by Linda Fridy

The state and federal governments have not given up on plans to spray Santa Cruz County and other areas infested with the light brown apple moth, but officials have yet to decide what compounds will be used and when the spraying will resume.

A federal spokesperson also said that officials believe the apple moth infestation started in Santa Cruz County and began to spread through nursery plants as early as mid-2005.

The California Department of Food and Agriculture (CDFA) announced Jan. 22 that aerial pheromone spraying would restart in "late spring or early summer," and the choice of what compound to use would depend on results of field tests the federal government is conducting in New Zealand.

The primary goal in the testing is to find a product that does not have to be applied as frequently as Checkmate LBAM-F, the pheromone solution used in 2007 that lasts about 30 days, according to state officials.

The U.S. Department of Agriculture invited manufacturers to submit products for aerial spray testing in New Zealand, and at least four have responded and will be evaluated, said department spokesperson Larry Hawkins.

The agencies intend to continue with pheromone-based products that interrupt mating cycles.

The light brown apple moth was first identified in the state in February 2007 in Berkeley when a retired entomologist found two in his backyard trap. The insect was soon traced to 11 counties, primarily in California's Bay Area and along the state's Central Coast.

The highest numbers have been found locally, totaling more than 70 percent of all identified apple moths statewide.

"We speculate it probably first came into Santa Cruz County, established itself in the area and got into nursery plants," said the USDA's Hawkins. "That begs the question of how many plants were sold out of state."

A Bigger Problem?

In late January, the federal government promised California nearly five times as much money, $74.5 million, as it gave last year in the fight to eradicate the light brown apple moth.

Part of that money will go to conduct surveys in all 50 states to see if the moth has spread further, Hawkins said.

Although no formal plan for the study has been set, he said it is likely to focus on nurseries that received plants from infested areas.

"The nursery industry is the most likely place for these insects to be spread around," he said.

They could survive in a large portion of the country, he added.

"If it's so widely dispersed that it's throughout the U.S., then attempting eradication would be pointless. At that point we'd be talking about a control program," Hawkins said.

While many of the fruit crops threatened by the moth are dormant in winter months, moths continue to be trapped and counted in the state. The most catches since late November have occurred in San Francisco.

Scientists are only beginning to see how the moth behaves in the new environment of North America, but they do know growth and life cycles are affected by temperatures. During winter months, moths could be more active in warmer urban areas, Hawkins said.

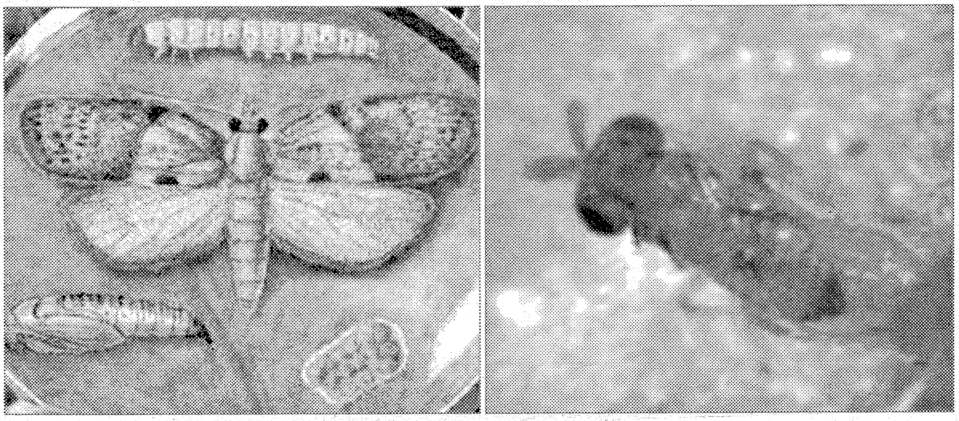
Additional Options Broached

While the CDFA determines its aerial spraying approach, it plans to continue ground treatments. It anticipates applying pheromones with twist ties in infected areas, perhaps as soon as this month. As with the spray, the pheromone reportedly confuses male moths and prevents mating.

A natural bacteria, available over the counter and often used by organic growers, can be very effective in areas with large numbers of young larvae. The bacteria are applied directly to plants, where the small caterpillars eat it and die, explained the USDA's Hawkins.

Another option the agencies are evaluating is mixing the pheromone with a pesticide to kill adult male moths. This mixture would be applied on utility poles and trees.

The agencies may release a natural predator of the moth, a tiny, stingless wasp called trichogamma. Female trichogamma wasps lay their eggs inside moth egg caches, and the wasp larvae feed on the eggs.



Rendering of the life-cycle of the light brown apple moth (left) and top view of the tiny wasp (right) which is a natural parasitoid of the light brown apple moth's eggs.