

Aerial AgriMek for Persea Mite Control

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Benefits to the Industry

Persea mite is a serious pest of avocados in California. Uncontrolled persea mite populations cause cycles of tree defoliation and refoilation, increased sunburn of exposed fruit, smaller sized fruit and general weakening of the trees. Fortunately, the last three years the avocado industry has had available the use of the miticide/thripicide AgriMek. This study will increase the knowledge of how to best use AgriMek to maximize the efficacy, cost and timing of this material.

Objectives

1. Evaluate three application rates (10 oz, 15 oz, and 20 oz.) of AgriMek and two aerial spray volumes (50 GPA and 100 GPA) for efficacy on Persea mite.
2. Conduct two separate timings of application (expanded flush and summer) to evaluate best time to treat persea mite. For the expanded flush timing, show added benefit of avocado thrips control.

Project Activities

Trial 1 – Expanded flush timing – This trial was applied May 16, 2001 to a Hass avocado grove in Santa Rosa Valley in Ventura County with a consistent history of persea mite. The grove is eleven acres of 15-20 foot trees with an open canopy. The grove was in mid bloom with an abundance of expanding, tender flush present. The presence of tender leaf growth facilitates the translaminar activity of AgriMek, enhancing residual activity on mites and thrips. There was a major drop of last years' foliage underway. This was a prefruit set timing. No set fruit was being retained. "Petal fall" and the major fruit retention were 2-3 weeks away.

The treatments applied were;

AgriMek, 10 oz + 4% NR415 oil @ 50 GPA
AgriMek, 10 oz + 4% NR415 oil @ 100 GPA
AgriMek, 15 oz + 4% NR415 oil @ 50 GPA
AgriMek, 15 oz + 4% NR415 oil @ 100 GPA
AgriMek, 20 oz + 4% NR415 oil @ 50 GPA
AgriMek, 20 oz + 4% NR415 oil @ 100 GPA
Success, 10 oz + 4% NR415 oil @ 100 GPA = Untreated Control

All treatments gave control of avocado thrips through the critical fruit setting and sizing period.

Persea mite levels at the time of treatment were very low, as expected. Persea mite populations were followed at weekly intervals in the UTC replicates. Once persea mite showed signs of increasing in the UTC, counting in all treatments was to commence. This increase, based on previous years experience, was expected to start in July and continue through the summer into October and November.

As of the date of this writing, September 1, 2001 the perseia mite level in the UTC remains very low, 2.7 mites per leaf. The level of perseia mite in other avocado groves in the immediate area, as well as in Ventura County in general, is exceptionally low. Untreated perseia mite populations in a typical year at this time of the season would range from fifty to two hundred mites per leaf. This is the first year in eight years of perseia mite infestations that it hasn't exhibited a dramatic increase in the summer. The spring weather was very cool and avocado grove phenology has been late all year. Monitoring will continue, there is still time for the population increase to happen.

Trial 2 – Summer timing – This timing is to be applied to an increasing summer population of perseia mite. This typically occurs in July and August. This plot has not yet been applied due to the delayed development this year of the perseia mites. Even in untreated (no earlier AgriMek applied for avocado thrips) blocks, perseia mite is very slow to develop. There is still time for the population to increase. When this occurs, the plot will be applied. There is the possibility that a suitable mite population will not develop and the plot will have to be delayed to next year.

The treatments to be included with this timing are;

Untreated

Standard, 15-18 gals NR415 oil @ 100 GPA

AgriMek, 10 oz + 4% NR415 oil @ 50 GPA

AgriMek, 10 oz + 4% NR415 oil @ 100 GPA

AgriMek, 15 oz + 4% NR415 oil @ 50 GPA

AgriMek, 15 oz + 4% NR415 oil @ 100 GPA

AgriMek, 20 oz + 4% NR415 oil @ 50 GPA

AgriMek, 20 oz + 4% NR415 oil @ 100 GPA