



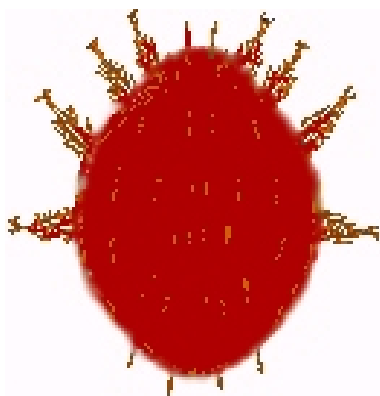
Water Quality & Waste Management

Controlling Mite Pests in Earthworm Beds

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Although earthworms have few natural enemies, insects are attracted to worm beds because they provide a moist, organic environment. If worm beds are not cared for properly, acidity can build up and create conditions that allow worms' natural enemies to thrive. Mites in particular are attracted to an acidic, moist environment. Although small populations of mites reside in all worm beds, under certain conditions mites can reach very high levels and cause problems.

White or Brown Mites



White or brown mites are not predaceous and tend to feed only on decaying or injured worms. However, during infestations, these mites can devour much of the food in earthworm beds, depriving worms of needed nutrients. This increases worm growers' costs and time spent feeding worms. Mite populations at high levels can also cause worms to stay deep in the beds and not come to the surface for feeding, resulting in poor growth and reproduction.

Red Mites

The red mite is parasitic on earthworms. It can attach itself to the worm and suck its blood or body fluid. Red mites are also capable of piercing and sucking fluids from egg capsules. These mites first appear as small white or gray clusters, resembling mold. Magnification will reveal clusters of juvenile red mites in various stages of development. The adult red mite is smaller than white or brown mites; it has an egg-

shaped body, is bright red, and has eight legs

Mite Prevention

Proper care of worm beds can prevent a harmful buildup of mites. One or more of the following conditions are usually associated with high mite populations:

- Too much water -- Beds that are too wet create conditions that are more favorable to mites than worms. Avoid excessively wet beds by adjusting watering schedules, improving drainage, and turning bedding frequently.
- Overfeeding -- Too much food can cause an accumulation of fermented feed in worm beds and lower the pH of the beds. Adjust feeding schedules so that all feed is consumed within a few days. Modify feeding schedules as the seasons (and temperatures) change. Worms consume less food in colder temperatures. Maintain beds around a neutral pH 7; use calcium carbonate to adjust the pH level.
- Excessively wet or fleshy feed -- Vegetables with a high moisture content can cause high mite populations in worm beds. Limit the use of such feed, and if high mite populations are discovered, discontinue the use of this feed until mite populations are under control.

Mite Removal

Several methods have been suggested for removing mites from earthworm beds. Bear in mind that any type of mite removal, physical or chemical, will only be temporary unless worm-bed management is altered to make conditions less favorable for mites. The following techniques range from low- to high-intensity measures.

Method #1 -- Uncover the worm beds and expose them to sunlight for several hours. Reduce the amount of water and feed. Mites will not like this environment, and they may leave the worm beds.

Method #2 -- Place moistened newspapers or burlap bags on top of the beds, and remove the bags as mites accumulate on them. Repeat this procedure until mite populations are substantially reduced.

Method #3 -- Place pieces of watermelon or cantaloupe rind or potato slices on top of the worm beds. Mites are attracted to the sweetness of the rinds or peels and will accumulate on them. The rinds or peels can then be removed and dropped in water or buried.

Method #4 -- Water heavily, but do not flood, the worm beds. Mites will move to the surface, and worms will stay below the surface. Use a hand-held propane torch to scorch the top of the bed and kill the mites. This procedure may be repeated several times, at three day intervals, if needed.

Method #5 -- Use a light dusting of sulphur to kill the mites. After soaking the worm bed with water and causing the mites to surface, apply a rate of 1/16 ounce of sulphur per square foot of bed surface.

Sulphur should not harm the worms, but in time, it may increase the acidity of the bed and reduce earthworm populations.

Popular literature on mite removal from earthworm beds is somewhat contradictory. In the past, some chemical pesticides have been used in worm beds. However, most pesticides have since been shown to have the potential to harm humans, and recommendations for such treatments are not given here. Although newer, safer, miticides exist, sufficient scientific research has not been conducted in worm beds to merit mention at this time.

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