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SUMMARY

Although they seem ‘yucky’, Black Soldier Fly larvae can actually play an important role in breaking down organic matter. They aren’t harmful, but to reduce their numbers, “tune” your compost by adding more brown materials, and in your worm bin, bury food scraps under 4” of bedding.

Black Soldier Fly Larvae in Worm Bins

by Sheila Weston, UC Master Gardener

Horrified by large brownish maggots in your compost or worm bin?

Q: I was a little horrified to find these large brownish-grey grubs in my worm bin, feeding voraciously on some rotting food that I had previously added to the bin. I have also seen them in my regular compost. What are they, are they likely to harm my worms, and how do I get rid of them?

*A: The grubs you describe are the larvae of the Black Soldier Fly (*Hermetia illucens*), and if you are able to deal with the ‘yuck’ factor, they are not a cause for concern.*

About the Black Soldier Fly:

The Black Soldier Fly (BSF) is actually a very interesting creature. You may have seen the adult fly (see photo) resting on plants in your garden. Only the larvae feed; the adult has no functioning mouth, and cannot feed or bite. It does not generally enter houses, and unlike the housefly, has not been shown to spread disease. It lives long enough to mate and lay eggs on manure or rotting

material, which is why the larvae are often found in compost or manure piles where they feed voraciously as you describe.

The BSF larvae do not appear to be harmful to worms; in fact they may be beneficial, as worms cannot eat food until it has rotted and the larvae break down this food for them. The only drawback may be if there are large numbers of BSF they may compete with the worms for food, also producing more heat than is good for the worms.

Research Interest:

The BSF has drawn the interest of university researchers because of its potential help in management of pig and chicken farm manure piles. Large numbers of these grubs can quickly break down soft organic material which allows the manure to decompose more rapidly, reducing odors and harmful bacteria. In addition, when the larvae are ready to pupate they crawl out of the muck

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pile and can be easily harvested to provide a nutritious food source for livestock, which makes for a very sustainable system!

Beneficial to Composting:

So you can see that these creatures are not harmful, but may actually benefit your composting. In addition a population of BSF larvae generally inhibit the development of other flies, so you may see fewer houseflies or fruit flies around your compost. However, the presence of large numbers of larvae could be an

indication that your composting conditions are not quite right; the bin may contain too much nitrogen or ‘green’ material and it may be too moist. Try adding more carbon material (browns) to the compost, and keep the pile a little drier. For the worm bin, add more bedding and bury the food scraps, covering them with at least 4” of bedding. If you decide you really want to keep the flies out you can cover the ventilation holes with window screen material (glued onto the inside with waterproof caulk).



Adult Black Soldier Fly. Photo: Jack Kelly Clark, Courtesy UC Statewide IPM Program. ©Regents of the University of California.



Black Soldier Fly Larvae. Photo: Michael Weston.