



TIPS FOR AVOCADO THIRPS

TIPS FOR AVOCADO THIRPS: THIS YEAR'S CROP DAMAGE IS WORST SINCE 1990S

This year's avocado harvest in coastal California has been ravaged by avocado thrips, the little insects that feast on newly set fruit and leave lasting scars. Cold, wet and foggy weather conditions in late spring 2023 are causing 2024's crop to get downgraded due to the tell-tale tan skin blotches caused by avocado thrips.

"Thrips go after avocados the size of BBs or peas up to large olives, and just two or three thrips will cause significant damage," said Tom Roberts, a pest control advisor and owner of Integrated Consulting Entomology. "When the weather is cold, it takes the fruit longer to size up, leaving it vulnerable to thrips for an extended period."

This year's harvest in coastal areas is the most thrips-damaged since the late 1990s, when avocados were first successfully treated for thrips with abamectin.



AN (IM)PERFECT STORM

Late spring into summer 2023 presented a perfect storm of conditions allowing for pernicious thrips to damage crops. Up and down the coast, cold, wet weather settled in. Conditions grounded applicator helicopters and prolonged the period for thrips to damage the crop.

"Thrips thrive in colder weather, but if it's too cold, they are less active and less likely to contact treatments like abamectin," commented Roberts. "Even if the helicopters treated the crop for thrips, chilly insects were hidden away, rendering treatments ineffective. Pollinators also were lazy due to the cold, so the fruit set was delayed, extending the treatment window and making it less predictable."

Cold weather also stunted fruit growth, so thrips outlasted the efficacy of abamectin. Firing up helicopters to treat for thrips a second time in early summer would cost upwards of \$20,000, a sizable input to consider for farmers operating on tight margins.

TIMING TREATMENTS

Avocado thrips first became prevalent in California in the mid-1990s and wreaked havoc until growers got clearance to apply abamectin to the crop in 1997/98. At 50 gallons per acre, an application of abamectin will treat for thrips and protect the crop. It must be applied during the window when leaf flush is at about $\frac{1}{3}$ to $\frac{2}{3}$ of leaf expansion and the fruit is just setting. "Thrips need good leaf flush to build numbers," Roberts said. Leaf flush was delayed in 2023, which likely slowed thrips population growth, but at the same time provided less surface for the abamectin to collect.

In a typical year, leaf expansion will hit the $\frac{1}{3}$ to $\frac{2}{3}$ mark around the time that fruit is setting. Thrips thrive in this period, when the fruit is so immature it's still in the sepal, making a little home for the thrips. The insects like leaf flush as well, so they will come out of hiding and contact the treatment on the soft young leaves.

The ideal time for treatment will vary slightly by region and year. Your crop advisor or entomologist will know the best timing for treatment, and it's important to get on the schedule. Helicopters are a limited resource, which can create scheduling challenges when the thrips window is "a moving target," according to Roberts. Much of the growing region that is most vulnerable to thrips requires treatment in late May or early June.



Thrips do not like heat. If a heatwave strikes and temps climb over 86 degrees, a crop advisor might recommend holding off on thrips treatment. Heat will take down thrips populations and accelerate fruit growth and push it past thrips vulnerability.

"If the fruit is over an inch in diameter, it takes significantly more thrips to cause visible scarring," noted Roberts.

TREATMENT RESISTANCE AND PROTECTING GOOD BUGS

Hindsight is 20/20, and Roberts notes that timely application of a pyrethroid most likely would have reduced thrips numbers quicker in 2023. Pyrethroids are contact materials that are more deadly than abamectin, but at the cost of also eliminating resident predaceous insects that are needed to naturally regulate pest populations like omnivorous looper and longtail mealybug. Protecting populations of good bugs in the orchard can be as important as timely treatments against bad bugs.

Resistance is another factor in deciding what material to use for thrips management. Insect experts, such as Dr. Joe Morse (U.C. Riverside), observe that thrips will likely develop a resistance to abamectin. Cycling in alternative treatments like sabadilla and spinosad could help to limit resistance to abamectin and assist in the long-term fight against thrips.

TOM ROBERTS,
AGRICULTURAL BIOLOGIST; PCA. INTEGRATED CONSULTING ENTOMOLOGY (ICE)

