

Sticky Trap Count Nails Down Thrips Pest Control Dates

"We must forget the calendar way of farming, modify our techniques, and do things scientifically," says pest control consultant Ibrahim Michael, who has devised a citrus thrips control program which is paying big cash benefits to valley citrus producers subscribing to his integrated approach to pest control.

Michael, owner-operator of Michael's Pest Management of Fresno, contends the citrus thrips is one of the most important citrus pests. It

damages and reduces both citrus quality and quantity from April through July, causing large amounts of otherwise excellent fruit to be rejected at the packing houses.

For years growers have been using chemical control of citrus thrips on a hit-and-miss basis, said Michael. Often, many of them will spray two or three times a year without achieving effective control. But they cannot be blamed for wasting their time and money when they miss because no one seems to know when is the best time to spray, to spray for the most effective control of citrus thrips.

"I don't mean to step on any toes regarding citrus thrips treatment recommendations," said Michael almost apologetically. "But a person can read a whole lot of books, talk with experts in the field and find very little about controlling citrus thrips effectively."

The Cairo-educated toxicologist and plant pathologist believes the answers leading to economic and effective control of citrus thrips lie in understanding the true and complete biology of this injurious pest.

He has devoted 23 years of his life to tracking down clues on citrus thrips control, and now believes he has an economical and effective control technique designed to deal with this citrus pest specifically. His current technique is based on citrus thrips control programs developed over the years by the US Department of Agriculture and the University of California.

Michael freely admits that complete chemical control and total



biological control are not the ways to control thrips in citrus. However, he strongly supports the idea of combining these two practices to achieve an integrated pest control program for the most effective results.

Valley citrus growers employing Michael's citrus thrips control program during the past three years have high praise for his solution to the pest problem. Careful study of the pest's behavior and biology by Michael has led to a monitoring technique which keeps close tabs on the thrips and its development under the citrus groves' leaf canopy.

He explains that citrus thrips larvae, the most dangerous feeding stage of the pest, destroy young leaves and damage tender fruit. When the larvae reach the pupae stage, they drop to the ground to find refuge in the soil. Then they emerge later as adults. These adults fly up into the trees and lay eggs again in the fruit and leaves, causing injury known as "spotting."

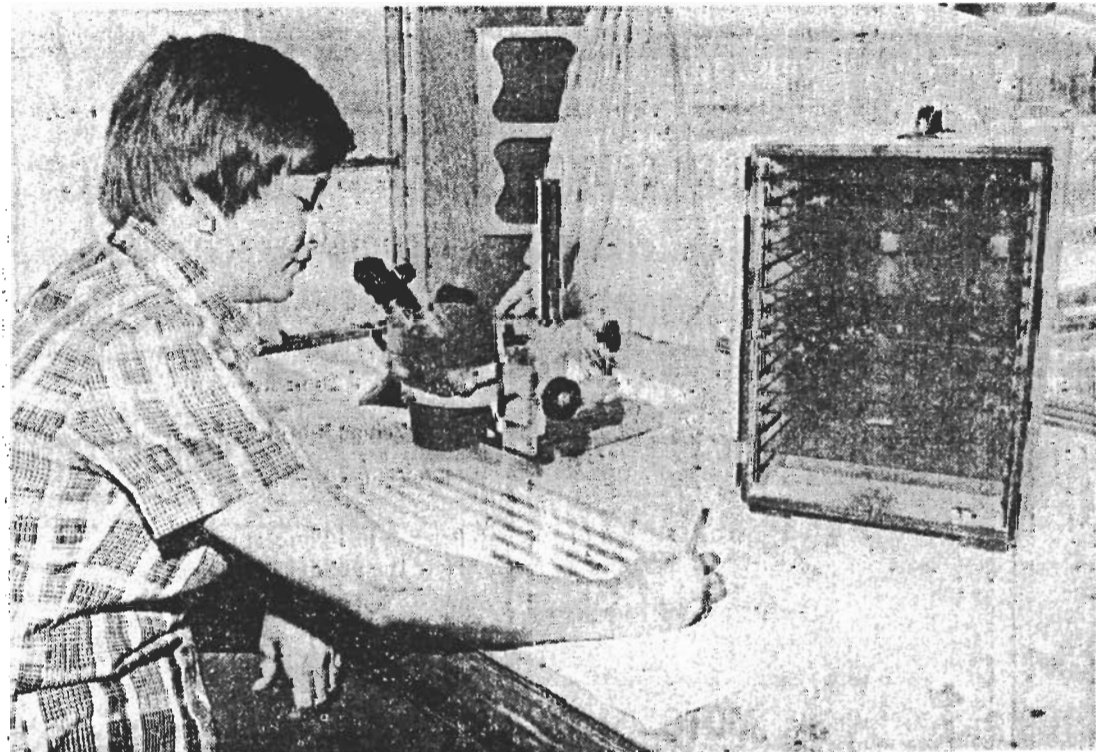
This spotting injury is "a cosmetic thing," according to Michael, but packing houses have to cull citrus affected with this symptom to meet grade standards for fresh-fruit shipment.

Michael, who also studied insect control at the University of California

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Citrus grower Bob Hines, left, and pest control adviser Ibrahim Michael check a sticky glass plate used for catching citrus thrips in a field monitoring program.



Lab technician Peggy Smith makes thrips counts and graphs them to determine peak buildup. The timing of chemical treatment is based on population levels.

Thrips: Traps Tattle-Tale On Citrus Bugs

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at Riverside, said, "We found the larvae and the adults have different photostatic behavior in the citrus tree. Therefore, visual inspection is difficult to accomplish. The citrus thrips can also be easily confused with the flower thrips, which is a harmless pest."

The approach used by Michael is a modified technique of control programs applied by the USDA Boyden Laboratory Station at Riverside. "We put this technique into practical use and gain information helpful to our pest control program," he said.

The time of day is a critical factor in determining which thrips growth stage is most dominant in the citrus grove, according to Michael.

He uses traps equipped with plexiglas sheets, which are covered with sticky material on both sides to catch falling larvae and adults trying

to wing their way up into the tree. The traps are placed at selected locations (stations) in the grove. They are also rotated around the base of the tree every three to seven days and give Michael an excellent indication of thrips development and activity.

The sticky plates are collected from the grove and checked at Michael's Fresno laboratory. The total number of thrips and their stage of growth are determined at the lab and plotted on a graph.

"With this technique, we have a continuous survey of the insect situation in the citrus grove," Michael explained, "and it enables us to determine the optimum timing for chemical treatment, if it is needed."

The pest control consultant said that thrips are easy to control with chemicals. But timing is the most important factor in effectiveness.

"Our traps will tell us about thrips population buildup and we can warn the grower and tell him when to treat," Michael said.

Bob Hines, an East Side citrus grower located between Centerville and Piedra, started using Michael's thrips control technique nearly three years ago.

Hines said, "I used to spray once, twice and sometimes three times a year for red scale and citrus thrips. Sometimes, my chemical applications were on target and I got good control. Other times, it seemed like I was wasting my money. Timing is the key factor, no doubt about it."

Knowing when to treat and being prepared to do it within a 24 hour period is the way Hines has been able to cope with his thrips problem. He said, "Michael's technique has given me confidence in thrips control, something I didn't have before."

Michael pointed out that spraying is costly and two or three applications a year can amount to a third of a grower's total production costs, excluding harvesting.

"Economics is the name of the

game," he said, "and growers are looking for quality fruit with lower production costs. My technique is designed to give this to them."

But Michael's pest control program is more involved than mere trapping, counting and issuing control recommendations. He is continuously collecting field data, which he digests statistically and plugs into his overall agriculture consulting program.

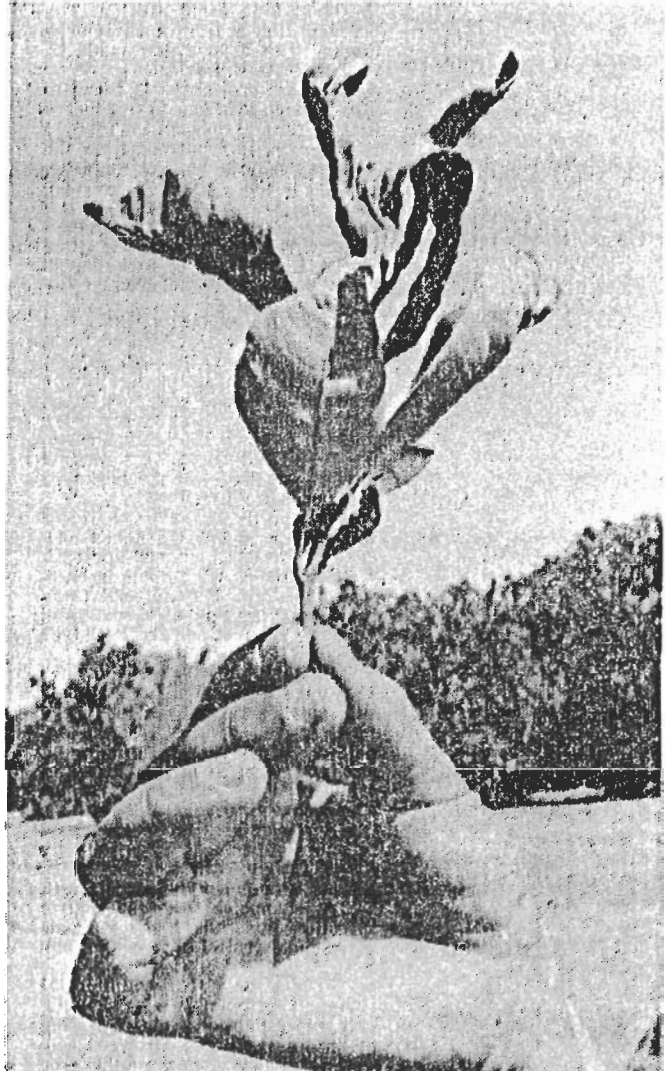
His citrus thrips control program is an off-shoot of an earlier and highly successful technique of controlling citrus red scale with sex pheromone traps.

His pest control techniques are currently being used by grape and almond growers such as Jura Farms of Fresno, the Harris Ranch, and Ivanhoe citrus grower Richard Pelzer.

The thrips control season is over now, but Michael and his crews are prepared for next year with their trapping service. "Thrips like dry weather," Michael said, "and another droughty year could spell trouble."



Michael shows typical thrips injury on a small orange. The spotting and circled area around the base of the fruit will require it to be culled at the packing house.



Mis-shapen leaves from citrus trees are indicative of citrus thrips' damage. Thrips will also attack and scar the surface of maturing fruit.