

WELCOME PESTS AND UNWANTED PROBLEMS

A healthy worm composting system will attract countless numbers of associated organisms (biota). Most will be 'mini-beasts' and unseen by the human eye, but others will be more obvious. Most of these creatures are not harmful and are, in fact, beneficial so don't race out and kill every critter that isn't a worm. Remember that this is a living system. Every other creature is there for the pickings and will help break down the compost. The best system will be 'alive', supporting a complete and harmonious ecosystem as close to nature as possible. In general, only the top few inches will be affected by these beasts, and you will find only worms deeper down.

However, desirable as these critters may be in the compost, you may want to deter some of them for various reasons. Some may bite, some may eat the garden, and some are just simply scary. Be assured your system will still work without them but don't use chemicals in the system to kill them.

Simply keeping the cover on is the best deterrent. However, if you have a recurring problem with a pest, cover all the fresh waste with about 3-4 inches of dry vermicast, shredded paper or light soil and leave for a week before adding more waste. In most cases, this will destroy the habitat of the pest and kill the eggs. Like worms, these surface dwellers need the right environment to live and breed and they will quickly disperse or die if the usual surface conditions are changed. This method won't harm the worms.

Other creatures in your worm bin

All these organisms are decomposers and beneficial to your worm bin, so don't fear any newcomer that you may find in the worm bin. Your worm bin is the cozy, damp environment that includes meals for all decomposers to enjoy. For this reason, the decomposers will not leave the bin to explore other areas of your home.

People new to worm composting sometimes worry that these organisms may harm their houseplants. All decomposers that eat dead organic matter will not eat living plants. Using your vermicompost in your garden or on houseplants is safe. Any organisms that come with your vermicompost will only eat decaying organic matter or simply die.

ORGANISMS FOUND IN THE WORM BIN:

Bacteria, Molds and fungi

Bacteria, molds, and fungi are the most numerous organisms in the vermicompost system, and the primary decomposers of organic matter. They work on organic material by secreting enzymes which break the bonds holding molecules together, thus simplifying and reducing the elements for absorption. They are also an additional food source to other organisms in the system, including earthworms.

Molds and fungi can also serve as an indicator, telling us if the feeding rate is adequate. Large amounts of mold and fungi indicate there is more food than the system can quickly manage and the feeding rate should be decreased.

Fruit flies

Fruit flies are small flying insects with large bulbous, often colorful eyes. They pose no health threat to

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us or to the worms, and do not harm healthy plants.

Fruit fly eggs are introduced to the worm bin on the peelings of fruit which are tossed into the bin. The bin environment is an ideal breeding ground, with abundant food and moisture the flies flourish. Fruit flies are best prevented rather than controlled.

You can prevent fruit flies by burying food waste under several inches of bedding. Several sheets of damp newspaper will act as a barrier to odors preventing fruit flies from being attracted to the bin. Also try destroying fruit fly eggs by microwaving fruit and vegetable skins before adding to the worm bin. If they are in the bin, make a fruit fly trap using an attractive liquid, such as: beer, soda pop, or fruit juice. Put a few ounces of "bait" into a jar or cup with a lid that has small holes cut into it. The flies go in, but don't come out.

Pot worms (Enchytraeidae)

Sometimes called white worms, these small, white, threadlike worms are found in worm bins when there is a quantity of finished material. Pot worms are small white, segmented worms, which can be mistaken for baby red worms. Their bodies are nearly transparent and their digestive system quite visible when viewed through a hand lens. They are beneficial organisms that feed on decaying organic matter and are considered a prized tropical fish food. Pot worms do not feed on living plants and pose no threat to the garden or houseplants. These are actually an earthworm that thrives on acidic material. Their role is to neutralize the system making it more desirable for the other composting worms. Don't deter these.

Mites (Acarina)

Mites are among the most numerous inhabitants in the worm bin. They are generally found on the surface of the bin, though some predatory species will venture deeper if the material is loose and there is a food source. Mites have large bodies, small heads and eight legs. Their colors range from mottled brown, to red, to glossy white. Species of mite found in the worm bin pose no threat to garden plants or people. While beneficial to the system for the most part, it is not uncommon for mite populations to become so large that they stress the worms. Infestation level blooms generally occur on the surface of the bedding and cause the worms to remain in the lower areas of the bin and to decrease their activity. Mite populations can be controlled by removing the upper few inches of bedding during an infestation. Leaving the bin lid open and exposing the bedding surface to drying and light will also control mite populations.

The vast majority of mite species in the bin are beneficial organisms. Mite species which damage living plants are not found in the worm bin. Control of mite populations should only be considered if the worms are demonstrating stress including refusal to come to the surface, huddling in a ball, low reproduction or escaping from the bin.

Sow or pill bugs (Isopoda)

Also known as woodlice or roly poly bugs. Sow bugs have a segmented, armored shell similar in appearance to that of an armadillo, are brown to gray in color, have seven pairs of legs and two

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antennae. They are usually found in the top layers of the worm bin, where they shred and consume the toughest materials, which are high in cellulose. In the worm bin they are highly beneficial organisms.

Springtails (Collembola)

There are hundreds of species of springtail, all primarily decomposers of organic matter. Springtails in the worm bin are generally small enough to walk on the head of a pin and range in color from brownish to striking white. They have three distinct body segments, six legs and a pair of short, stubby antennae. They are generally beneficial in the system and have no interest in living plant tissue. The species most commonly seen in the bin is commonly seen in large numbers on the surface of the bin when there is a quantity of finished material.

Soldier Fly Larvae, or "Maggots"

The maggot commonly seen in a worm bin is grey-brown and about 1/2" long. The maggot needs a cooler, dryer place to go to in order to pupate so very few of the maggots will become adult flies. Worm composters find that these larvae show up in huge numbers, live a short while, and then disappear. So, be patient. Check to see if you have enough bedding in there. You can reduce the likelihood of having maggots in the bin by mixing in plenty of carbon-rich material every time you feed.

Millipedes

Millipedes are long, slow moving, wormlike animals found in small numbers throughout all layers of the worm bin, where they feed on decaying organic matter.

Millipedes are long and segmented, with two pairs of legs per body segment and two antennae with which they sense their environment. Colors range from black to red, but those species found in the worm bin are commonly brown or reddish-brown. The millipede has an armored shell for protection and coils into a ball, like a pill bug, when threatened.

Centipedes

Centipedes resemble millipedes, but their bodies are more flattened and less rounded at either end. They possess one set of legs on most of their body segments and a large pair of pincers which originate behind the head. The centipede is generally more reddish than the millipede, is very fast moving and is generally found only on the surface of the worm bin.

It's unusual to have many centipedes in a worm bin and one or two are no problem. However, because these arthropods will eat worms as well as other organisms it's a good idea to keep their numbers low. The only way to control centipedes is to remove them by hand which should be done carefully.

Spiders

Get rid of them before they breed. They won't hurt the system but don't risk getting bitten.

Snails and slugs

Excellent composters but you may not want them near the garden so physically remove them. There will be eggs just under the fresh waste so dry the system for a couple of weeks and the eggs will die.

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Ants

If ants appear, you have a dry spot in the worm bin. Flush them out with water.

Beetles

Beetles are mostly harmless composters. To deter, leave the cover off for a few days.

Grubs

These are usually the larvae of beetles. Some of the larger species may be found quite deep in the compost. They are no threat to the worms. They will pupate then fly away as beetles.

Cockroaches

Bait with bread soaked in milk then physically remove.

Predators

If left uncovered, predators will also be attracted to the system. Worms are a delicious temptation for birds, possums, lizards and frogs but other less desirable predators include snakes, rats and mice. In snake or rat infested areas, keep the system away from overhanging trees (other predators can approach from trees but aren't harmful to humans). Dogs and cats love to dig in any kind of compost and so do little children. A snug-fitting cover is the best safeguard against predators and be sure the sides of the system are flush against the drainage base. Rats, in particular, will dig up from under the system.

While safe in their bedding, worms have few predators, but watch out for flat-worms. They can be at any depth in the system and you are most likely to notice them when removing the vermicast. They have a distinctively ribbon like and slimy appearance and are usually cream, pink, red or mauve in color. These worms are carnivorous. They eat normal earthworms by wrapping their flat bodies around the victim and slowly digesting it through their skin. If you find one, discard the flat worm and the surrounding soil or compost, as it may contain eggs of the flat worm.

Other Troubles

Like anything new you try, you could face a few problems with your system especially when you're just starting. But don't panic, everything is fixable. Even from the worst neglect, a worm composting system will bounce back to health. Scientists estimate that worms have been on Mother Earth for 600 million years which makes them very adaptable to their surroundings. That's a lot of time to fine-tune their survival techniques.

Excerpted from <http://thewormhaus.com/vermicomposting.html>

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About the Red Wiggler/Red Worm

(*Eisenia fetida*)

Eisenia fetida is the worm species most useful in vermicomposting systems and the easiest to grow in high-density culture because they tolerate the widest range of environmental conditions and fluctuations. *Eisenia fetida* tolerates handling and disruption to their environment very well. *Eisenia fetida* is common to virtually every landmass on earth, meaning there is no concern over importing potentially alien species to an environment where they might cause damage to the eco-system.

While this worm species is considered the best worm for vermicomposting, it is a small worm, good for organic feed for chickens and fish, not always suited for the use as bait.

Temperature range: Minimum; 38° F, maximum; 88° F, ideal range; 70° F-80° F.

Reproductive rate: Approximately 10 young per worm per week under ideal conditions.

Average number of young per cocoon: Approximately 3.

Time to emergence from the cocoon: Approximately 30-75 days under ideal conditions.

Time to sexual maturity: Approximately 85-150 days under ideal conditions.