Stopping flies before they mature

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Common house fly, Musca domestica. Photo by Stephen Ausmus

An insect growth regulator is one of the latest technologies U.S. Department of Agriculture (USDA) scientists are adding to their arsenal to help fight house flies that spread bacteria to food.

Agricultural Research Service (ARS) scientists at the agency's Center for Medical, Agricultural, and Veterinary Entomology in Gainesville, Fla., are using an insect growth regulator called pyriproxyfen to kill house flies that spread bacteria that can cause diarrhea and other illnesses. When pyriproxyfen is applied to larval breeding sites such as manure, it mimics a hormone in the larvae, preventing the larvae from maturing.

According to ARS entomologist Chris Geden at the Gainesville center, the greatest potential use for pyriproxyfen may be via autodissemination, a process in which adult flies treated with the growth regulator carry it to

egg-laying sites. In his experiments, flies were treated with a dust containing pyriproxyfen and then allowed to lay their eggs on a larval medium. All immature flies died in the pupal stage.

Geden also studied the dosages required, the potency needed, different formulations, and the amount a fly can transport to the larval habitat. Small dosages of pyriproxyfen were extremely effective against house flies, which were able to carry enough back to their breeding sites to prevent immature flies from becoming adults. New, more potent formulations are being tested to improve the delivery system.

Baits and traps are other methods being used to help control house flies. Working with University of Florida scientists, ARS entomologist Jerry Hogsette at Gainesville has found that multiple traps may be needed at capture sites to effectively decrease fly populations. One reason is that house flies can use almost any moist surface as an egg-laying site. Flies also grow quickly, and can develop from an egg to an adult in less than seven days.

More information: Read more about this research in the November/December 2012 issue of Agricultural Research magazine. www.ars.usda.gov/is/AR/archive … ov12/insects1112.htm

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