

## ORCHARD PEST MANAGEMENT

Adapted from the UC IPM Guidelines, www.ipm.ucdavis.edu

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## PEACH LEAF CURL

#### **MANAGEMENT**

One spray after leaf fall. In years of high rainfall, treat again before bud swell.

#### **MATERIALS**

- Ziram 76DF Chlorothalonil
- Bordeaux Mixture (O) (O)= allowed in organic
- production



Leaf curl symptoms on green peaches



Peach leaf curl

Gum exudes from flower



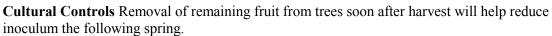
Peach leaf curl

## BROWN ROT

#### **MANAGEMENT**

**Fungicides** Bloom sprays to reduce blossom and twig blight help minimize ripe fruit rot. Treat at 20 to 40% bloom and again at 80 to

100% bloom, if heavy rainfall.



#### **MATERIALS**

- Tebuconazole/Trifloxystrobin (Adament)
- Propiconazole (Bumper, Orbit)
- Tebuconazole (Elite)
- Fenbuconazole (Indar)



brown rot



Brown rot spore masses

## FIRE BLIGHT

#### MANAGEMENT

**Pruning:** Prune out and destroy diseased wood, cankers, and blight strikes. Schedule treatments with degree day models.

#### **MATERIALS**

- Streptomycin sulfate (Agri-mycin) apples & pears
- Oxytetracycline (Mycoshield) apples & pears
- Blight Ban for pears
- Bordeaux mixture (O) apples



Blackened fruit and bacterial ooze, Fireblight



## SPOTTED WING DROSOPHILA

#### MANAGEMENT

Monitor fly with traps to determine population numbers and efficacy of sprays. Remove all infested fruit and dispose of it immediately. Remove pollinizer fruit before main crop is pink. Attractant baits can reduce numbers.

Sprays need to start at light straw color in cherries, in order to prevent damage. Repeat at 7-10 day intervals, rotating materials.

#### **MATERIALS**

- GF-120 Spinosad bait
- Malathion
- Delegate (Spinetoram) • Provado (Imidacloprid)
- Entrust (Spinosad) (O)

Larva of spotted wing drosophila, Drosophila suzukii.

Spotted Wing Drosophila

Female, above; Male, right



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## PEACH TWIG BORER

#### **MANAGEMENT**

**Insecticides** Treatment at bloom is preferred.

Delayed dormant sprays of oil and spinosad or diflubenzuron.

Mating disruption: pheromones to supplement bloom time sprays, not effective alone.

#### **MATERIALS**

- Mating disruptants (Checkmate)
- Narrow range oil (O)
- Bacillus thuringiensi ssp. Kurstaki (O)
- Spinosad (Success, Entrust (O))
- Methoxyfenozide (Intrepid)

#### **Biological Control**

Common natural enemies:

- Gray field ant
- Chalcid and Braconid parasitic wasps
- Grain or itch mite



Adult peach twig borer



Mature peach twig borer larva

## CODLING MOTH

#### MANAGEMENT

### Cultural controls

- Remove host trees in nearby abandoned orchards.
- Remove props, picking bins, and fruit piles from the orchard.
- Hand thinning to remove all infested fruit during each generation, before worms leave fruit, and removal of dropped fruit

**Biological Control** Augmentative releases of the egg parasite *Trichogramma platneri* **Insecticides** Use degree-day calculations to determine spray timing.

**Mating disruption** Use historical biofix data to determine when to set traps.

### **Organically Acceptable Methods**

- Cultural control in conjunction with mating disruption and approved sprays.
- Hand-applied pheromone dispensers.

#### **MATERIALS**

- Mating disruptants
- Acetamiprid (Assail)
- Phosmet (Imidan)

- Spinosad (Entrust) (O)
- Cydia Pomonella Granulovirus (Cyd-X) (O)
- Narrow Range Oils (O)
- Kaolin Clay (Surround) (O)



Adult codling moth



Mature codling moth



Deep entry by codling moth larvae

## ORIENTAL FRUIT MOTH

#### MANAGEMENT

#### Mating disruptants

**Insecticides** Time sprays with degree-day calculations

**Biological Control** The wasp *Macrocentrus ancylivorus* is a common parasite of Oriental fruit moth and Peach twig borer larvae.

#### **MATERIALS**

# • Mating disruptants (Checkmate, Isomate)

• Spinosad (Success)

### **Organically Acceptable Methods**

- Mating disruptants
- Entrust formulation of spinosad



Adult OFM



OFM larva



OFM shoot strike



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