BLUE ALFALFA APHID MANAGEMENT STRATEGIES

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Making a Difference for California

Blue alfalfa aphid

- It is not uncommon to see some build-up of blue alfalfa aphid and pea aphid in the spring before the temperatures warm, but the outbreak of blue alfalfa aphid was more serious than normal.
- No insecticide resistance testing possible since no baseline is available

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Which of These Aphids is **Blue Alfalfa Aphid?**

Blue Alfalfa

How Would You Know?

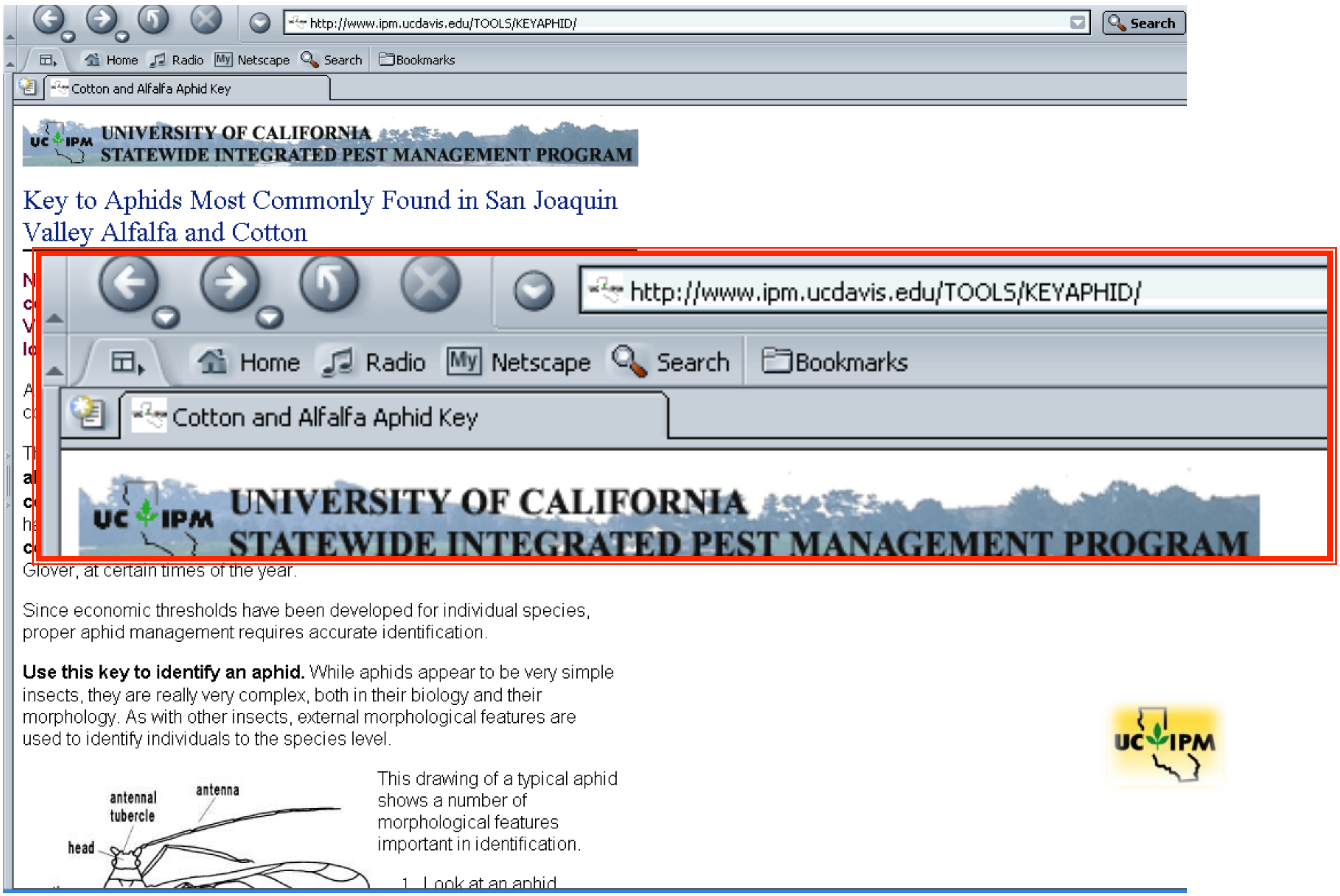
- Alfalfa Blog, UC Davis
  - http://ucanr.edu/blogs/Alfalfa/index.cfm

- IPM Identification Tips in Alfalfa PMG
  - http://www.ipm.ucdavis.edu/PMG/r1300211.html

- Field Guides:

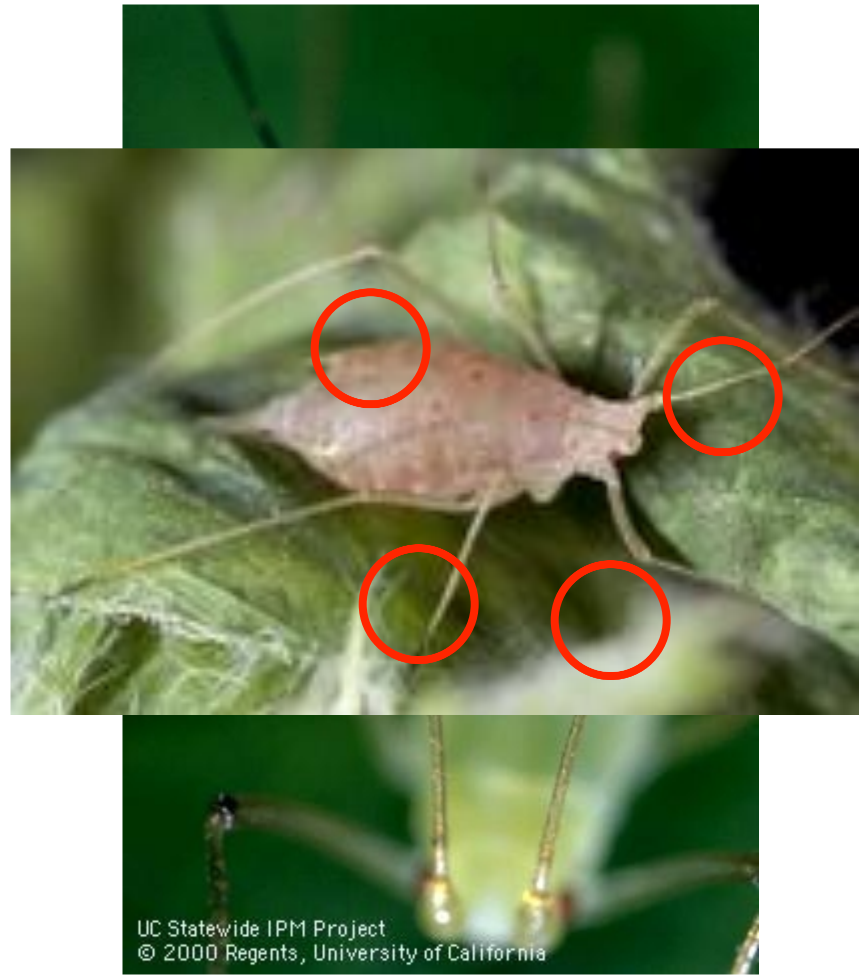
  Barlow & Godfrey Aphid Guide
  - http://ucanr.edu/sites/CottonIPM/files/166555.pdf

ID of Aphid Species in Alfalfa



Correct identification

Blue alfalfa aphid antennae - note consistent color.



Pea aphid antennae - note dark bands.

Pea Aphid – *Acyrthosiphon pisum*

- Antenna have a dark band at the tip of each segment
- Spring and Fall populations
- More widely distributed on plant
- Feeding does NOT result in stunting

Blue Alfalfa – *Acyrthosiphon kondoi*

- Antenna are uniformly dark brown in color
- Late winter or spring only
- More tolerant of cool temperatures
- Prefers terminal area of plant
- Injects feeding toxin, stunts plants, especially young plants

Action Thresholds

Plant Height	Pea Aphids	Blue Alfalfa Aphids
Under 10 inches	40 to 50 per stem	10 to 12 per stem
10 to 20 inches	70 to 80 per stem	40 to 50 per stem
Over 20 inches	100 + per stem	40 to 50 per stem

It’s a Numbers Game

- W

regrowth where the windrow lay

Damage: stunting, reduced vigor

Dos Palos,
Merced Co

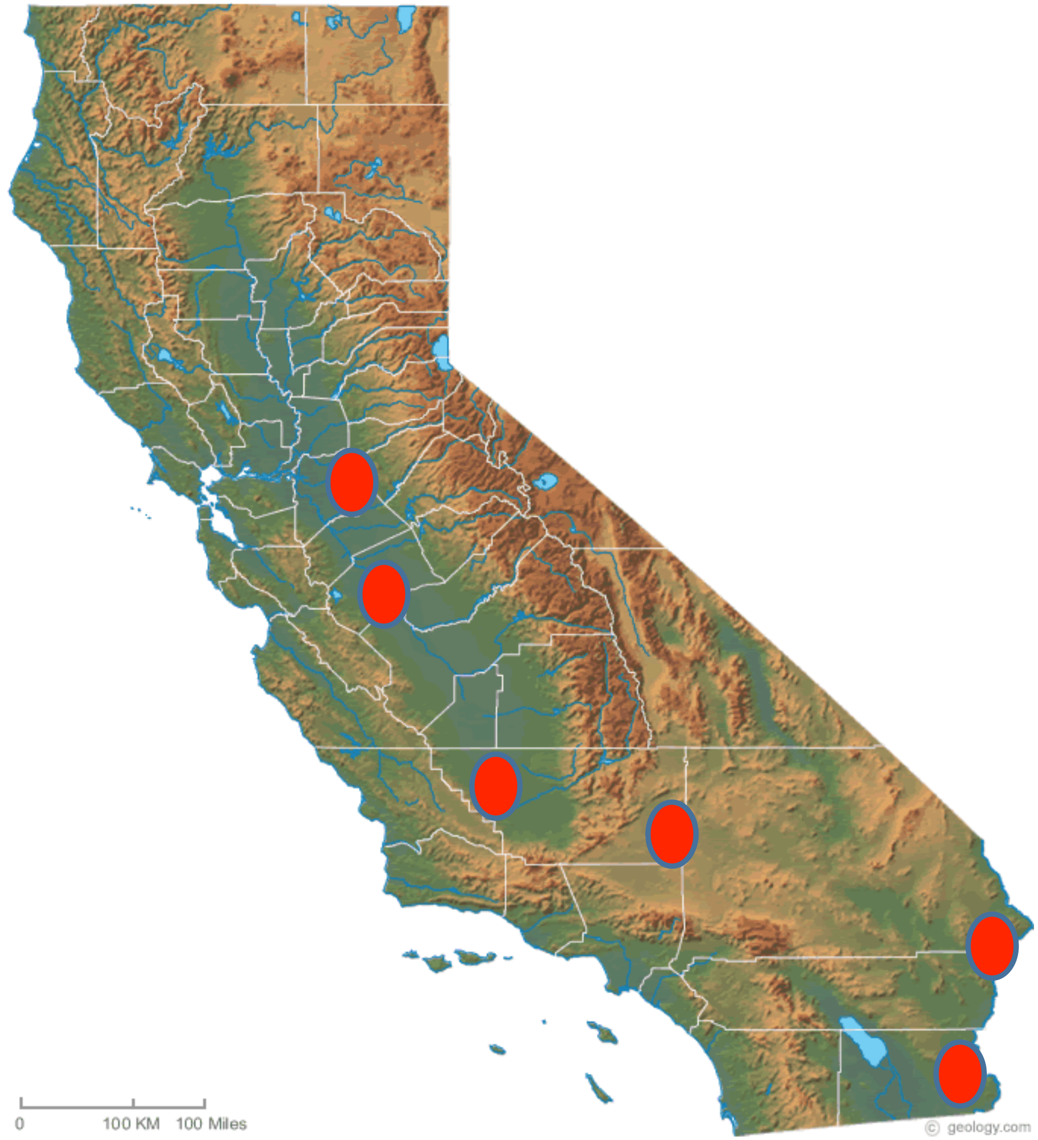
9 inches tall
30 days post 1st cutting

High Desert,
Lancaster, CA

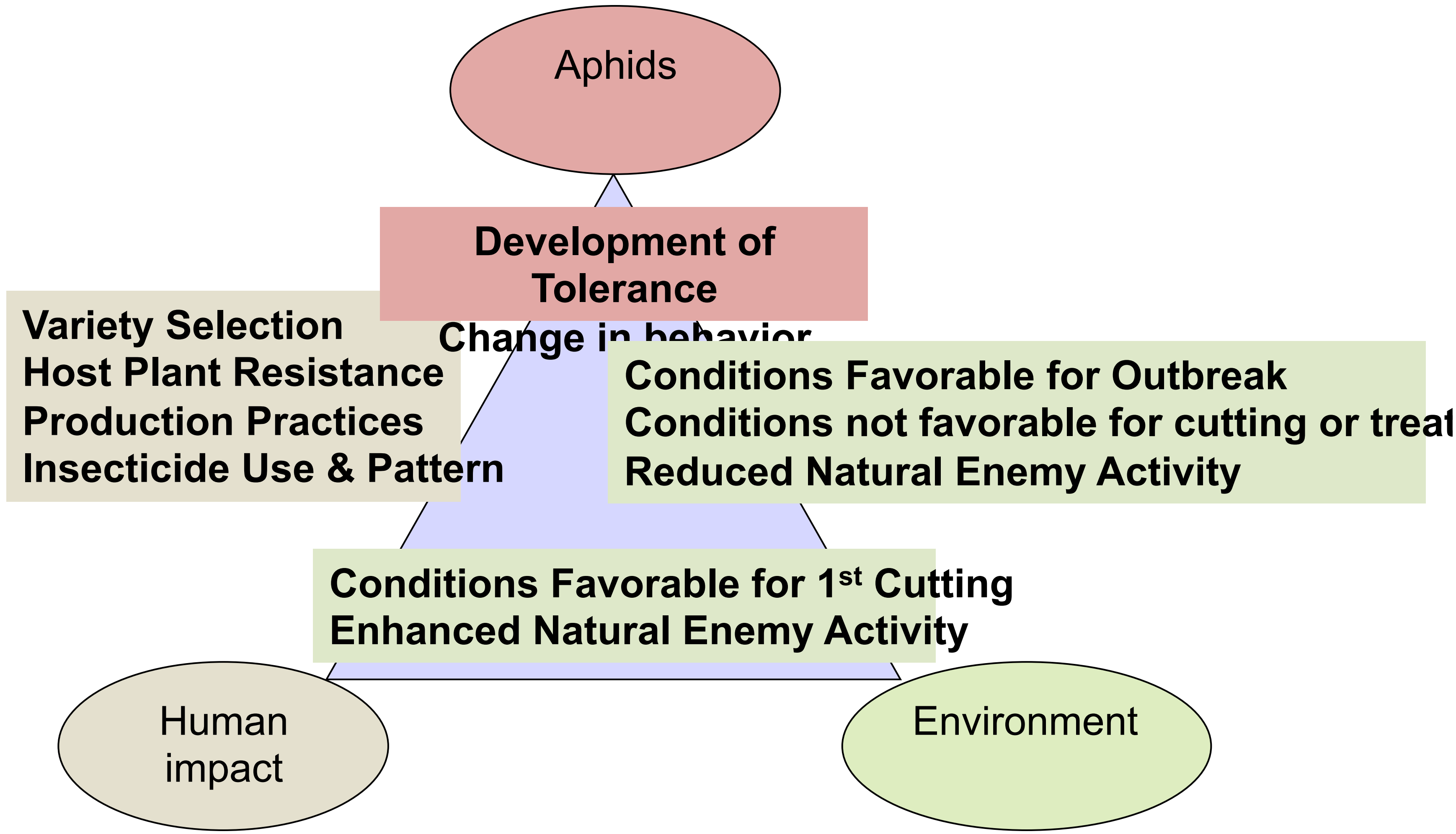
Characteristics of Outbreak

- Good weevil control, usual aphid materials
- Resurgence of BAA, 1-2 weeks post weevil
- Retreatment required
- Control difficult, residual control lacking
- **Spotty, not widespread**
- Timing of outbreak varies by location
- Some noted low abundance of ladybird beetles
- Damage substantial in some cases
- Lingering effect of toxin not known

Outbreaks Reported 2013



Outbreaks Are Complex Events

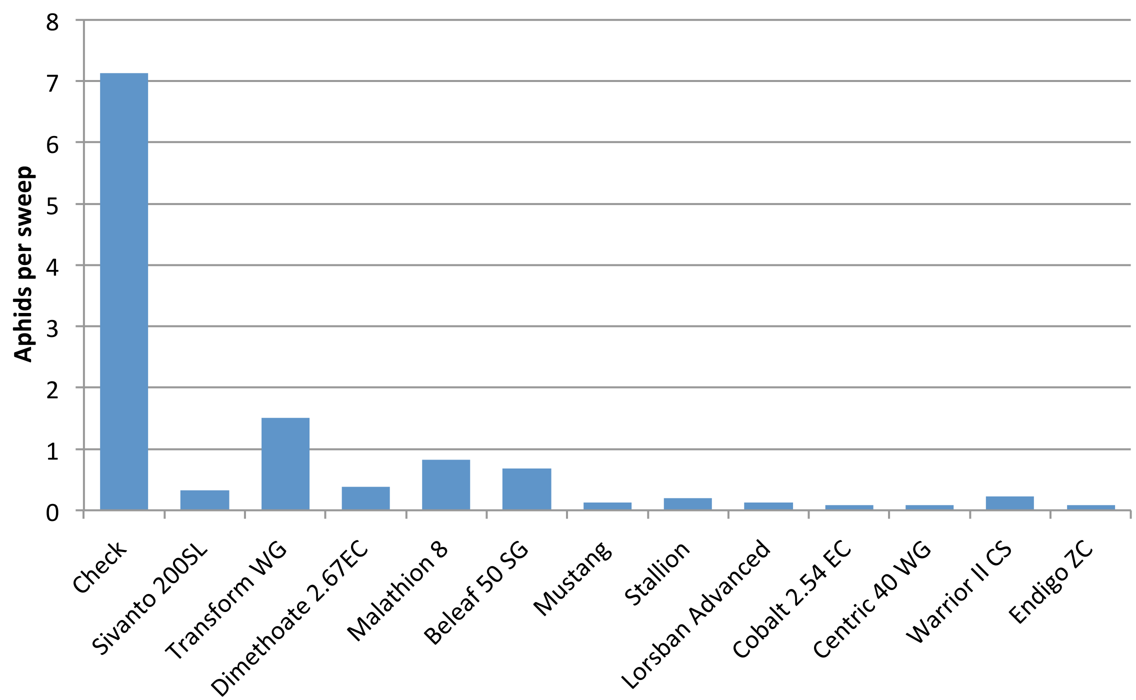


What Are People Speculating Was the Cause of Outbreak?

- Insecticide Resistance - Evidence not apparent
- New Biotype
  - "Nebraska"
  - Dr. Godfrey pursued lead but found no evidence
- Failure of Host Plant Resistance
  - Not likely in one year

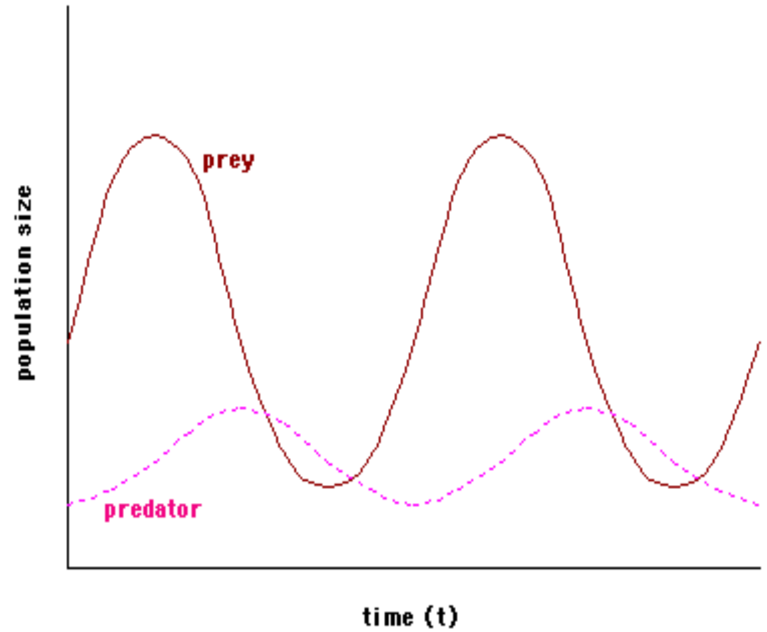
Is There Resistance?

- Dow AgroSciences conducted quick "dip assay'
  - No evidence of increased tolerance to chlorpyrifos
- Natwick conducted field trials, no evidence



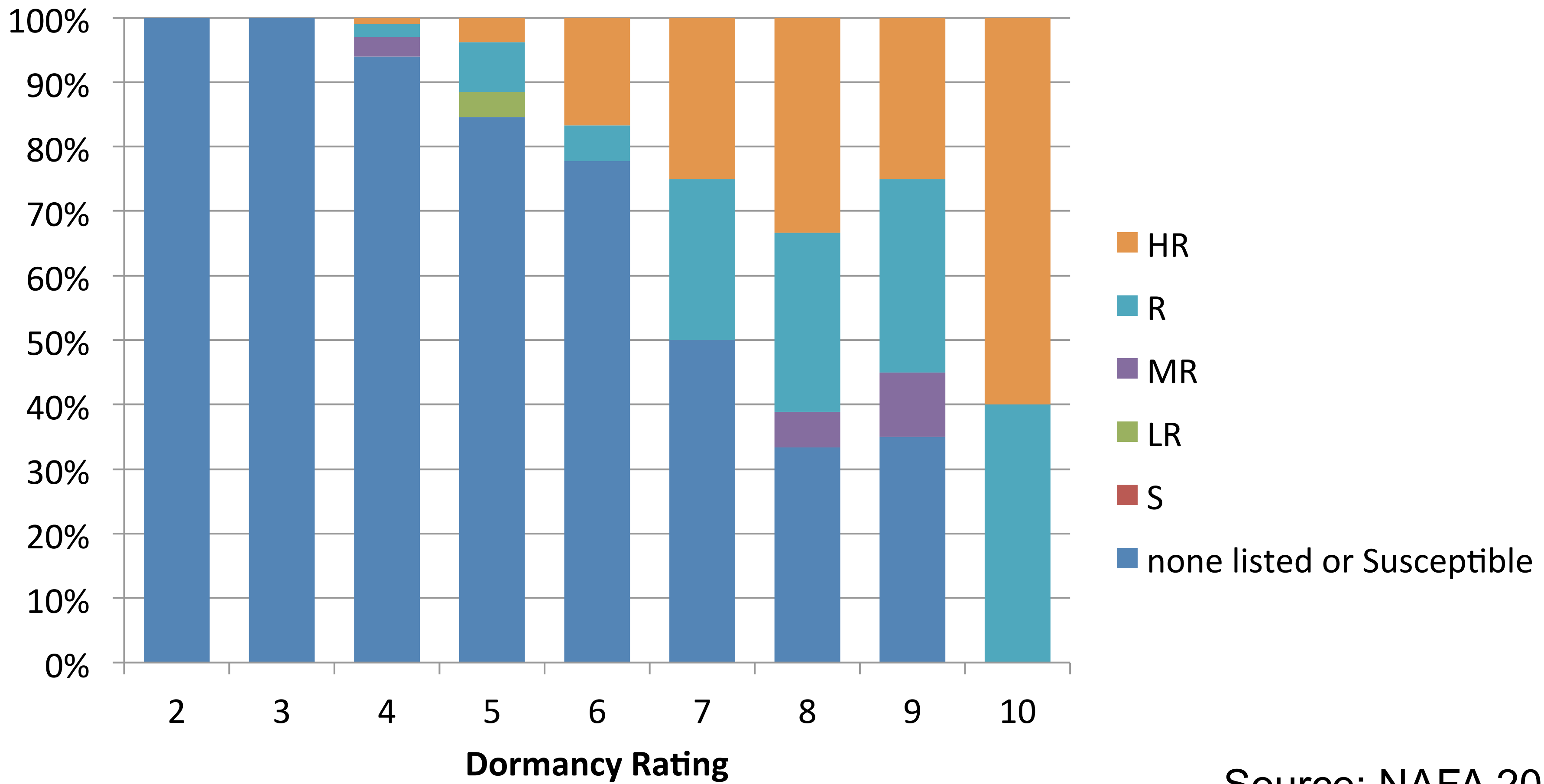
Natural Enemies

- Use of insecticides
  - Destruction of natural enemies
  - Treatment costs
  - Environmental consequences
  - Insecticide resistance



- Early harvest of the field
- Treat at economic threshold
- Early in the season natural enemy populations are at their lowest

Host Plant Resistance to Blue Alfalfa Aphid



Source: NAFA 2013

What Do We Know?

- Cause of outbreak unknown
- OPs did not sufficiently control BAA
- Low aphid densities were allowed to get into second cutting
- Distribution pattern is odd
  - First year fields, no insecticides (winged)
  - Very spotty
- Damage and loss occurred

Where We Going?

- More than 7000 Acres of insecticide applications have been going on in Kern County alfalfa fields for alfalfa aphid complex consisting of Pea aphid, **Blue alfalfa aphid** and **Cowpea aphid**

- The recently acquired section 24c special local needs approval for Beleaf 50SG insecticide has shown to be a useful tool for growers.
    - PHI for forage alfalfa is 62 days
    - Fields scheduled to be grazed have a PHI of 14 days, according to FMC reps.

Thanks for your attention