

Worm castings improve the soil



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Ask a Master Gardener

Question: I have been reading about vermiculture and am interested in raising worms in order to use the worm castings to improve the quality of my garden soil. Would you provide some insight into this topic?

Answer: Vermiculture is the process of garden composting using worms. The worms increase the speed of the composting process and the end product is vermicast, also known as worm castings, or “worm manure.”

Vermicomposting has been shown to be richer in many nutrients than compost produced by other composting methods.

Some gardeners refer to worm castings as “black gold” because of the many benefits the castings provide to garden plants and houseplants. Worm castings are a material extremely rich in humus and are packed full of nutrients and minerals. Research has shown that using worm castings can increase plant growth, protect both soil and plants from diseases, provide a natural pest resistance and help soil retain moisture.

Worm castings provide a rich, natural fertilizer that is immediately available to the roots of the plant. With castings, all the healthy nutrients that the plant needs are water-soluble and can be absorbed right away. You don’t have to worry about putting too much casting material into the soil because it will never burn the roots.

Castings can be used in several ways. One is by simply spreading the worm castings around the base of the plants, work in lightly, and then



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The best species of worms for vermicomposting is *Eisenia fetida*, commonly called red wigglers.



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A 14 gallon plastic tote is the ideal size to house 1-2 pounds of worms. The tote will need to have proper ventilation, which can easily be done by drilling holes along the top lip. Worms like to be in the dark, so the tote needs to be a dark color, not transparent.

add water.

Another way is to create a planting mix by adding the worm castings in with peat moss or vermiculite. This way is favored among those who grow houseplants.

And a third way is to mix the worm castings with water to make a liquid fertilizer known as worm or compost tea. To make

worm tea, use one cup of worm castings for every gallon of water. You will need to pour the worm tea around your plants within 24 hours of making the tea so the microbes don’t die. Apply once a week.

You can buy worm castings at most retail stores that carry garden supplies, however, many home gardeners set up a worm bin

at home. Inside a vermicompost bin, worms eat both microorganisms and bits of organic material, which can come from food waste and other sources.

Once ingested, those organic materials get ground up by the worm’s gizzard and broken down even more by enzymes and microbes in the worm’s gut. The final product, worm manure, looks like dark, fine-textured clay and is rich with nutrients and bacteria that are beneficial for plants.

You can purchase a vermicompost bin from commercial manufacturers or you can build your own. If you build using wood, make sure that you use untreated wood. Many gardeners use plastic storage totes as an easy and inexpensive way to start a worm bin. A 14-gallon plastic tote is the ideal size to house 1-2 pounds of worms.

Worms like to be in the dark, so the tote

needs to be a dark color, not transparent. The tote will need to have proper ventilation, which can be easily done by drilling holes along the top lip. You can keep the tote inside or outside. The optimal temperature range is between 59 and 77 degrees.

Once your container is ready, you will need to start the process of filling it with suitable bedding material. Shredded newspaper and cardboard are good material. Once the bedding material is put down, add the worms. The best species of worms for vermicomposting is *Eisenia fetida*, commonly called red wigglers.

Feeding the worms is generally a weekly task. They can be fed most food scraps, along with a few spoonfuls of fine grit material such as cornmeal, coffee grounds, or finely crushed eggshells. You will not want to feed them

meat, bones, fish, onions, garlic, citrus or grease.

After taking care of the worms for several months, you will be ready to harvest your first batch of “black gold.” You can use the worm compost immediately or store it and use it later.

If you are interested in starting your own worm bin, OSU Extension provides an in-depth article that should prove to be helpful. Find it at ir.library.oregonstate.edu. Once you are on the website, type “composting with worms” into the search box. You can then download the article into a PDF format.

I hope you do start a worm bin. The benefits of growing your own worm castings are amazing.

Do you have a gardening question? Contact the Douglas County Master Gardeners via email at douglasmg@oregonstate.edu or by phone at 541-672-4461.