Beetles Prove An Effective Weapon In Controlling Flies

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destroy an average of 54 housefly eggs per day per beetle at 80 degrees Fahrenheit per day.

According to IPM Laboratories, well-fed female beetles lay serveral eggs per day and live more than three months. The beetles take 3-4 weeks to mature from egg to adult at 86 degrees Fahrenheit. Hister beetle larvae are active and voracious predators of housefuly eggs and young fly maggots, according to IPM Laboratories.

Within eight weeks, the beetles can produce enough larvae and adult beetles to eat house fly eggs. Generally when adult beetle popu-

lations are 40 per square foot or higher, fly control is usually adequate without additional measures.

Adult beetle populations typically reach 100 or more per square foot. IPM Laboratories indicated it has "frequently observed beetle densities as high as 250 beetles per quart of manure or 12 beetles per square inch of manure.'

Under suitable conditions, fly control is achieved in 10-12 weeks and will continue until cleanout.

Using beetle eggs from IPM Laboratories, Clark and Beiler were able to transfer the carcinops to layer house complexes in Lancaster. This is in culmination of

research undertaken by the University of North Carolina, Cornell, and Penn State.

IPM Laboratories has been working for several years to develop a method to mass-produce the beetle and successfully implement it into layer houses in the area.

Clark, who has worked in the poultry industry for 10 years, has read a lot of books on pest management and fly control," he said. The company wants to tackle the "whole issue" of pest management using nontoxic methods.

Clark noted the challenge was to come up with methods to allow producers to rethink their pest management strategies.

Instead of using expensive and unreliable chemical controls, a natural way of keeping flies under control in houses was needed.

In August, the company successfully implemented the beetle program in a Lancaster County poultry house. In all, about 50,000-60,000 beetles were released in in 30 different sections of the house for 95 percent control of the flies, according to Clark. After the beetles reproduced, in a couple of months, the IPM Laboratories found 8-10 beetles per half pint of manure, according to Glenister. The beetles are selfreplicating.

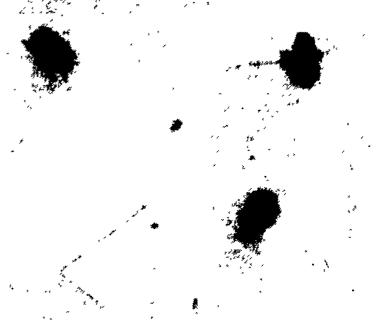
The beetle population rises and falls according to the amount of fly egg "food" that exists. The whole "ecosystem" of the layer or broiler house adjusts accordingly. IPM Laboratories has even come up with a way to trap the beetles (called the "Hister House") and clean the manure out.

Clark said that, in many cases,

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In the past, researchers knew about the effects of using the "hister beetle" (known scientifically as Carcinops *Pumilio*) to live in poultry house manure and eat fly eggs and larvae.

the costs can be readily justified compared to other control methods. The houses are healthier and diseases can be readily controlled.

The beetles provide a more stable environment, especially since the advent of avian influenza (A.I.) There are no harmful side effects from using the beetles, according to Clark.

Beetles can be placed in broiler, layer, and pullet houses. In fact, producers can use the beetles in any livestock, manure-producing operation to control flies.

Regarding the beetle, Penn State's research has not centered on mass-producing the beetles in a laboratory; instead, the focus has been on whether the beetles can carry Salmonella Enteritidis (SE) bacteria and the avian influenza (A.I.) virus.

So far, laboratory results were conclusive about salmonella, according to Pitts. Working in conjunction with the Penn State Department of Veterinary Science, Pitts has found out that the beetles, if not carefully handled, can transmit the salmonella bacteria in the house.

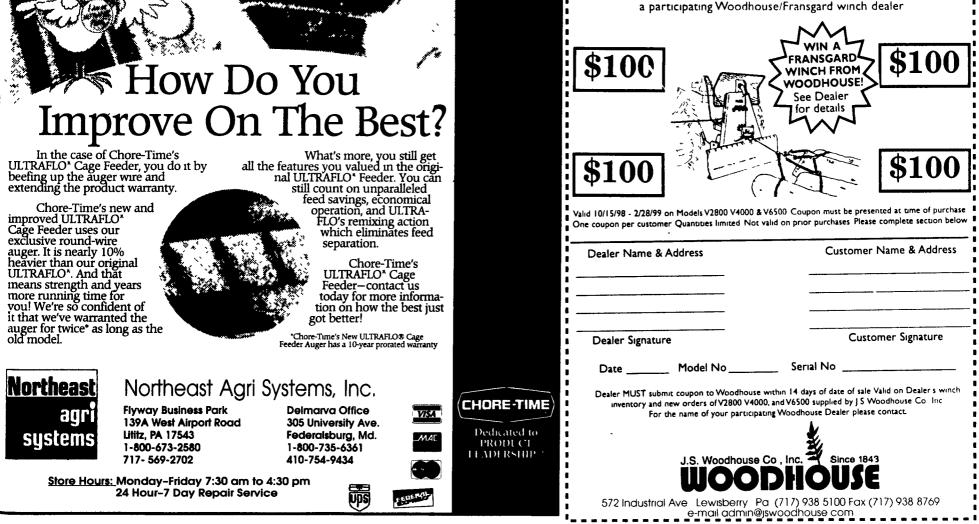
Clark noted the beetles raised at IPM Laboratories are guaranteed SE-free.

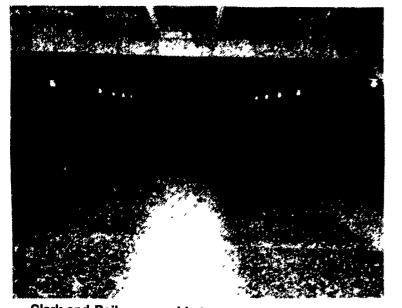
Within the next several weeks, Penn State will be looking into whether the beetle can carry the A.I. virus.

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