

# Soldierflies: Nature's Manure Managers

A University of Georgia entomologist believes that poultry and livestock farmers will find a friend in soldierflies.

Craig Sheppard at the Coastal Plain Experiment Station in Tifton, Ga., has studied these flies for 15 years. He concludes that they have the unusual ability to cut down on severe environmental problems associated with the buildup of manure and houseflies.

In addition to these benefits, the larvae of soldierflies make an excellent feed ingredient.

Studies show the larvae contain 42% crude protein and 35% fat. They can be fed to swine, poultry, and fish. Swine, in particular, relish the taste of fresh larvae, according to Sheppard.

He and his colleagues, Larry Newton and Sid Thompson, have also come up with a simple and practical way to collect the larvae. Their method takes advantage of the mature larva's instinct to spend its pupal stage of life in a dry location.

Using a 480-hen cage layer facility as a test site, the researchers installed a 12-inch-tall vertical wall at the top of the inner side of the manure pit. This keeps larvae from moving into the central walkway. On the opposite side of the manure pit near the outer wall of the house, they added a wall with a gradual 40-degree slope. At the top of this wall, they installed a 6-inch-diameter PVC pipe that has a 1/2-inch slit.

They then watched the soldierfly

larvae crawl from the manure pit, up the sloping wall, and into the slit of the PVC pipe. The larvae crawled the length of the 40-foot pipe until they dropped into a collection bucket.

Soldierflies compete with houseflies for living space. In Sheppard's tests, no breeding of houseflies occurred in the manure during the June through December period.

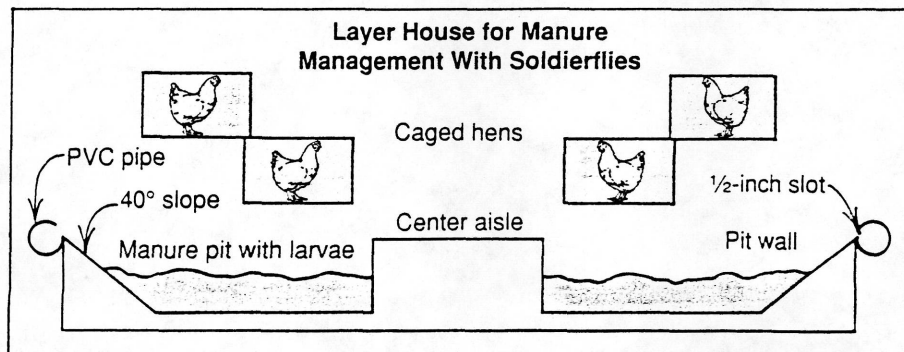
By digesting manure, soldierfly larvae reduced manure volume by 50% over the six-month period.

This soldierfly manure management system costs less to build and operate than manure flush systems, according to Sheppard. Also, egg producers may eliminate the need for larvicide treatments for houseflies, saving 10 cents per hen. The system cuts the cost of manure removal by 16.2 cents per hen.

Sheppard says the feed value of fresh soldierfly larvae is \$160 per ton, or 8 cents per pound. The manure from each hen should produce 1.32 pounds of larvae per year. This puts the feed value of the larvae at 10.6 cents per hen. Adding the savings in larvicide use and manure removal to the value of the larvae as feed gives a total economic benefit of 36.8 cents per hen per year. A producer with 20,000 hens could net an extra \$7,360.

Sheppard says the manure management system should work in swine facilities as well as in layer houses, and he is currently conducting tests to prove this point.

*This cross section of a layer house illustrates a manure management system using soldierfly larvae. The larvae leave the manure pit, climb the sloping wall, then enter the PVC pipe to be collected as a feed ingredient.* ILLUSTRATION: DOUG HARRELL



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