

2015 Cranberry Field Day

June 20, 2015

Bandon Barn

Bandon, Oregon

Don Kloft

Ag. Scientist/Station Manager

Ocean Spray Cranberries, Inc.

Fireworm First Generation

- Larvae generally will not feed on “old” leaves
- Begin looking for first generation larvae when buds break and “new” leaves begin to emerge

Control of First Generation

- Soft program: Long control window
 1. Altacor[®]: Better to apply Altacor[®] early then late. 21+ days of young larval control, has been shown to have ovicidal effect on eggs (Bee Safe), can follow with Intrepid for 14 days of continued larval control
- Hard program: Shorter control window
 1. If using diazinon make two applications at 1.5qts/A 7-10 days apart rather then one application at 3qts (Bee Warning). Timing?

Control of First Generation

- Excellent control of first hatch may reduce or eliminate need for further control.

Monitoring larvae activity on the bogs is critical, cannot rely on pheromone counts

Second Generation Fireworm Activity

- 30 farms participating in PCCRIF IPM program
 - 95 fire worm trap placements



Fireworm IPM Observations

Fireworm Larvae



Girdler Larvae



Photo credits: Tim Dittl

– Adult cranberry girdler moth



Photo credits: Tim Dittl

Adult Fireworm

Left, on flower. Right, museum specimen with wings spread



Photo credits: Tim Dittl

Pheromone Monitoring Traps

- One trap per 5-7 acres or for different varieties
- Prediction of peak egg hatch
- Applications of hard insecticides, which control adult moths, interferes with moth counts which effects the weekly averages
- Peak flight is determined by a significant rise and then drop in moth populations
- Target is the larvae not the moth

Monitoring Pheromone Traps

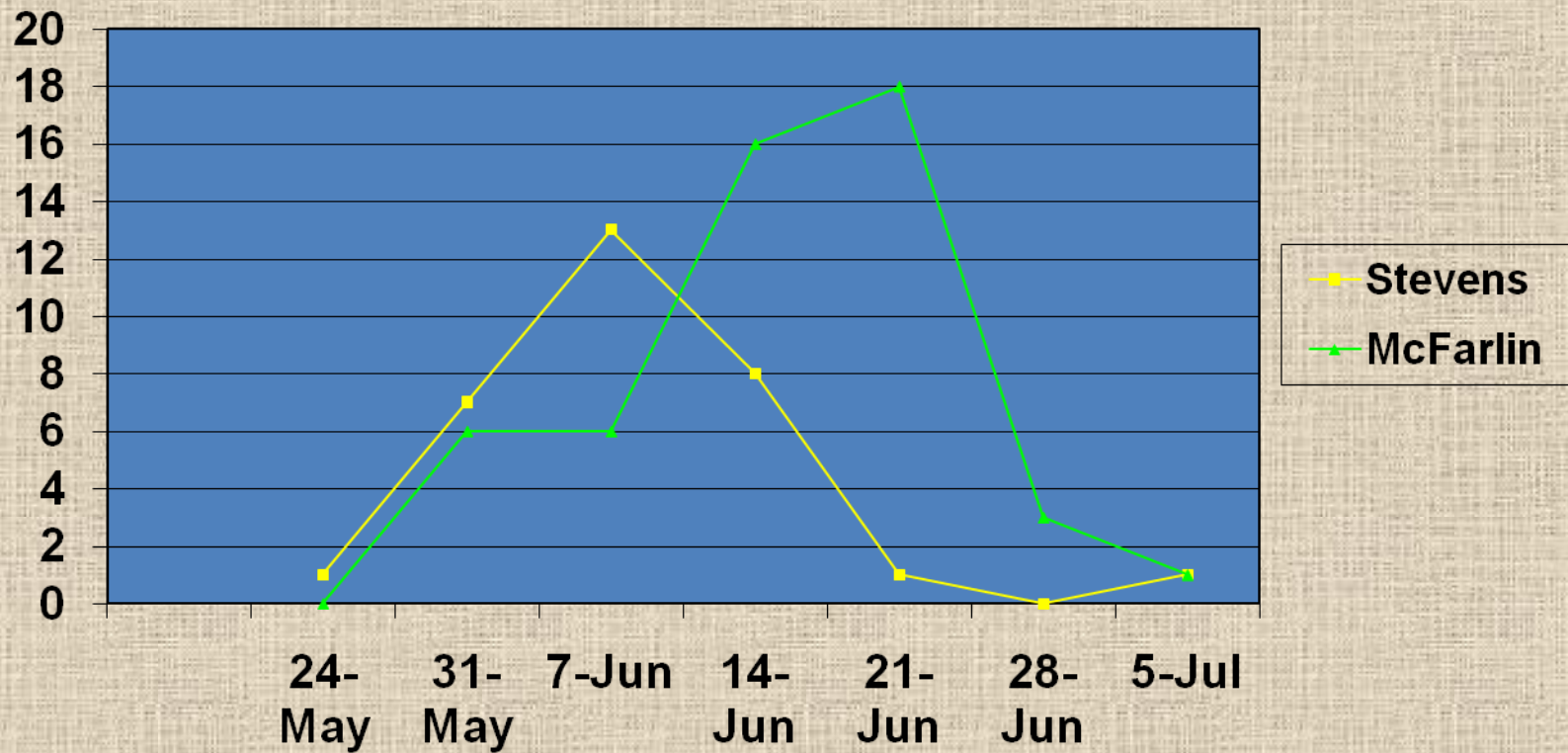
- Trap counts can be inconsistent – one or a few traps may have high counts, remainder of traps have low counts – where are moths coming from? Coming off bogs or drawn in from brush or neighbors?
- Difficult to correlate counts when using softer insecticides such as Altacor or Intrepid, these materials don't control adult moths

Pheromone Trap Placement

- Areas of known fireworm activity at bog edges and corners where sprays are inadequate
- Earliest populations tend to emerge on northern bog areas i.e. south facing slopes
- Place on upwind side of bog if possible
- Bottom of traps level with vine canopy or slightly above
- Count moths and clean traps weekly

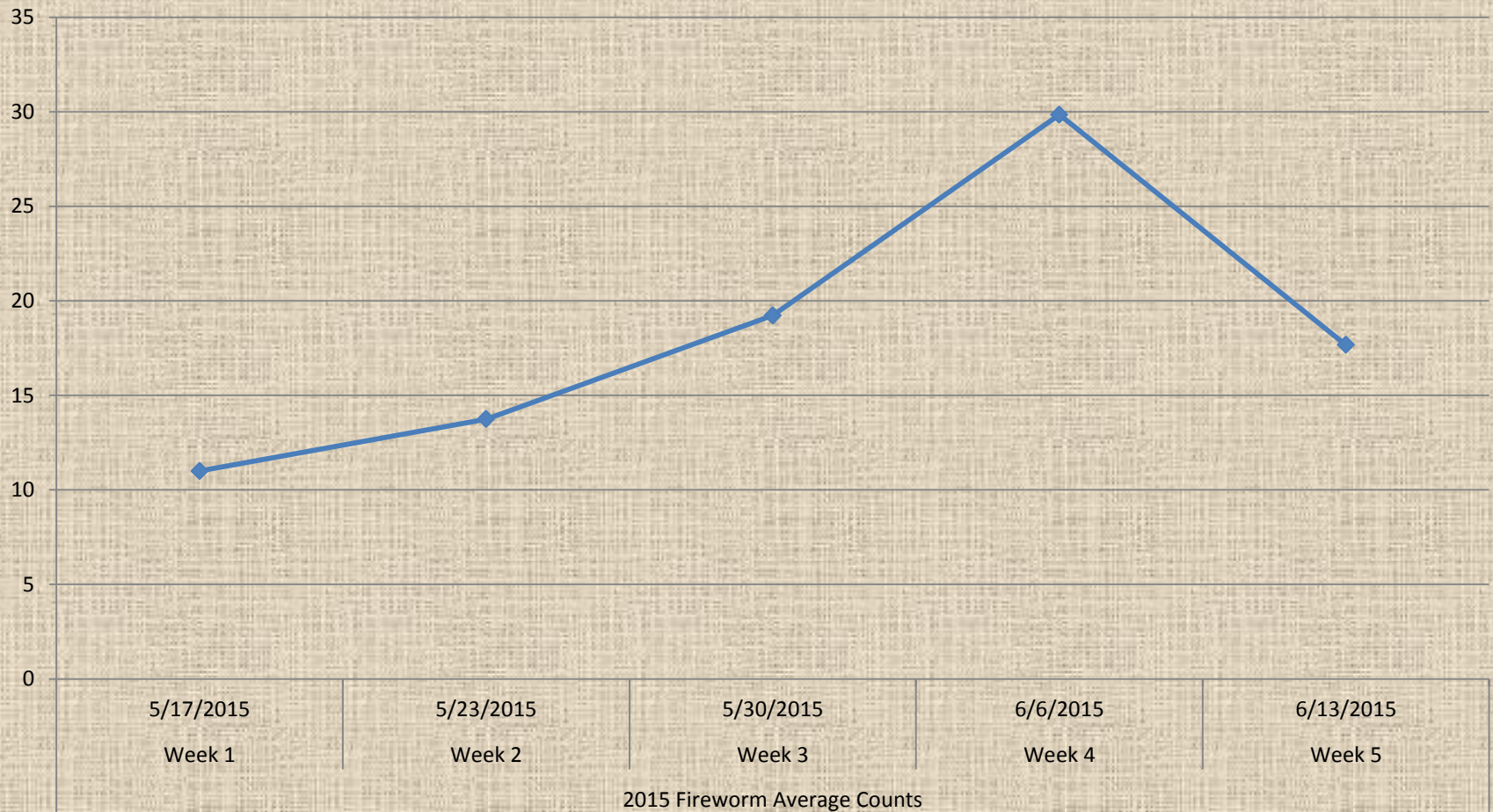
Varietal Effects

(number of WA traps by variety that peaked through time)



Fireworm IPM Observations

Moth Trap Counts



Control of Second Generation

- Soft program:
 1. Apply Altacor at peak flight; kills eggs and larvae for ~21 days
- Hard program:
 1. Apply material of choice 2-3 weeks after peak flight to maximize control of emerged larvae
 2. If using diazinon make two applications at 1.5qts/A 7-10 days apart rather than one application at 3qts (Bee Warning)

Scale Insects



Photo credit: Division of Plant Industry

Scale Insects

- Isolated infestations of scale recently reported
- Positively identified two species and suspect a third
- Why seeing infestations? Use of selective “softer” insecticides?
- Weather conditions?

Scale presence late winter/early spring (March 27)



Photo credit: Cassie Bouska

Blotchy dark areas on the bog in late winter/early spring



Photo credit: Cassie Bouska

Presence of scale: slows/delays/stunts vine growth early spring

- Blackened vines and leaves from sooty mold
- Black/sooty mold (smut) develops on honeydew expressed by scale insects



Photo credit: Cassie Bouska

**A spot of stunted/delayed
vine growth in early June**



Photo credit: Cassie Bouska

Brown Soft Scale?



Photo credit: Cassie Bouska

June 2

- Brown Soft Scale?
- Brown soft scales have multiple overlapping generations per year



Photo credit: Cassie Bouska

June 2nd

Cottony scale

- A soft scale
- Lay eggs in cottony masses
- Present on stems or leaves
- One generation per year
- Parasitoid wasps present in some of the scale samples we sent up – some biological control is in effect



Photo credit: Cassie Bouska

Cottony scale

Order: Hemiptera

Family: Coccidae

Pulvinaria sp.



Photo credit: Cassie Bouska

Armored scale

Order: Hemiptera

Family: Diaspididae

Possibly: greedy scale
(*Hemiberlesia rapax*),



Photo credit: Cassie Bouska

- Spot application of M-Pede insecticidal soap ... applied mid- to late-May
- Phytotoxicity?



Photo credit: Cassie Bouska

- Spot application of M-Pede insecticidal soap ... applied mid- to late-May
- Phototoxicity?



Photo credit: Cassie Bouska

- Evaluating spot application of M-Pede insecticidal soap ... applied mid- to late-May
- Phototoxicity?



Photo credit: Cassie Bouska

- Spot application of M-Pede insecticidal soap ... applied mid- to late-May

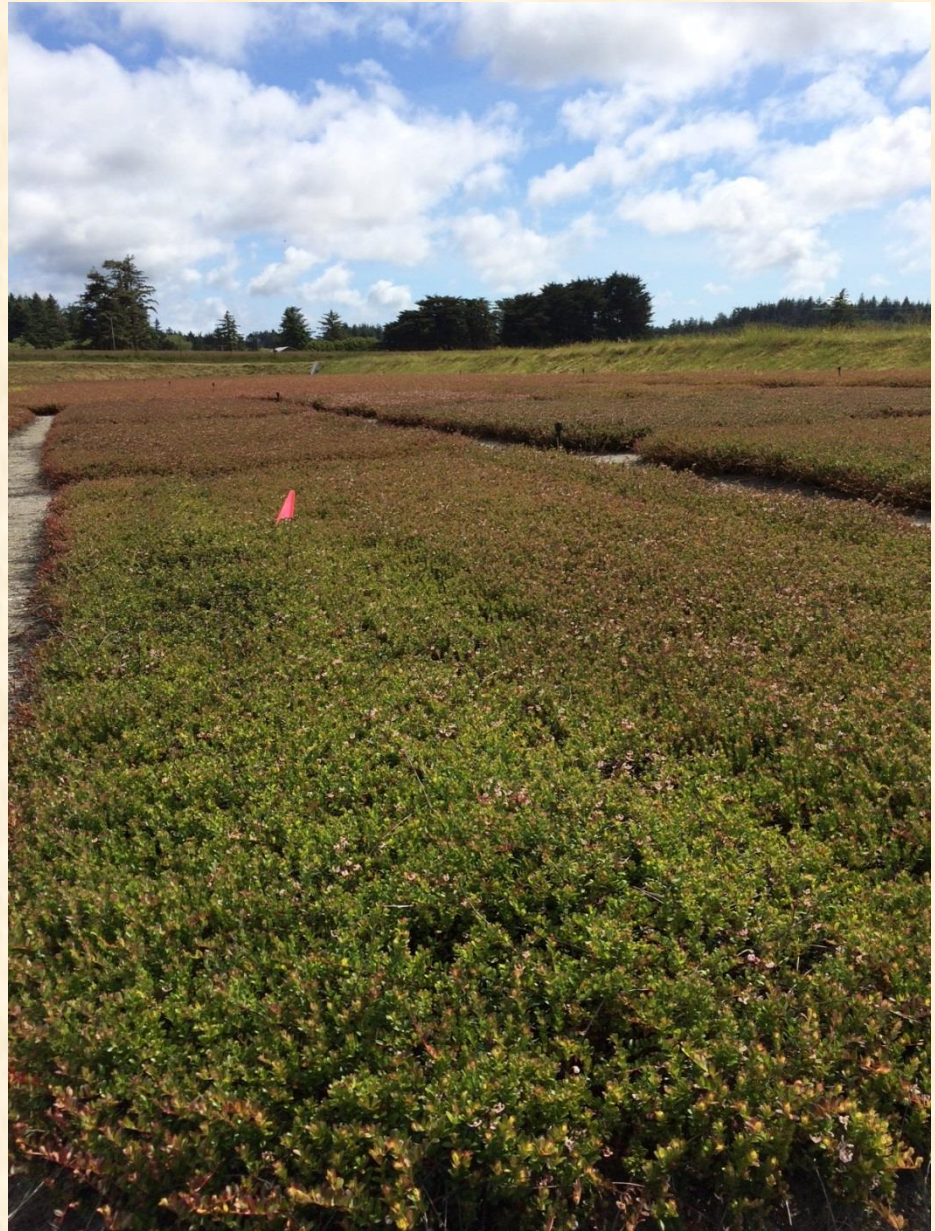


Photo credit: Cassie Bouska

Control of Scale Insects

- Good control with M-Pede alone in early summer, phytotoxicity concerns
- Good control with tank mix of M-Pede and diazinon late winter/early spring, no phytotoxicity
- Good control with Lorsban late winter/early spring, no phytotoxicity
- Admire Pro? A neonicotinoid: controls sucking chewing insects (scale, aphids, mites, thrips), application prior to flowering: Bee Safety?

Control of Scale Insects

- Allow sufficient time, post application, to evaluate efficacy of treatment
- May take several weeks for dead insects to desiccate, don't condemn treatment too quickly

Questions?

