable and vermi-compost is ready for harvest.

Nesbitt says, "It's as if the organic matter is magically transformed into a wonderful soil. These are castings, one of the best soil additives available."

Light, which worms don't like, is used to move worms out of the compost. After the harvest, new bedding material can be added and the vermi-composter is ready for action again.

Vermi-compost is often more nutrient-rich than traditional compost because of the non-thermophilic conditions and the reduced loss of nitrogen compounds. In some cases vermi-compost has demonstrated fungicide and insect repelling properties.

Vermi-composters can be used in a variety of applications, in addition to a fashion similar to a backyard composter. Vermi-composting units are ideal for apartments and for those not producing great amounts of organic wastes.

"Don't want to go out in the cold?" asks Nesbitt "Vermi-composting offers an indoor alternative to backyard composting. No more treks through the snow to wrestle with the lid on your backyard composter."

Schools are a particularly good venue, since kids are interested in the worms and vermi-composting offers a tremendous opportunity to teach children about the environment.

There are some large scale applications of vermi-composting. However the process is constrained somewhat because it must not attain thermophilic temperatures. This necessitates very low windrows that take up a lot of space. Vermi-composting may have some application for compost curing.

So, with 4,000 to 5,000 hearts to the pound (and even more stomach), the power of the worm is something we should all harness to compost and to educate. ♻️

With files from Cathy's Crawly Composters (www.cathyscomposters.com) and The Worm Factory (www.wormfactory.tripod.com).

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