New lures to doom crop-damaging caterpillars

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Enticing new lures developed by Agricultural Research Service (ARS) scientists could make backyard gardens, fruit orchards and crop fields places of no return for pesky caterpillars.

The lures, derived from molasses and floral odors, tantalize both male and female moths--the caterpillars' adult stage--with the promise of nectar.

Instead, the insects fly into the opening of a lure-dispensing trap, never to escape.

Peter Landolt, research leader at the ARS Vegetable Insects Research Unit in Wapato, Wash., and Connie Smithhisler, a chemist there, developed the lures as an alternative to chemically controlling the pests--loopers, cutworms, fruitworms, armyworms and corn earworms.

According to Landolt, most currently used lures act on the male moth's sense of smell. These lures work by dispensing a synthetic version of the female moth's chemical sex attractant, or pheromone, which the males find irresistible. Saturating the air with synthetic pheromone confuses the male moths, disrupting their ability to find mates. Such lures are also used to monitor the pests' movements and whereabouts. But most lures offer no way of keeping tabs on the female moths, according to Landolt.

He and Smithhisler overcame the problem by identifying, testing and synthesizing blends of volatile compounds from molasses that attract both sexes of moths. In another "unisex" lure formulation, the researchers combined various floral scents, including those from Oregon grape, honeysuckle and Gaura flowers. The molasses-derived lure is now commercially available for garden use as the product **SMARTrap**. The floral based lures are in their second year of field tests. In one trial, by Washington State University graduate student Leonardo Camelo, who works at the ARS lab, use of the floral lures in a "killing station" reduced the number of alfalfa loopers by 75 percent.

Read more about the research in this month's issue of Agricultural Research magazine, online at:
http://www.ars.usda.gov/is/AR/archive/nov04/moth1104.htm

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