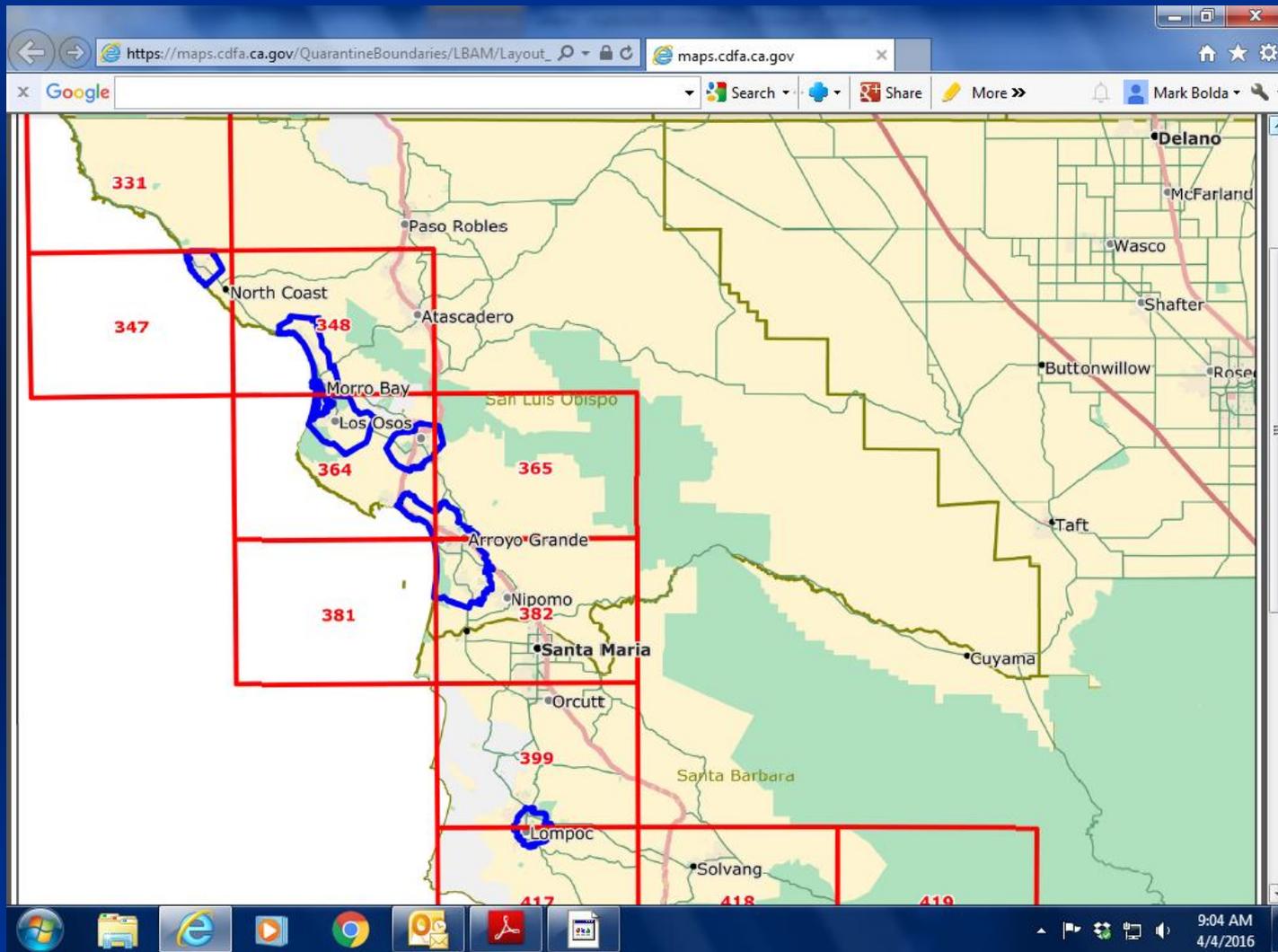

Light Brown Apple Moth (LBAM) in Caneberries

San Luis Obispo, April 13, 2016

Mark Bolda, UCCE

Why should this be important to you?



https://maps.cdfa.ca.gov/QuarantineBoundaries/LBAM/Layout_ maps.cdfa.ca.gov

Google Search Share More >> Mark Boldo

381 382 399 417 418 419 434 435 436

Nipomo Santa Maria Orcutt Cuyama Santa Barbara Solvang Wheeler Springs Ventura Ojai Carpinteria Isla Vista Oxnard Port Hue

9:05 AM 4/4/2016

2016 Regulatory Activity in Caneberries and Strawberries

- USDA and CDFA regulatory program on the move.
 - Many fields shut down for shipment outside of the quarantine, expensive and disruptive!
-

Identification of Light Brown Apple Moth









The Challenge

- Develop an integrated program of LBAM management which brings field populations near to zero, stops fields from being shut down.

Mating Disruption in Caneberries

- Concept

Pheromone based twist tie application for mating disruption



Using twist ties in the field

- 200-300 ties per acre, put ties further around the edge of the field as much as possible.
 - Tie's life is 4 to 6 months, replace afterwards.
 - Pick up ties from country agricultural commissioner, call 763-8080 and talk to Rosemary.
-



Couple of items concerning the twist tie use







Chemical Efficacy in Order of Decreasing Effectiveness

- Intrepid, Delegate, Radiant, organophosphates, pyrethroids
 - Entrust
 - Bt's
 - Pyganic
 - Oils
-

-
- Physical removal of rolls from the field.
-

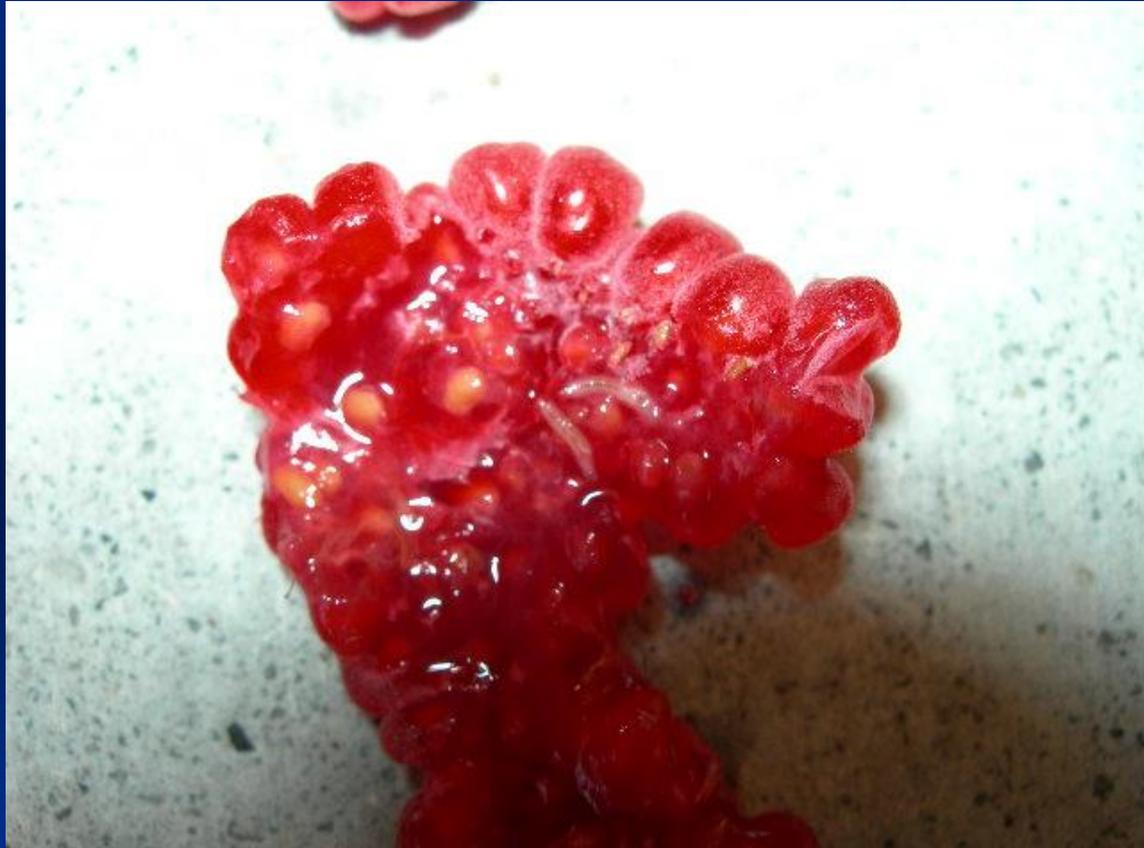
Putting it All Together

- Insecticide sprays on detection of leafrollers in the production field.
 - Physical removal and destruction of leafrolls found in the field.
 - Use of pheromone based mating disruption to keep overall numbers down.
-

Spotted Wing Drosophila

Mark Bolda, UCCE and Ed Show, Driscoll
Research Associates





Keys to Successful Management of the Spotted Wing Drosophila

- Monitoring and trapping to quickly detect infestations.
 - Use of sprays or baits to suppress fly populations.
 - Use of enhanced sanitation to reduce numbers of flies remaining in the field.
-

Monitoring and trapping for spotted wing drosophila

Yeast + Sugar + Water

- One package Baker's yeast (0.25 oz)
- 12 ounces water
- 4 teaspoons sugar
- Will fill 4 to 5 traps

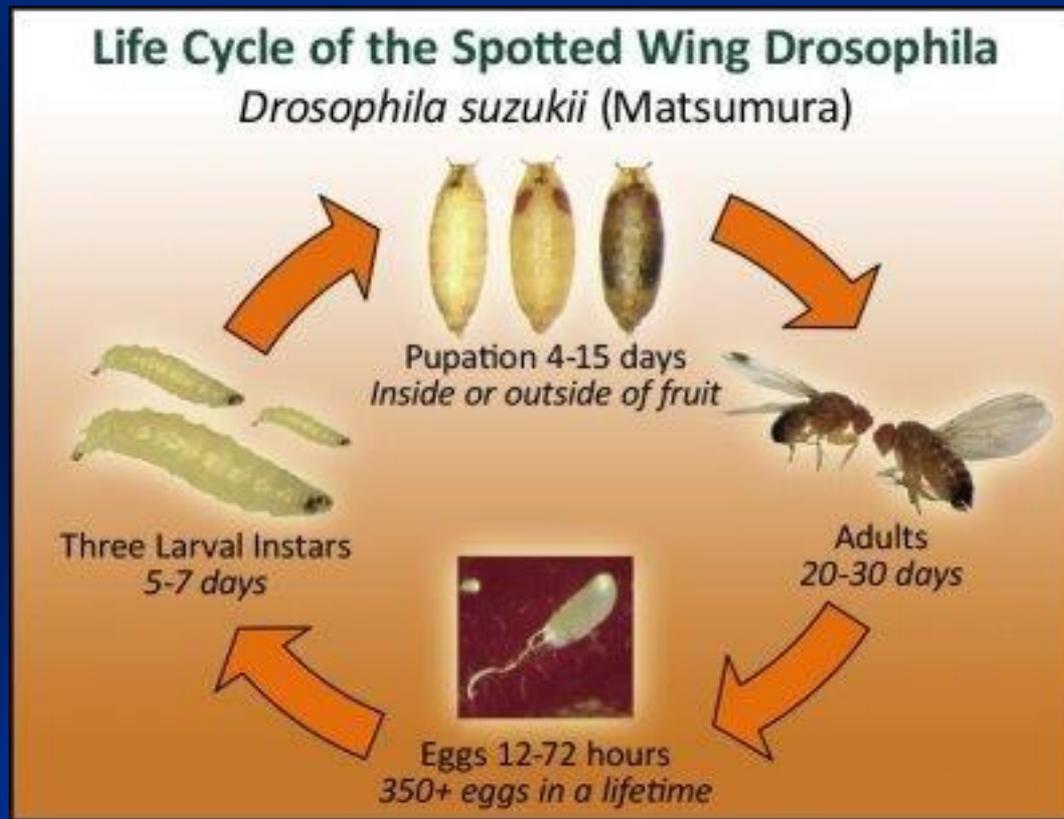
OR

- Apple cider vinegar
-

Monitoring – Early Detection



What is the life cycle of SWD in the Central Coast?



Sampling to find where SWD is in the winter time

- Work done by Katrina Hunter as senior thesis
 - Sampling of areas surrounding fields, further away from fields and pupae in soil.
-

Overwintering

- Overwintering as adults of both genders, in very low numbers but associated with agricultural areas.
- Not overwintering as pupae.
- Flies start flowing back into fields March, populations damaging from mid-July on.

Spraying to Control Spotted Wing Drosophila

Chemical Sprays for Spotted Wing Drosophila Management

- **Work well**

Malathion, Mustang and Delegate

- **Work OK**

Entrust, Pyganic

- **Don't work**

Oils

A note regarding the spinosyns Delegate, Success and Entrust

- Most of the activity is by ingestion.
 - Therefore, by enhancing ingestion (addition of sugar or bait) we should be able to enhance efficacy.
 - Note that Nulure or acetic acid acidify.
-



Organic Pesticide Testing 2015 – IR4

- Venerate
 - Grandevo
 - Entrust
 - Veratran
 - Cimex
-

Organic Management of SWD

- Pyganic and Entrust give very short periods of control.
 - Two closely spaced max rate Pyganic applications.
 - A single Entrust gives the same.
 - Sanitation key.
-

Cultural management

Implementing Sanitation



Implementing Sanitation





Implementing Sanitation



Implementing Sanitation



Recommendations for Monitoring and Trapping Spotted Wing Drosophila

- Use an effective bait placed at regular intervals in the fruiting field to detect initial entrants into the field.
-

Recommendations for Spotted Wing Drosophila Management in Berries

- The pesticides malathion, Mustang and Delegate are very effective in controlling spotted wing drosophila.
 - Organic growers: high, frequent rates of Pyganic or Entrust work.
-

Recommendations for Spotted Wing *Drosophila* Management in Berries

- Sanitation; removal and destruction of infested fruit will be essential in keeping down total numbers of flies.
-

