

Population Dynamics and Epidemiology of Navel Orangeworm Damage to Pistachios: Influence of Mating Disruption on Trap Capture

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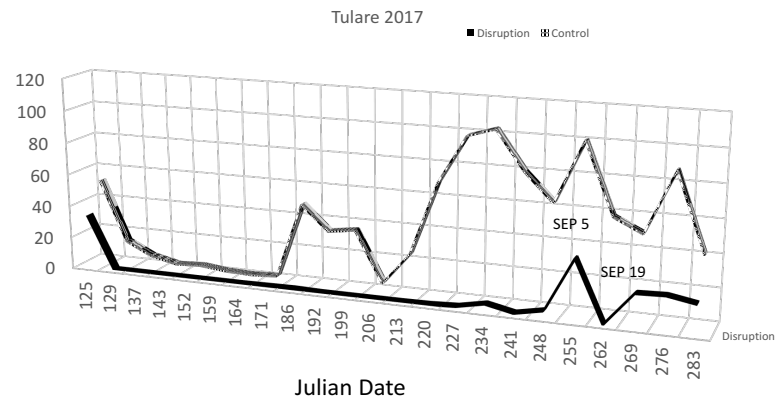
INTRODUCTION

The purpose of my research is to improve control of navel orangeworm by a combination of improved spray timing, increased application efficacy, proper insecticide choice and rotation, and the integration of mating disruption, into an existing control strategy. Additionally, I monitor the pattern of harvest damage, using grade sheets supplied by individual growers and processors, with the goal of improving navel orangeworm control.

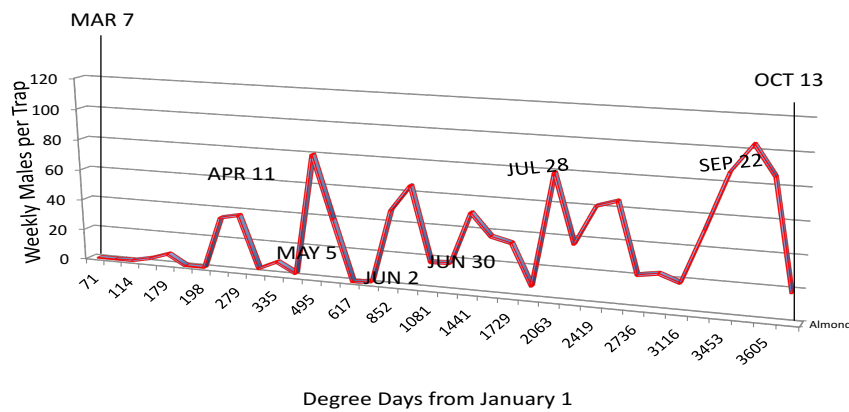
RESULTS

In 2017, I ran a series of pheromone traps both within mating disruption blocks of pistachios and in almonds adjacent to mating disruption. These graphs illustrate that although mating disruption shuts down traps for long periods, trap capture spikes during periods of mass NOW movement. By the time a peak is recognized, it is often too late to prevent damage. Consequently, it is better to use mating disruption and a full-spray schedule for the first year of implementation until the standing population is reduced.

Mating disruption block compared to nearby control block, Tulare County.

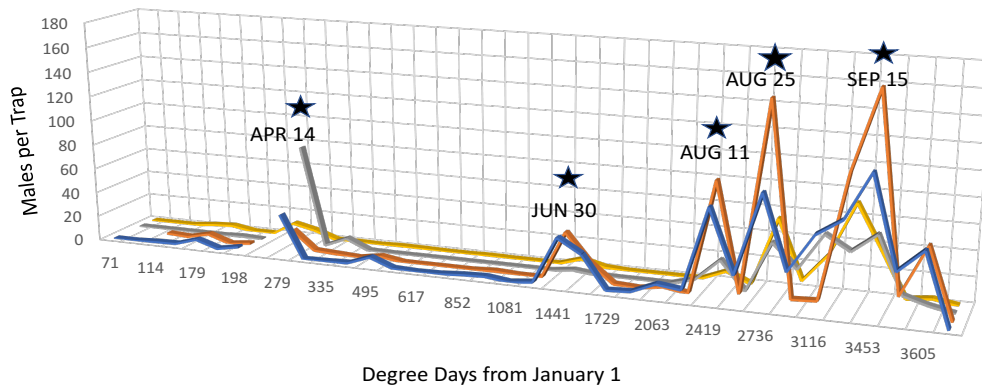


The following graph illustrates the pattern of activity in Madera County, using traps located in a 1,000-acre almond block that is not using mating disruption.



The next graph reports the pattern in a Madera pistachio block with partial mating disruption. Stars mark shared activity peaks with almonds.

Madera Pistachios: 1/3 of acreage in mating disruption



CONCLUSION AND PRACTICAL APPLICATIONS

Despite mating disruption, pheromone lure traps caught moths, during peaks, in flight activity (measured in almonds) throughout the season. In Tulare County, trap suppression was most effective from early-May through early-September, while in Madera County the intervals were shorter; mid-April through late-June and basically the month of July. These data underscore that huge populations are moving into pistachio orchards after Nonpareil almond harvest, and it is essential to stick with the premating disruption spray program, even when no moths are captured, until the standing population is reduced. These late-August to late-September capture peaks coincide with higher pistachio damage. On the bright side, these data demonstrate that traps placed several miles from mating disruption blocks can successfully indicate NOW pressure.