

2011

Insect Management Research and Recommendations

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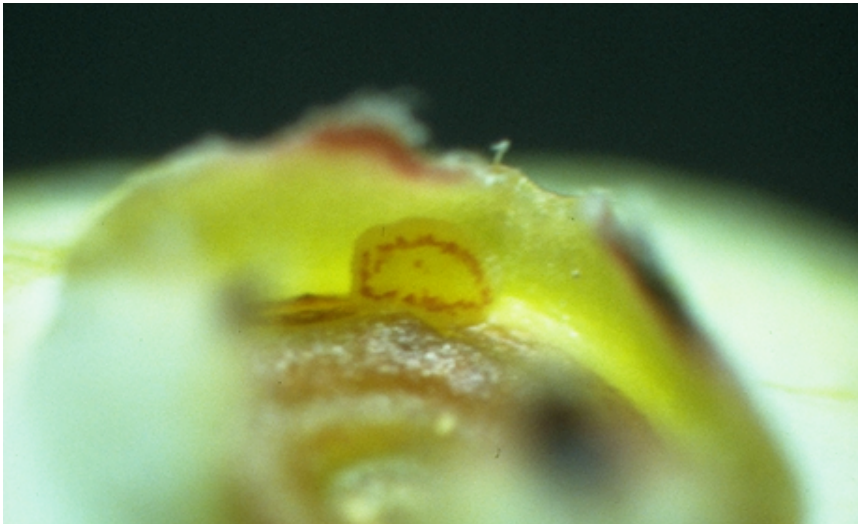
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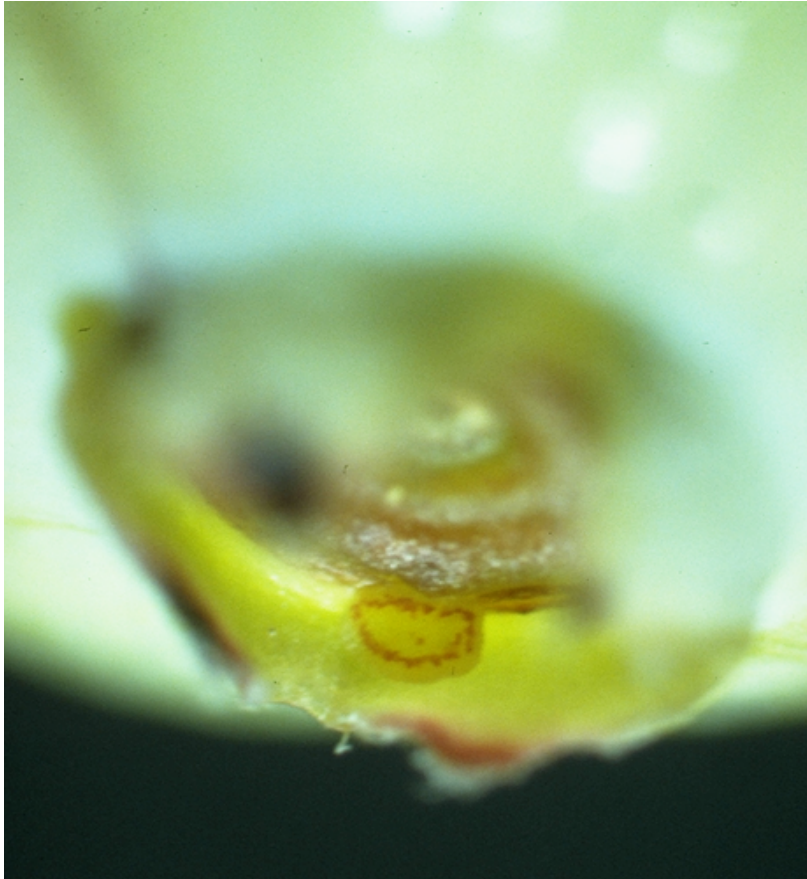
Entomology Outline

- Cranberry fruitworm management: recommendations for early varieties
- Cranberry weevil management
- Tipworm research
- Pollination in cranberry



Cranberry
fruitworm:
management on
early varieties





IPM recommendations

- Now:
 - Observe 50% out of bloom
 - Spray 7-10 days later for Howes and EB
 - Spray sooner for Stevens and BL
- Under consideration:
 - Observe 50% out of bloom
 - Spray 7-10 days later for Howes
 - Spray 0-5 days later for early varieties, but only with Delegate or new CFWkiller to be registered in 2011

2010 CFW Field Study

- 20 sites
- Many had paired Stevens and EB beds
- % out-of-bloom was monitored for each bed
- 50% OOB was determined



2010 CFW Field study

- Egg infestation determined
 - Took berry samples every few days and examined for eggs



2010 CFW Field study

- Damage checked in late July berry samples



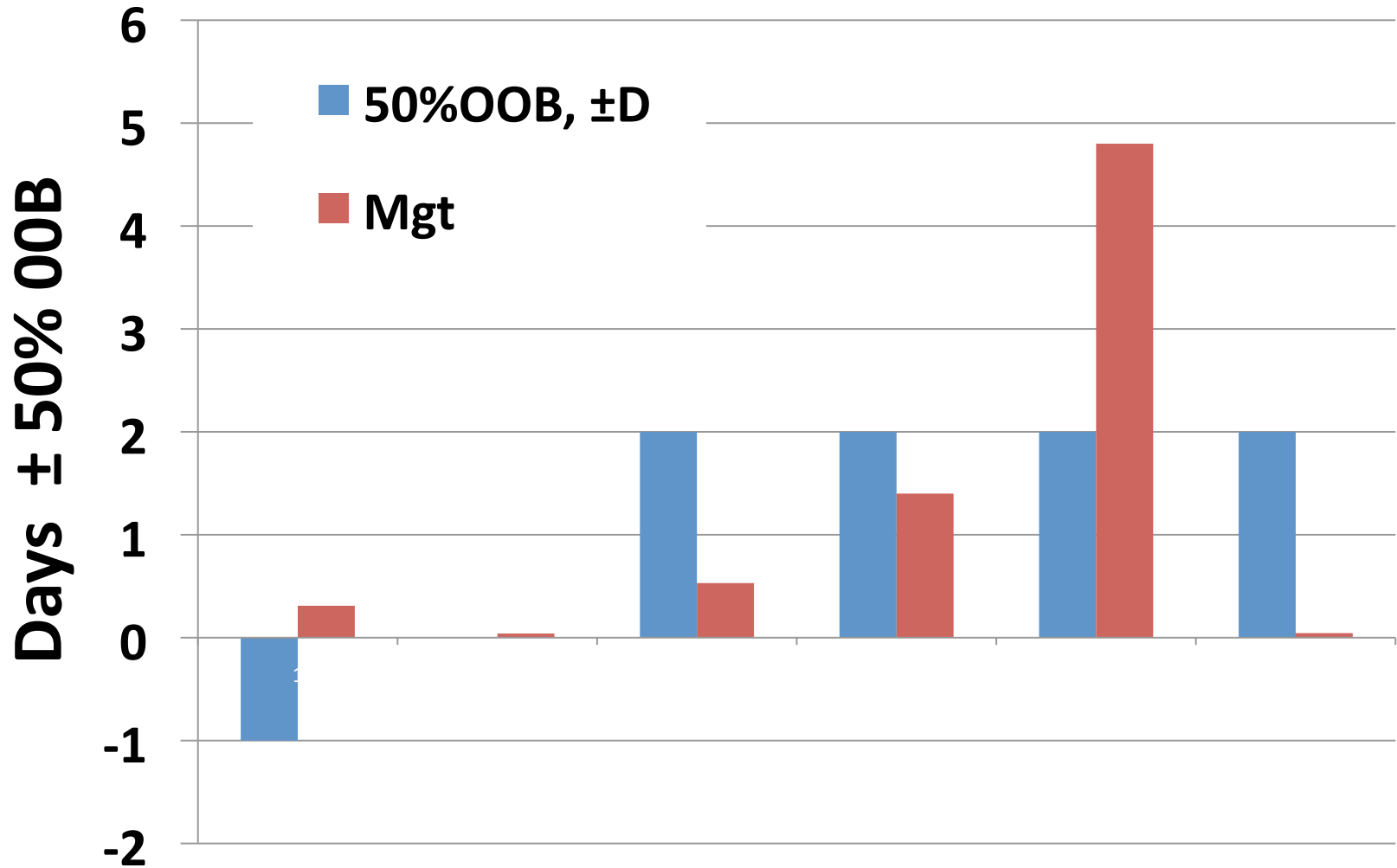
2010 CFW Field study

- Collected spray records
 - Compounds used for 1st fruitworm (number of sites)
 - Intrepid (2)
 - Diazinon (8)
 - Lorsban (1)
 - Delegate (8)

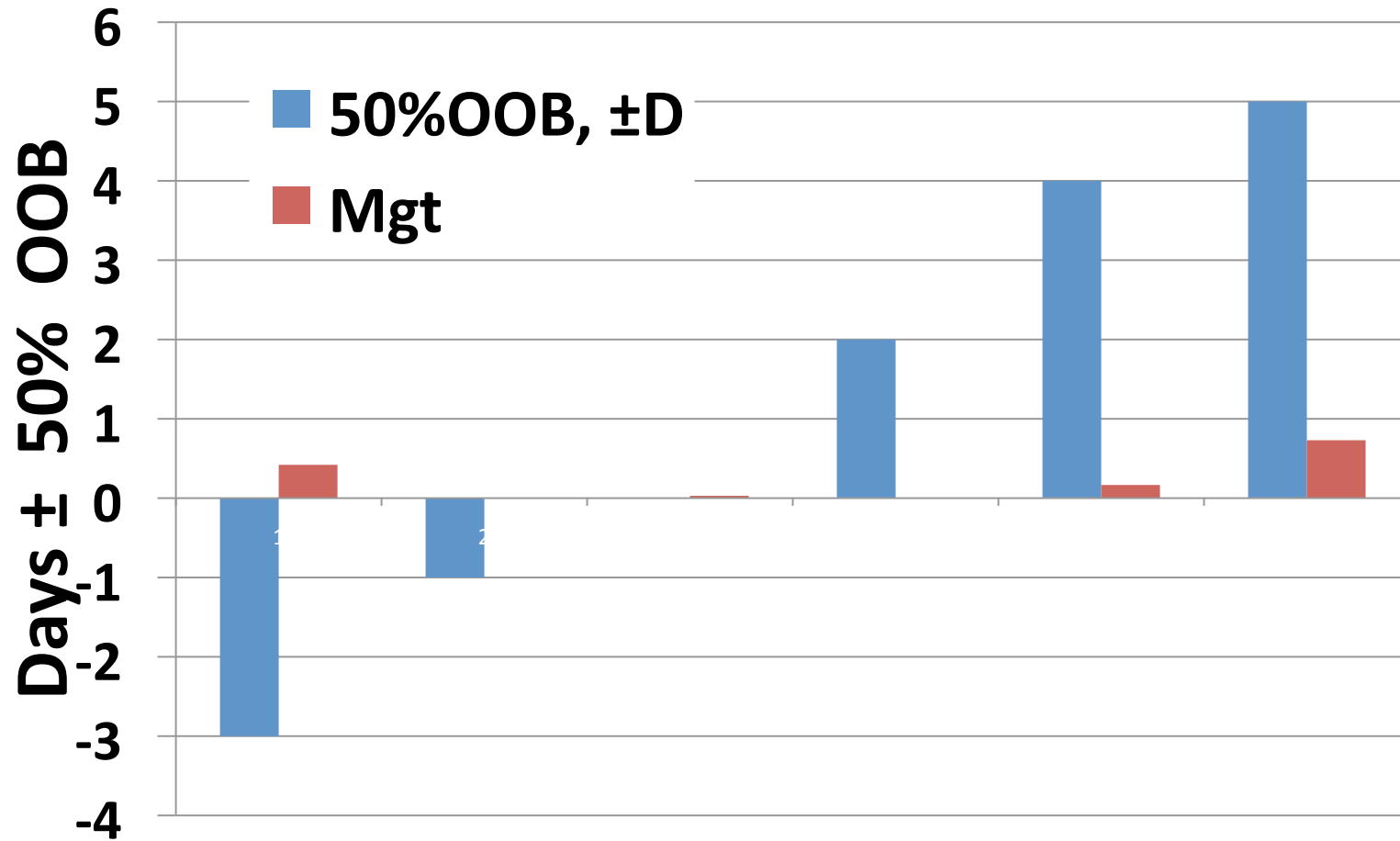
2010 CFW Field study

- Spray date: How many days before or after 50% OOB = blue bars
- Divided fruit infestation by original egg infestation = red bars

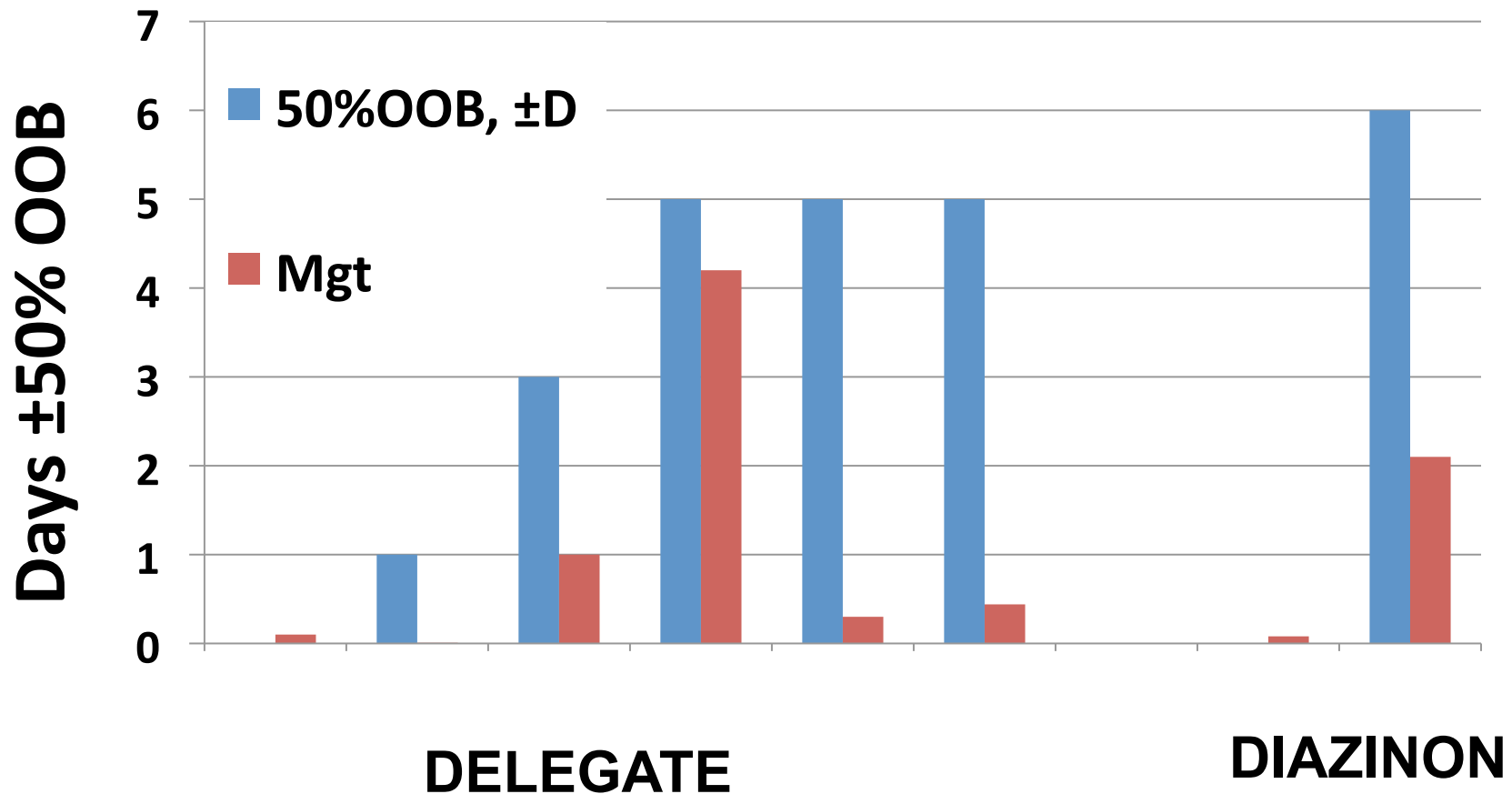
ST: Delegate sites, days b/a 50% OOB and fruit infestation



EB: Diazinon sites, days b/a 50% OOB and fruit infestation



EB: All sites, days b/a 50% OOB and fruit infestation



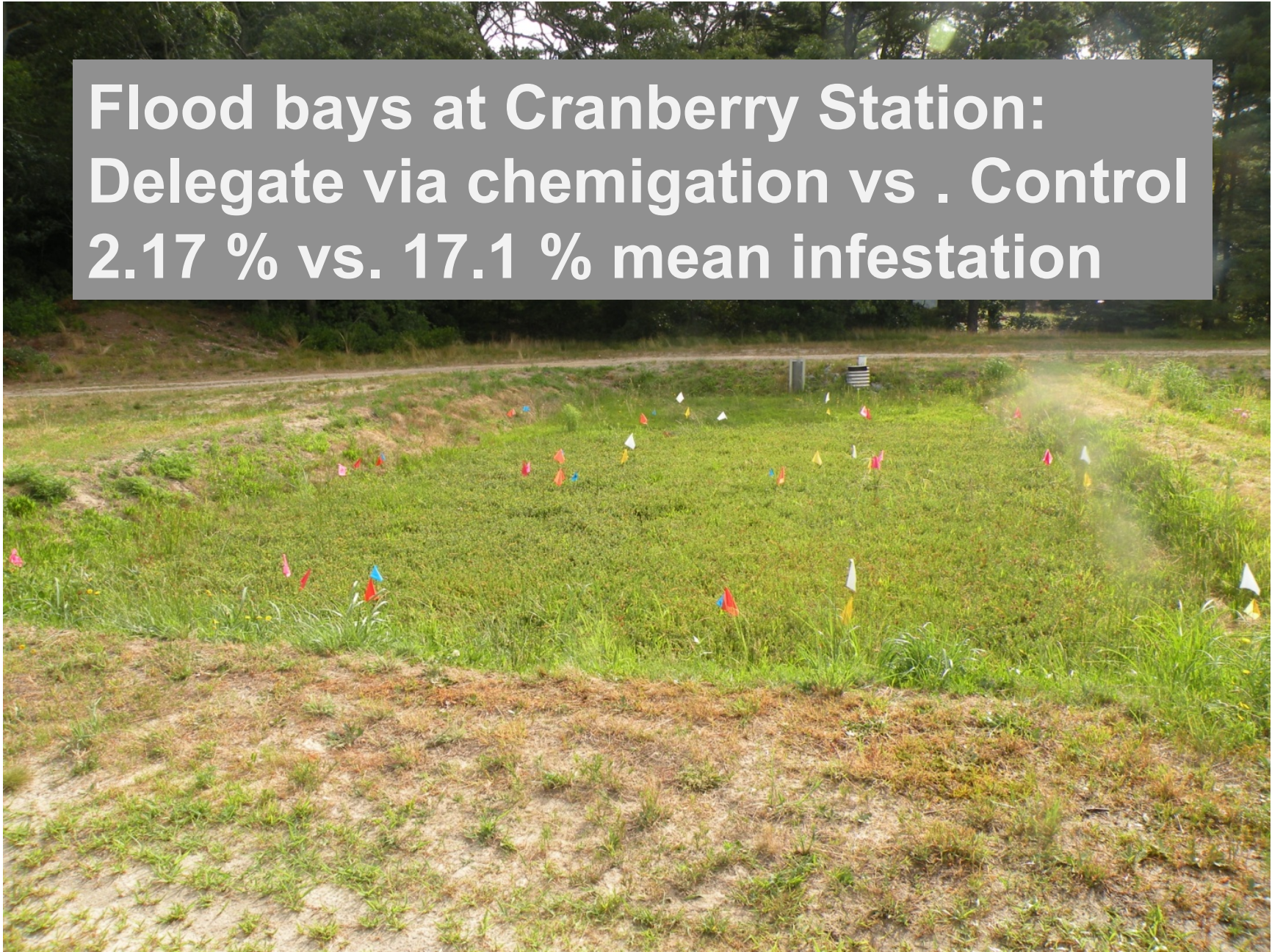
2010 CFW Field study

Variety	Mean % egg infestation	Mean % fruit infestation	Number of sites with no egg infestation
Stevens	2.91	2.88	5
Early Blacks	0.70	0.68	8

Conclusions

- Field data continue to support change in recommendation
- Spray around 50% OOB for early varieties
- Delay for Howes
- Delegate is a viable alternative for CFW management

**Flood bays at Cranberry Station:
Delegate via chemigation vs . Control
2.17 % vs. 17.1 % mean infestation**



Cranberry weevil management II



Exploiting aggregation behavior in insects



Aggregation is often mediated by chemical cues=pheromones



Pheromone trap calling together many individuals of an insect species.

Anthonomus weevil group



Pepper weevil



Cotton boll weevil

Aggregation pheromones used to bait traps in IPM programs



Novel strategies for cranberry weevil management



Cesar Rodriguez-Saona
Rutgers



Zsafia Szendrei
MSU



Agenor Mafra-Neto.
ISCA, Inc

Isolationg the aggregation pheromone in cranberry weevil



Grandlure II

12.740

Grandlure III

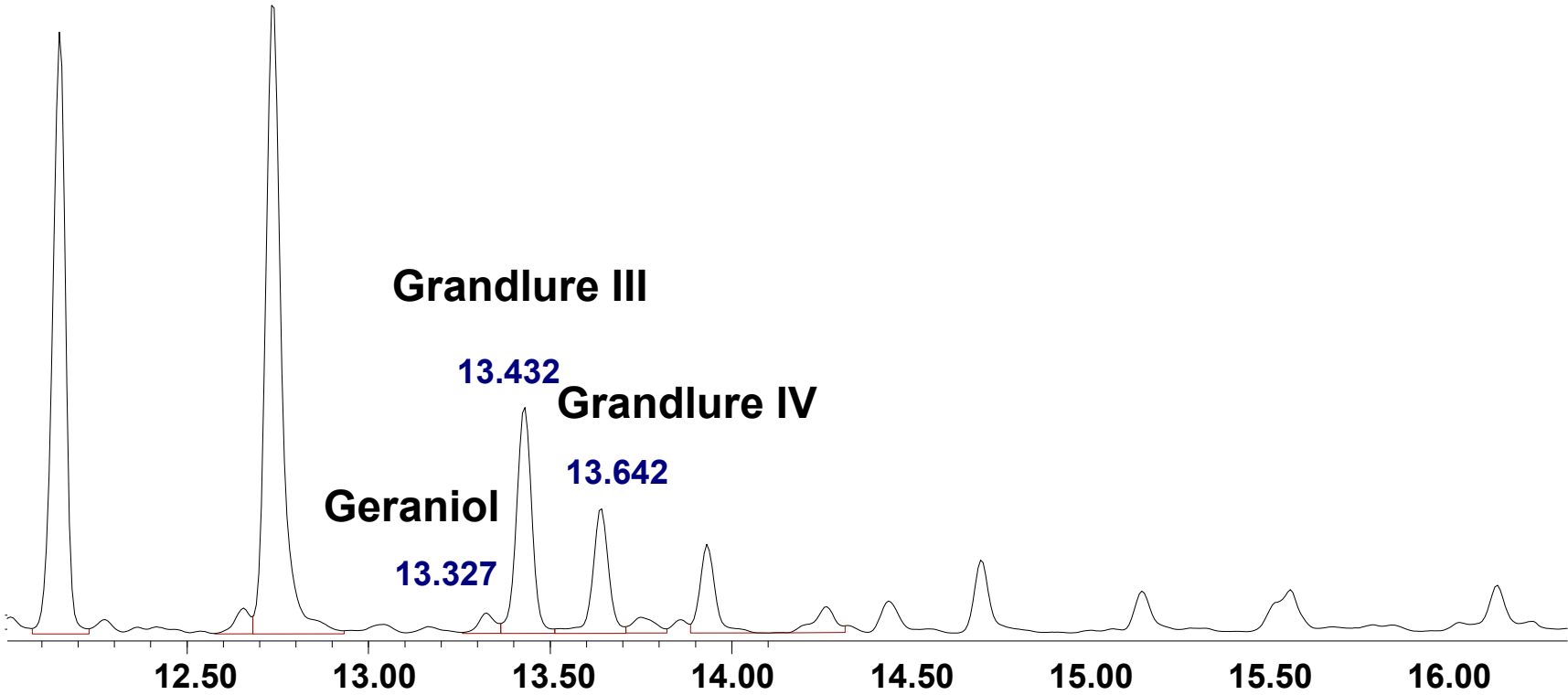
13.432

Grandlure IV

13.642

Geraniol

13.327



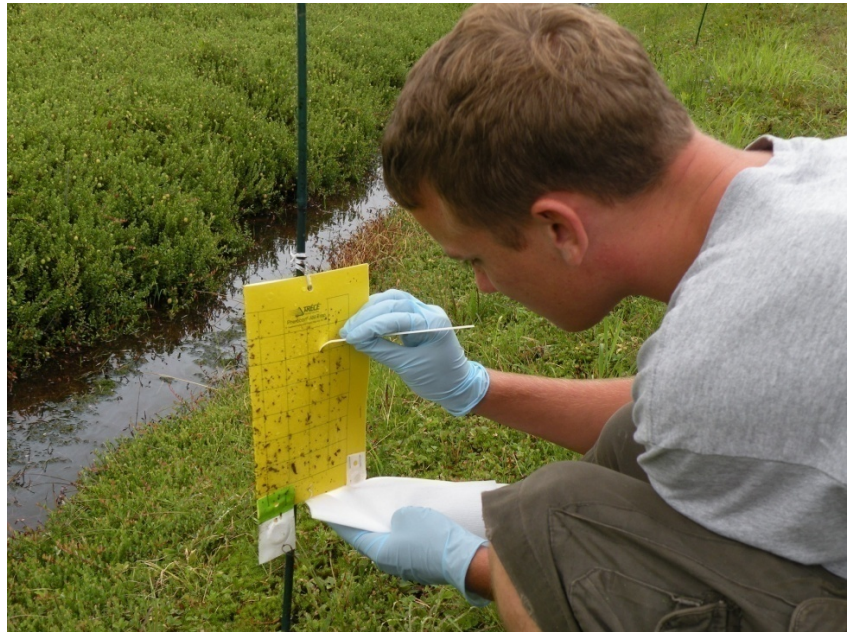
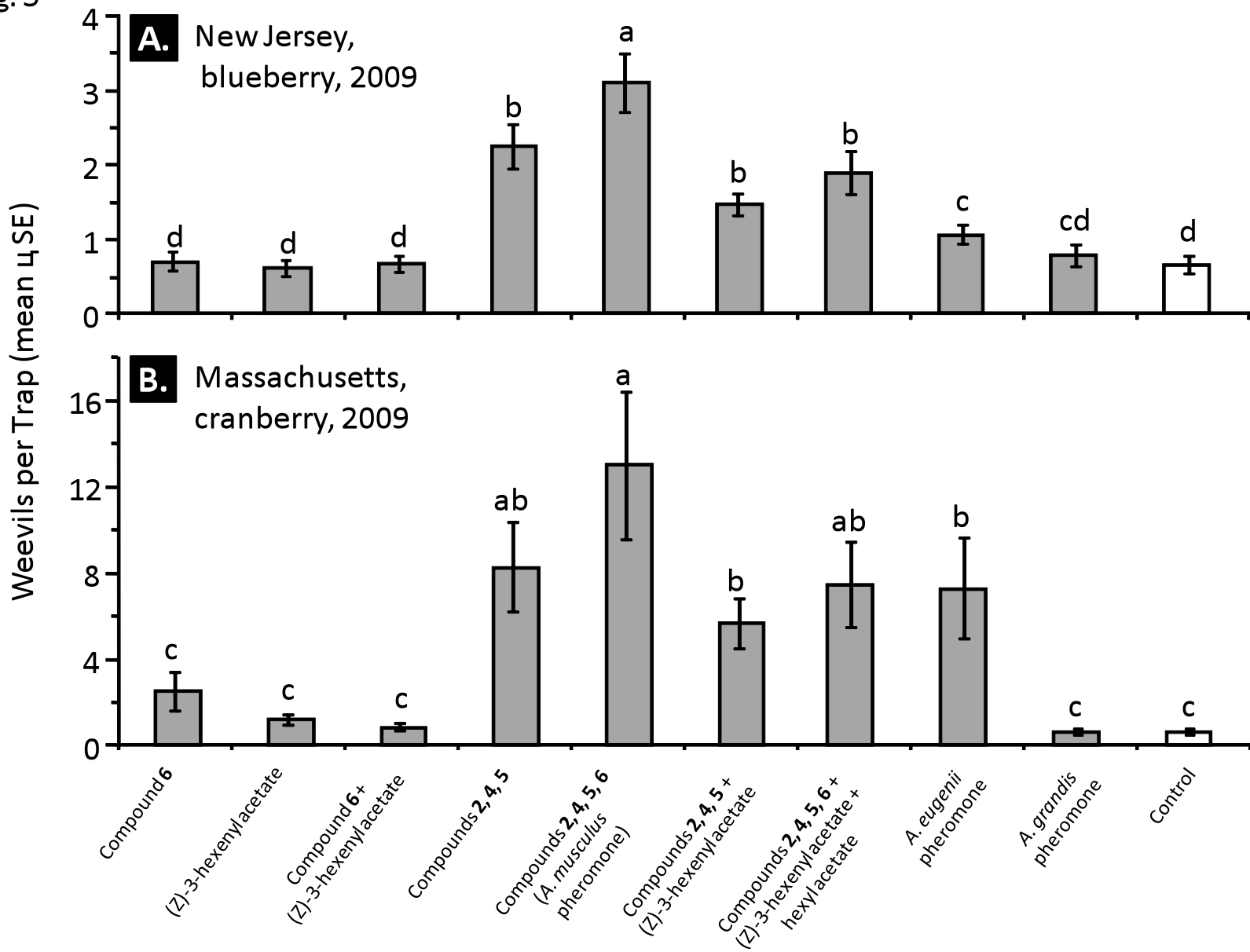


Fig. 5



Applications: baited traps are more effective



ISCA technique

- **SPLAT™ (Specialized Pheromone & Lure Application Technology) :**
Biologically inert matrix for the release of semiochemicals and/or pesticides
- Applied in blobs with dosing gun

Lure and kill strategy: Integrate aggregation pheromone with insecticide in matrix



Cranberry weevil adults overwinter in the woods surrounding bogs

- Dollops would be applied only in field edges, where spring weevils are active
- Lower summer generation



Advantages

- Reduce insecticide inputs
 - discrete attractive point source (instead of cover spray)
- Males and females killed