

Moth spraying could be a PR nightmare

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The light brown apple moth may not be the voracious crop threat portrayed by state and federal agricultural officials, according to some scientists who also warn that the aerial spraying of a pesticide over California's cities may turn out to be an expensive, unnecessary public relations nightmare doomed to fail.

U.S. and state agricultural departments support a \$74.5 million program to spray the pesticide over hundreds of square miles from Monterey County north to Solano County as early as this summer, but several of the state's top insect and plant scientists say the decision to do so should be reconsidered.

"It's not such a nasty pest. You're not going to see a plant succumbing to the light brown apple moth," said botanist Daniel Harder, executive director of the Arboretum at UC Santa Cruz. Harder visited New Zealand to research the moth's behavior there.

In the face of criticism, U.S. Department of Agriculture and California Department of Food and Agricultural scientists stand firm that there must be quick aerial spraying to eliminate the moth, which they say is newly arrived and whose larvae threaten more than 200 crops in the state worth multimillions of dollars. Nursery plants and native trees are also at risk, they say.

Thousands of Bay Area residents have signed petitions to stop the spraying, legislators have introduced five bills to control aerial application over urban areas, and four city councils have passed resolutions against it.

Hundreds of residents in Monterey and Santa Cruz counties, where pheromone pesticides were aeri ally applied late last year, have reported health symptoms, including shortness of breath, muscle aches and sore throats. Citizen groups are asserting that the government failed to disclose all of the contents of the two pesticides and that safety testing has been inadequate. This is the first time the pheromone-based pesticide is being sprayed over cities.

To suppress or eliminate

Among entomologists, the debate is more subtle. They are weighing the value of trying to "eradicate," which means complete elimination, against the less invasive technique of trying to "contain" a pest, which means suppressing or controlling it.



Some scientists from the University of California and other independent experts say the pest should be contained in urban areas, but the full-scale airplane onslaught should be saved for California's breadbasket, the Central Valley, which the agricultural departments are trying to protect.

Furthermore, they say, the moth probably has been in California for decades - not just in the last few years - and is too well-established in at least a dozen counties to be completely wiped out by aerial spraying of a pheromone that attracts male moths and disrupts the breeding process. The bug is considered a minor pest in New Zealand, where it arrived from Australia, they say.

The tens of millions of dollars given to California for the aerial spraying and related activities should be used instead to contain the moth and "slow the spread as much as possible to the Central Valley, if it's not already there," said James Carey, UC Davis entomology professor.

The light brown apple moth is in a class of insects called leaf rollers whose larvae, or worms, cocoon inside leaves, potentially pitting ornamentals and reducing vigor of a wide range of plants, including fruit trees and grapes. Growers already spray for other leaf-roller pests in California.

Warning that the moth could devastate the state's crops, agriculture officials have announced that they intend aerial spraying of a pheromone pesticide called Checkmate, or other yet undetermined products, over most of the Bay Area starting in August. The pheromones aren't toxic to moths, animals or people, they say, but curtail moth populations by disrupting mating. Spraying is scheduled for Monterey and Santa Cruz counties in June. The plan is to completely eradicate the moth in the 12 counties statewide where it has been trapped.

Carey says the plan won't work.

The state and federal agricultural departments need to acknowledge that "the pest has been here so long and is so widespread" that they don't have the tools or the monitoring technologies that are up to the task of eradication, he said.

Critics advise different plan

"It's virtually impossible to eradicate them," said Carey, who spent seven years on the state Department of Food and Agriculture's medfly scientific advisory panel and has published articles in scientific journals examining the effectiveness of the malathion spraying over cities in 1981 and 1982.

Carey estimates that the light brown apple moth has been in California at least 30 years and perhaps 50 or more. For containing the moth, he recommends a program similar to one used to slow the gypsy moth on the East Coast and in the Midwest. He'd use more intense treatment, including some insecticides, to protect the Central Valley.

Another UC Davis entomologist, Frank Zalom, an integrated pest management specialist who researches tree crops, fruits, vegetables and invasive species, says it's better to try to suppress - and not eradicate - the moth in urban areas.

"Using pheromones over urban areas runs into expense and conflict," he said. "I think they should be considering other options."

Over time, natural predators will develop. "It wouldn't be too surprising that they jump over and start working on the light brown apple moth," though not necessarily controlling them, he said.

UC Berkeley associate professor Miguel Altieri, who teaches agroecology in the department of environmental science, policy and management, agrees that "the fact that the moth is here doesn't mean devastation."

In a global economy, there are going to be invasive pests, he said. Every one of them cannot be eradicated with a spray program.

Pheromone called benign

Larry Hawkins, a USDA spokesman, takes issue with entomologists who say that the light brown apple moth has been around for decades and that it can't be eradicated with a pheromone.

Critics are willing to give up without trying, he said. "We're not willing to give up. That's the difference. There has never been an opportunity like this one to use a product as benign as a pheromone to eradicate a pest."

The USDA's technical working group, composed of state and federal officials as well as scientists from other countries, made the decision to eradicate, saying the pest is a grievous threat and must be eliminated. The decision opened the way for federal funding. The state agricultural department has gone along with the decision.

However, the working group may be willing to meet with entomologists who have useful data, Hawkins said.

The light brown apple moth took up residence in New Zealand perhaps a century ago and is not considered a pest there, said entomologist Philippa Stevens, leader of the plant disease and insect group of HortResearch, a governmental science group in New Zealand.

They find an occasional light brown apple moth on avocados, kiwis, apples, persimmons and citrus, among other plants, she said in an interview.

"Although it has been recorded on the crops, it is not a significant pest," said Stevens.

No eradication measures have been taken against the moth, she said. A pheromone is used only to bait traps to monitor the presence of the insect, she said. In New Zealand, the moth is kept under control using natural enemies, insecticides and other measures, she said.

"There's no reason to believe it's going to be more of a problem in California than any other native moth in the Tortricidae family," said the UC Santa Cruz Arboretum's Harder, who went to New Zealand to research the moth after he learned it was trapped in California last year.

Earwigs, birds and spiders will eat the pest, Harder said. The moth larvae "look like another tube of meat to them."

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