Use of Mulches for Control of Pest Thrips in Avocado Orchards

Mark S. Hoddle, UC Riverside
Michael Brownbridge, University of Vermont
Paul De Ley, UC Riverside
Overview

• Background on CA avocado industry
• Overview of key pest biology in avocado orchards
• Rationale behind evaluating mulches for thrips suppression in avocado orchards
• Summary of major findings on entomopathogenic fungi, nematodes, & predatory mites from field surveys
• Have we demonstrated field level impacts on pest populations?
• Can cover crops play a role in controlling GWSS populations in CA?
Avocado Production in California

- CA produces 90% of all avocados in the USA
- San Diego produces 45% of the annual crop by value
- Hass cultivar accounts for 85% of harvested fruit
- Approx. 6000 growers producing 165,000 tons of fruit on 58,000 acres
- Crop worth $300 million

Avocados are grown from San Luis Obispo to San Diego.
Avocado Thrips, *Scirtothrips perseae* Nakahara (Thysanoptera: Thripidae)

- First discovered in CA in 1996 in Ventura & Orange Counties
- Similar to specimens found on smuggled avocados from Oaxaca at the Port of San Diego in 1971
- Undescribed species when first discovered. Officially named in 1997
- Appears to be monophagous in CA and native to Mexico & Guatemala
- CA populations originated in central Mexico
- Crop losses $8-13 million per yr
Avocado Thrips Feeding Damage

Leaf scarring

“Alligator Skin” on small fruit

Elongate scarring on maturing fruit
Distribution of Avocado Thrips (*Scirtothrips perseae*) in Central America

*S. perseae* replaced by new *Scirtothrips* sp. in Costa Rica

Not found in Caribbean
Mulches for Avocado Thrips Control

- Composted organic yard waste
  - Root rot control
  - Water retention
  - Improved soil fertility
  - Weed suppression
  - Improved plant growth
  - Thrips control??