Spotted Wing Drosophilla:
A New Pest of Cherries, Berries and…?

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Spotted Wing Drosophila

Drosophila suzukii

A new spp. of vinegar fly

Attacks sound, ripening fruit

Spotted Wing Drosophilla:
What Does It Do?

Maggots in fruit!!

Spotted Wing Drosophilla: Where Did It Come From?

- Native to Asia
  - Japan, Thailand, Korea, China
- Hawaii
  - About 15 years
  - no reports of crop damage
- Spain
  - A couple of years
  - no reports of crop damage

Spotted Wing Drosophilla:
Where Is It Now?

California detection

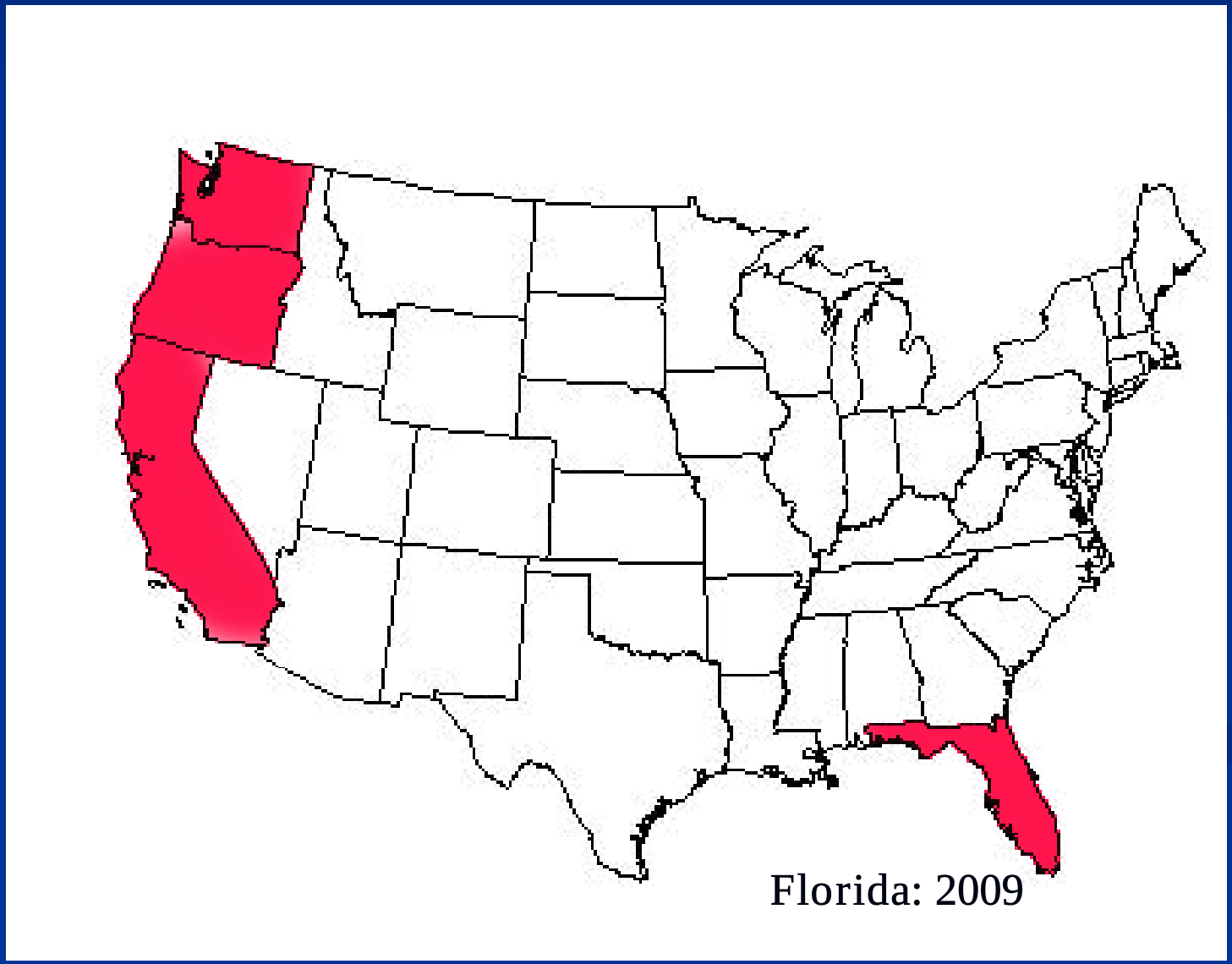
- Aug 2008 – berries: Central Coast
- May 2009 – cherries
  - all production areas
  - 27 counties throughout the state

Spotted Wing Drosophilla:
Where Is It Now?

Washington: 2009

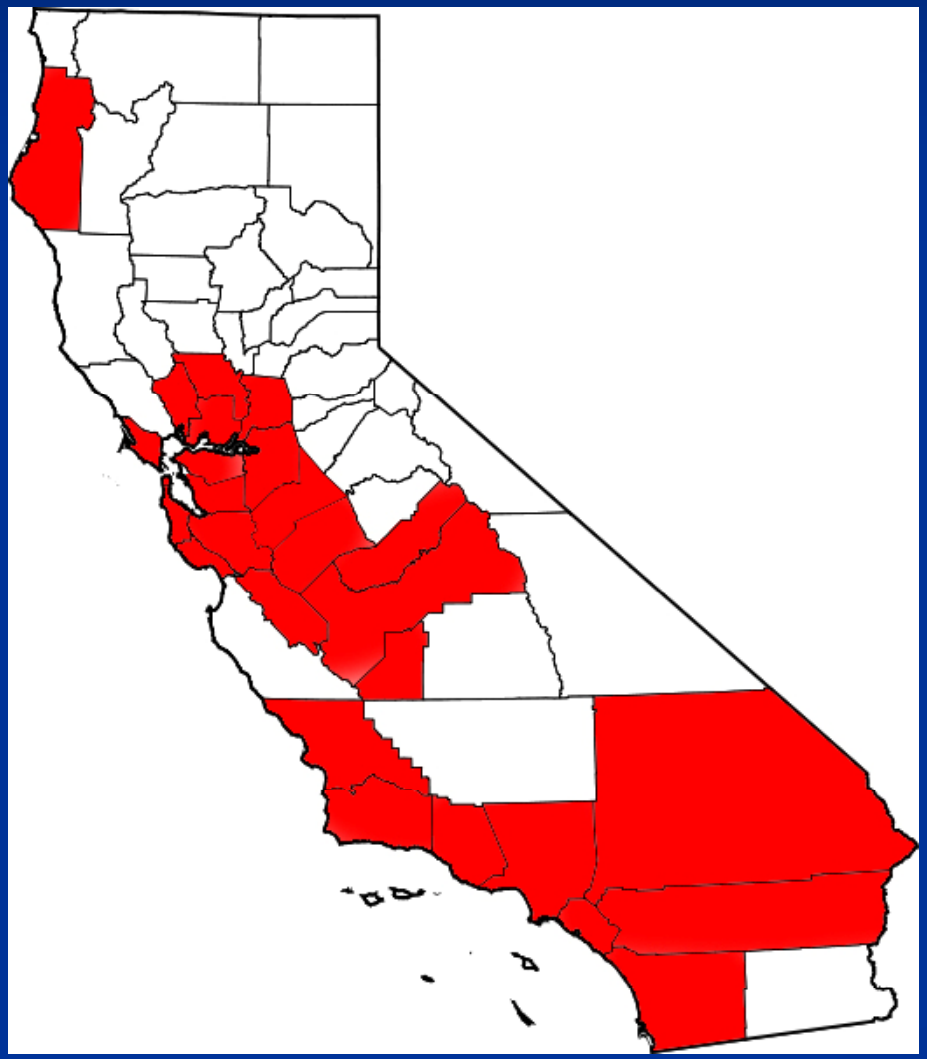
Oregon: 2009

California: 2008



Map: Martin Hauser, CDFA

Is it in the Foothills?



- Not reported yet
- Why?
  - Climate not suitable?
    - Like moderate temperatures
    - Decline over 90F, under 60F
  - Hasn’t gotten here yet?
- Keep alert this season!

Spotted Wing Drosophilla:
What Crops Can it Affect?

In California

- Cherries
- Berries
  - Raspberries
  - Black berries
  - Strawberries
  - Blueberries
- Stonefruit
  - Plums, pluots
  - Nectarines

In the Pacific Northwest

- Cherry
- Berries
- Stonefruit
  - Plums
  - Peaches
- Grapes
- Apples
- Persimmon

Spotted Wing Drosophilla:
What Can We Do About It?

1. Monitor
2. Cultural Controls
3. Insecticides

Spotted Wing Drosophilla:
What Can We Do About It?

Monitoring

- Why
  - Do you have it?
  - How bad is it?
    - High populations need a more aggressive approach
  - How long did the spray work?
- When
  - From fruit set to harvest

Spotted Wing Drosophilla:
What Can We Do About It?

Monitor

- How
  - Bucket trap or Deli trap
  - 1” apple cider vinegar
  - Checked/changed weekly
  - Hang on the shady side
  - Hang 3-5’ high
- Look for the wing spots

Other bugs get in the traps

Spotted Wing Drosophilla:
What Can We Do About It?

- Monitor fruit before harvest
  - Look at early ripening pollinators
  - Look at softer varieties

Spotted Wing Drosophilla:
What Can We Do About It?

This is too late!

Spotted Wing Drosophilla:
What Can We Do About It?

- Cultural Controls
  - Sanitation – a good start
    - Clean up dropped/ damaged/overipe fruit
    - This reduces breeding sites and reduces populations

350 eggs
2 wks

175 males
175 females

175 x 350
61,250 eggs
2 wks

30,625 males
30,525 females

30,525 x 350
10,718,750 eggs
2 wks

Spotted Wing Drosophilla:
What Can We Do About It?

- Cultural Controls
  - Sanitation
    - Field grown berries on coast only infected near berry hoop houses = high

Spotted Wing Drosophilla:
What Can We Do About It?

- Insecticides
  - Timing
    - Protect fruit just before harvest
    - 1-3 earlier spray(s) to reduce hi populations?
  - Materials
    - Lab tests for cherry materials this winter
      - OPs & Pyrethroids seem most effective
    - Tests on coastal rasberries in tunnels
      - Malathion: 14+ day control (PHI: 1 day)
      - Entrust, Pyganic : < 5 day control (PHI 7 day, 12 hrs)
      - Oil, azadirect, organicide, ecotrol: no control

Spotted Wing Drosophilla:
What Can We Do About It?

Insecticides: Bait may improve efficacy

- Speed sprayer:
  - NuLure + insecticide
- ATV sprayer:
  - GF-120 (bait + spinosad)
  - Direct stream to avoid fruit
  - Organic
  - Quick application
  - No PHI
  - Only for low populations

Spotted Wing Drosophilla: What Can We Do About It?

- Management Strategy
  - Monitoring
  - Cultural controls:
    - Sanitation
  - Insecticides based on population level
    - Higher populations:
      - full coverage sprays with bait
      - At least 2 pre-harvest sprays
  - Orchard considerations
    - Multiple varieties: consider PHI
    - Prolonged U-pick vs. quick conventional harvest
    - Organic: Gibb + Entrust + GF-120

Spotted Wing Drosophilla:
What Can We Do About It?

- Planned UC Research
  - Chemical control
    - Materials & Timing
  - Monitoring tools
    - Traps & Lures
  - Variety susceptibility
  - Life cycle & biology
  - Collaborate with researchers at OSU & WSU

Spotted Wing Drosophila

Drosophila suzukii