



Codling Moth Control with Selective Insecticides + Sugar and Yeast

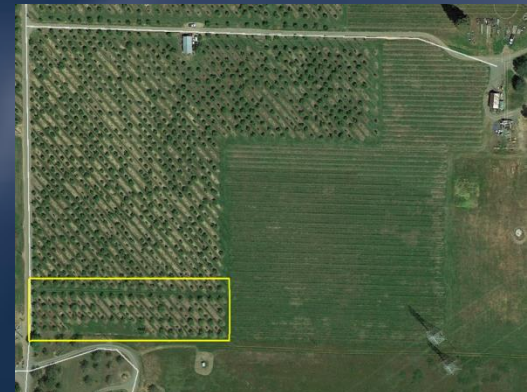


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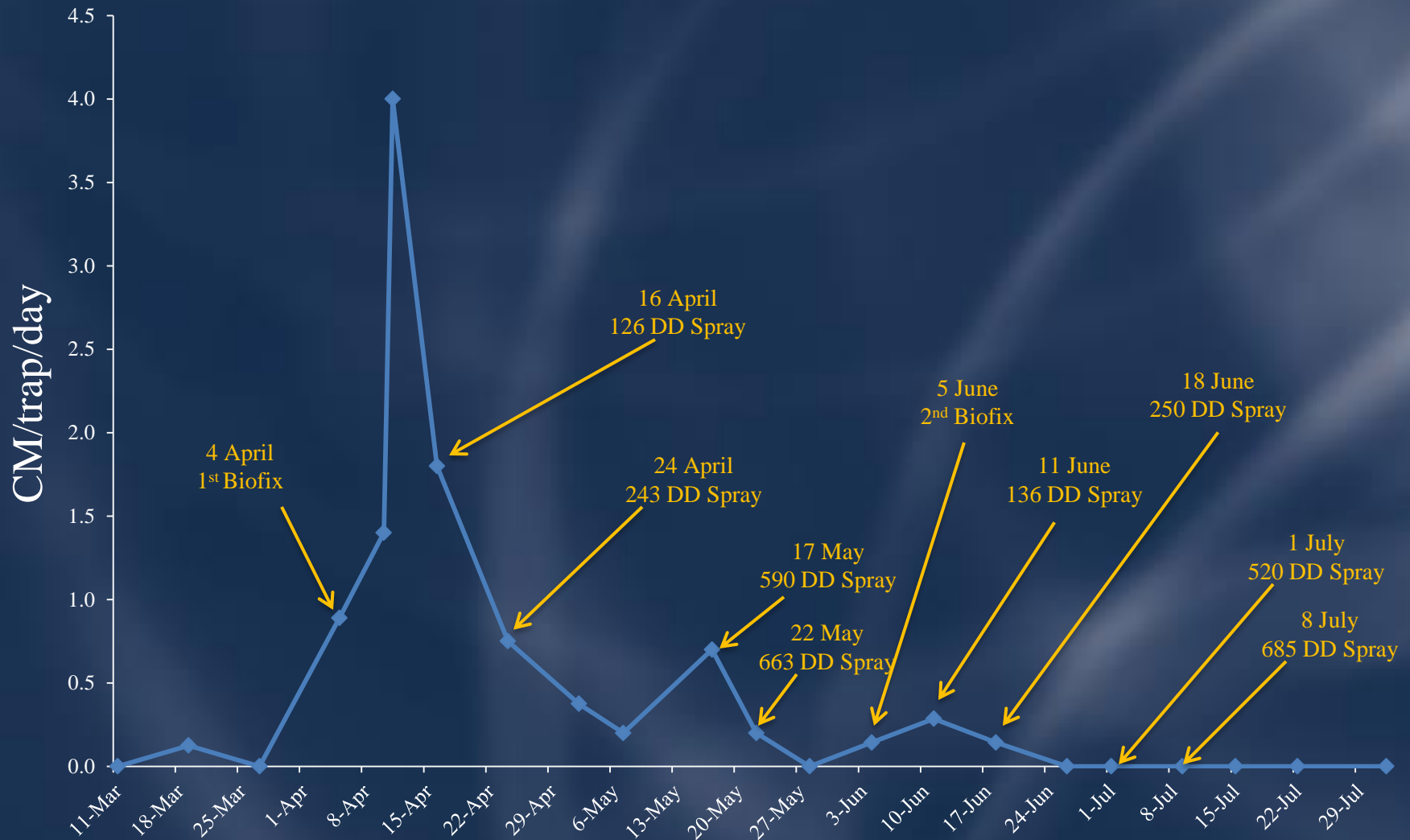
Experimental Design – Calif. Field Exp.

- Commercial Bartlett pear orchard in Fairfield, CA
 - 25' x 25' spacing
- Six treatments with and without sugar/yeast
 - Replicated four times in a RCB
 - Materials applied at 75% max label
 - Cane sugar at 1 lb and Red Star bread yeast at 3 lb/100 gal (SY)
- Treatments: Entrust, Assail, Altacor, Delegate, Intrepid and check





Degree Days and CM captured per trap/day





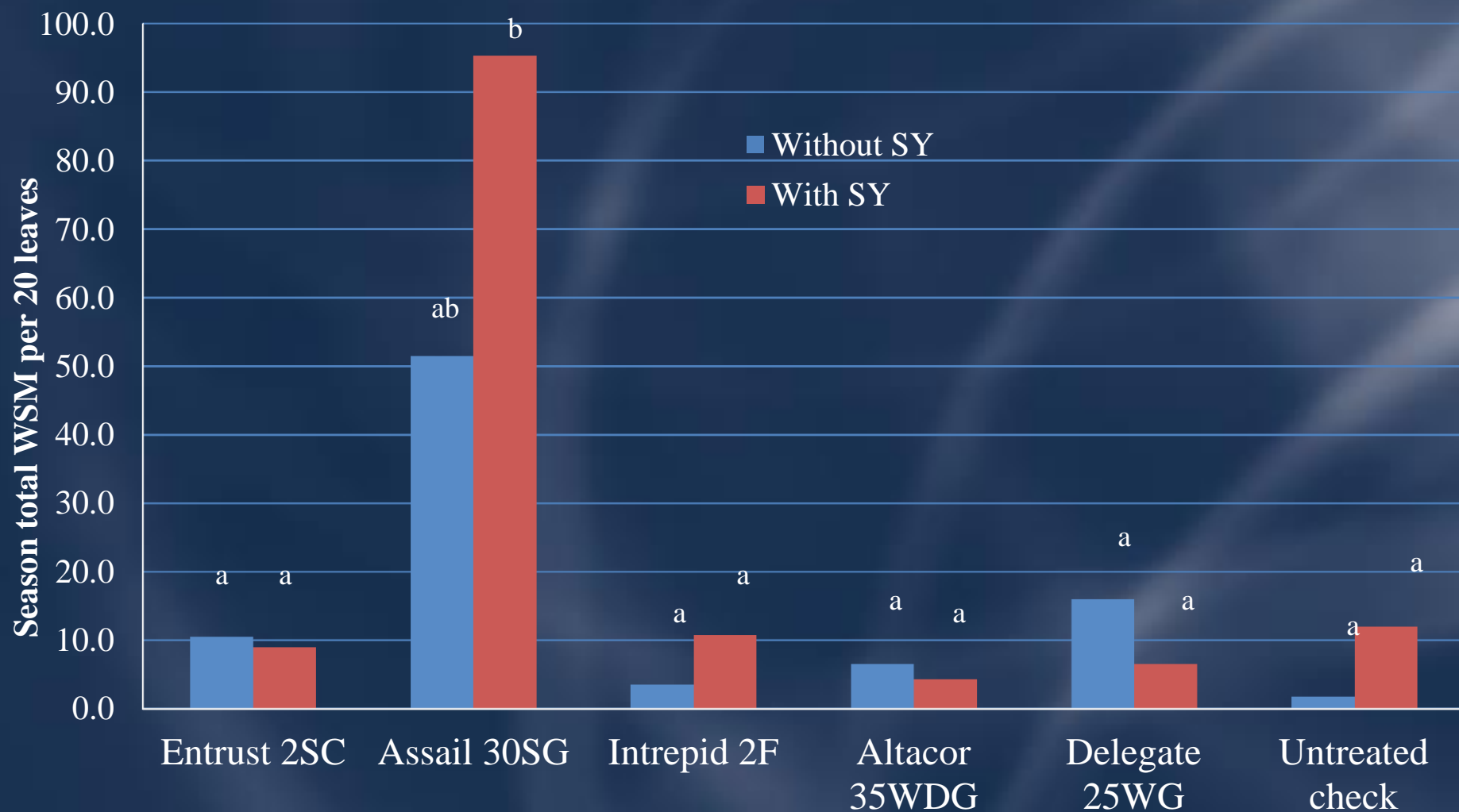
Evaluation

- 20 leaves sampled weekly from interior and exterior of foliage of each replicate
- 250 fruit per replicate were inspected at harvest for damage





Web Spinning Mites



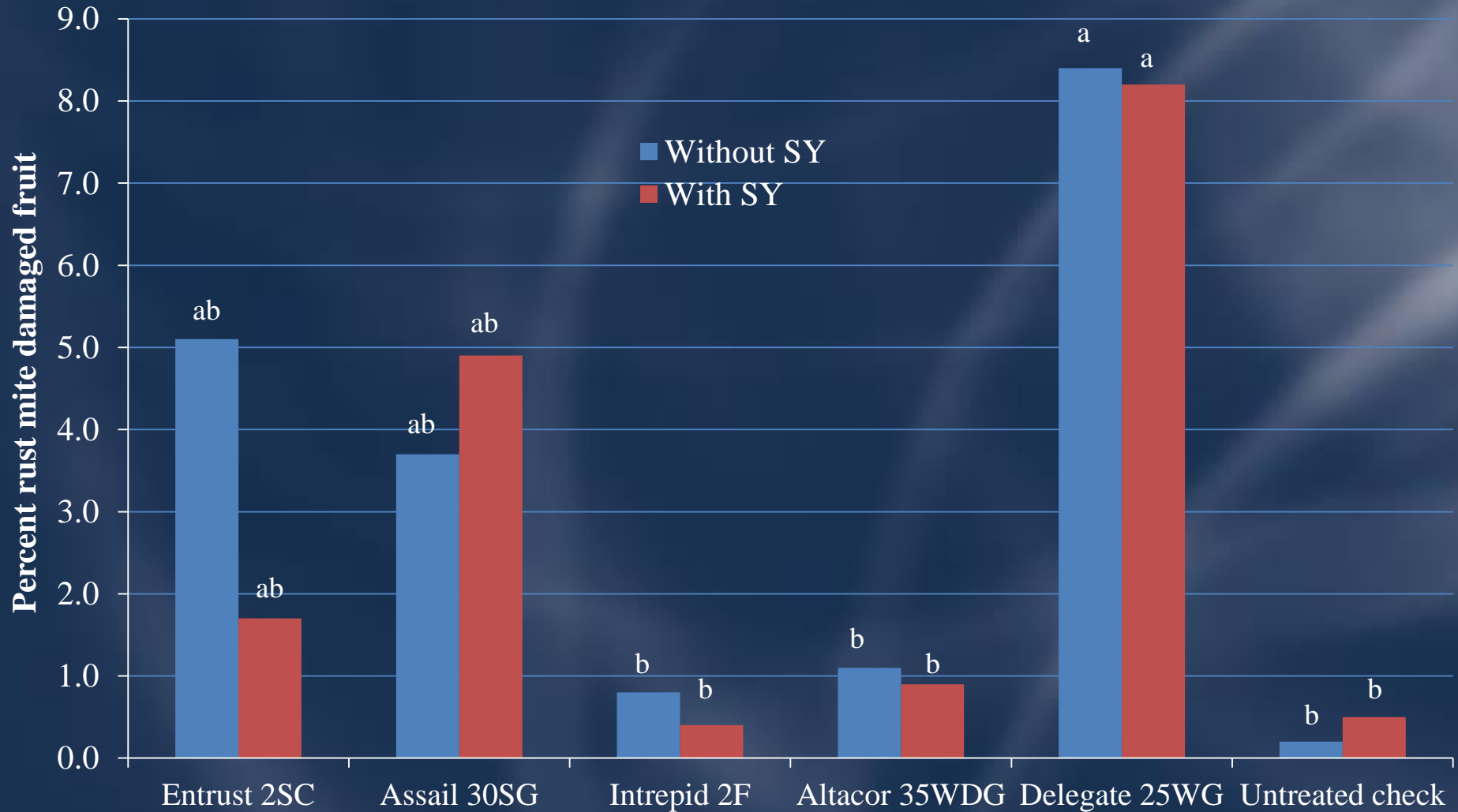


Rust Mites



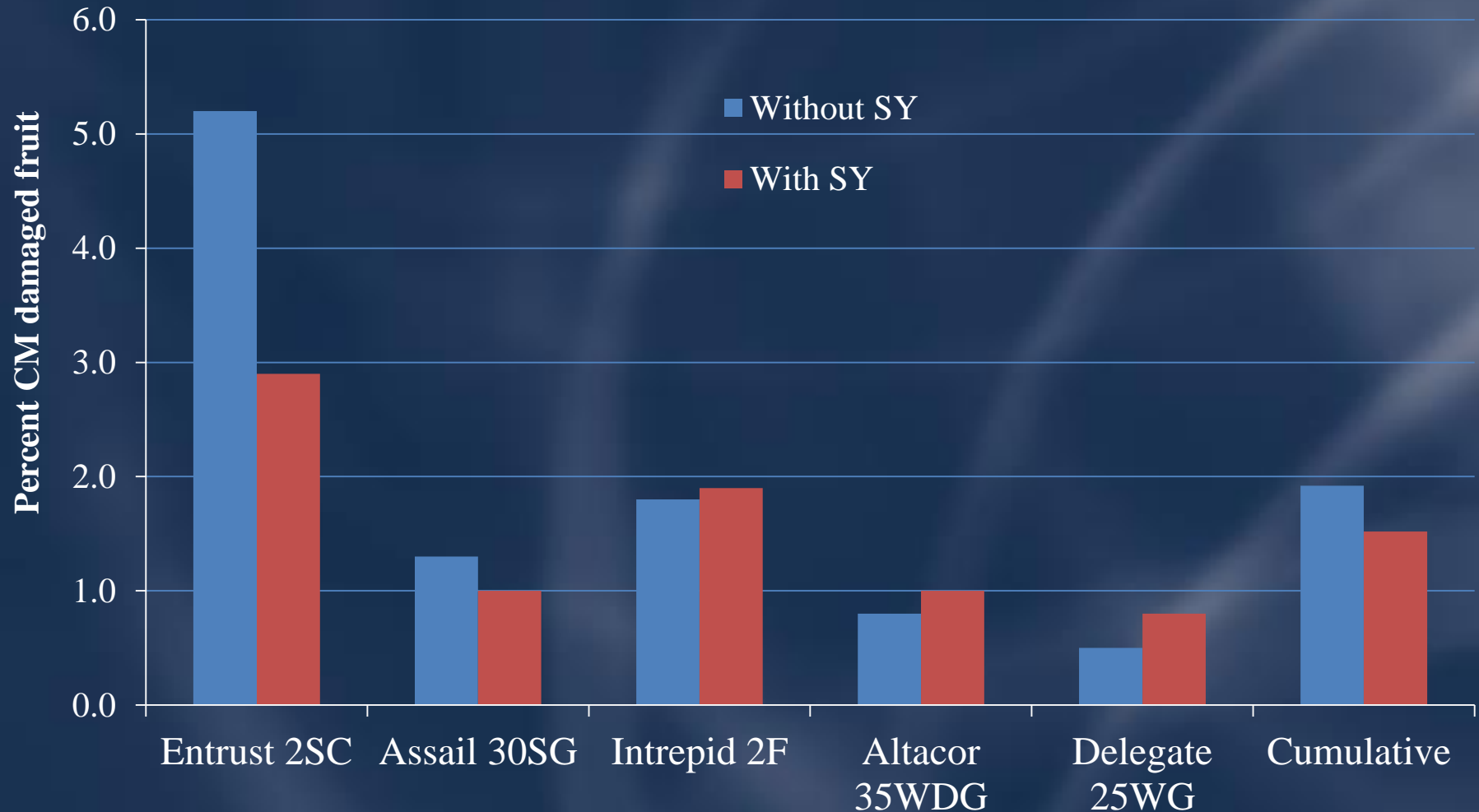


Rust Mites Harvest Evaluation





% Codling Moth Damage Harvest Evaluation





Conclusions – CA

Secondary Pests:

- Assail 30SG caused outbreak of TSSM
- Delegate 25WG caused outbreak of PRM in leaf and harvest samples

Harvest Evaluation:

- The SY did not significantly improve CM control
- Lower CM infestation in SY with Entrust 2SC and check but not significantly different
- All treatments had significantly less CM damage than the checks

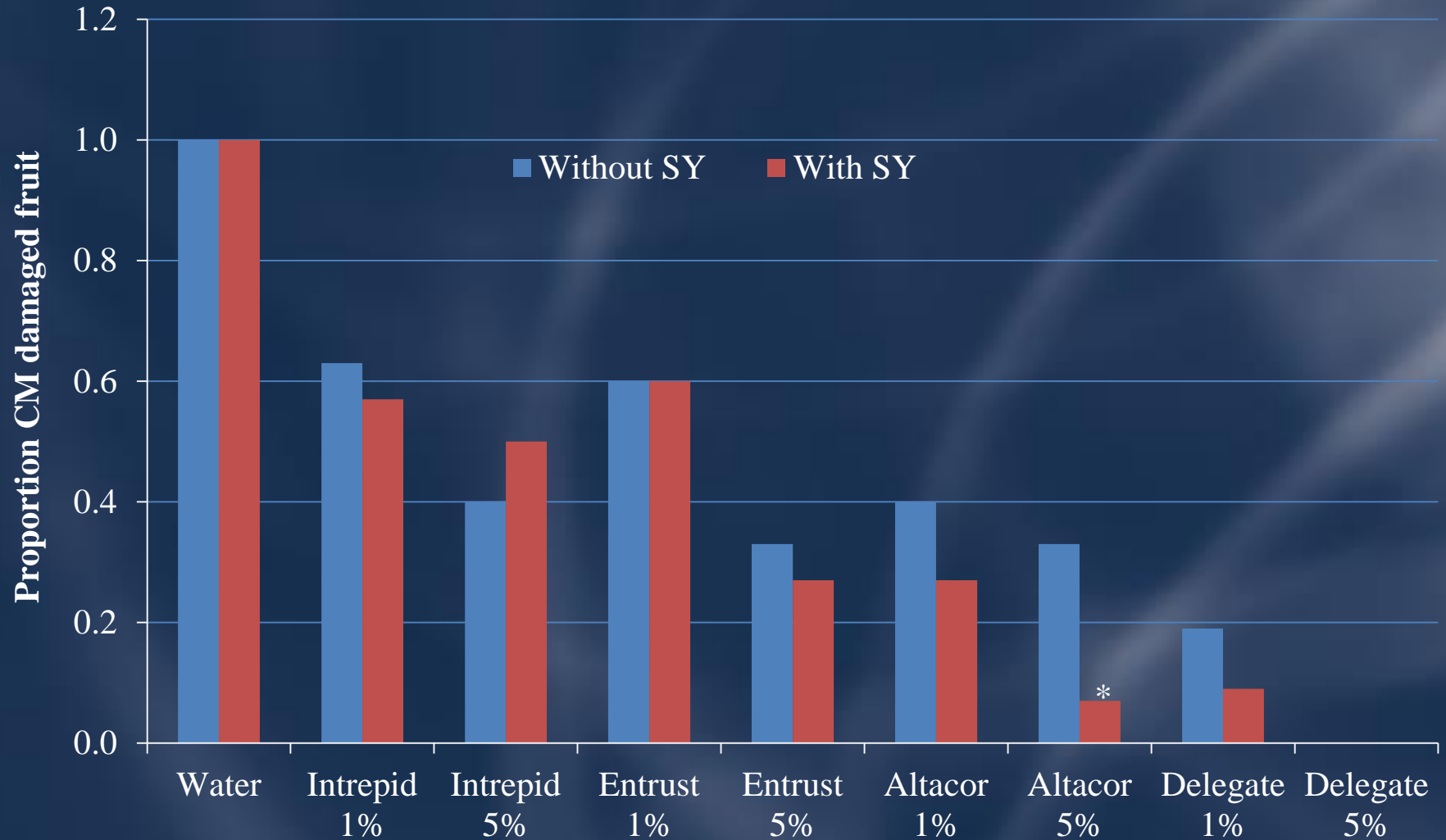


Experimental Design – WA Laboratory Exp.

- Laboratory bioassays
 - Fruit treated with water, Intrepid, Delegate, Entrust and Altacor at 1% and 5% of field rates, with and without the SY using a fruit dip method.
 - 5 neonate CM larvae placed on each fruit
 - Fruit was stored for 14 days at 25°C
 - Fruit was then examined under a microscope to determine number of larvae alive and number of stings



Laboratory Results-WA



*Only Altacor at 5% showed significantly lower damage when combined with sugar and yeast



Experimental Design – WA Field Exp.

- Seven treatments replicated 10 times
- Treatments were: untreated check, a water control, CpGV^a, CpGV+BY^bS^c, CpGV + Ct^d+S, CpGV + Las^e+S, CpGV + MIB^f
- Treatments applied at 100 gpa on 28 May, 6, 13, and 21 June and 2, 12, 17, and 26 July and 5 Aug
- Data was recorded for pear slug, CM, Pandemis leafroller and San Jose Scale

^a 0.5 oz per 100 gal

^b 3 lbs of Red Star bread yeast per 100 gal

^c 1 lb of cane sugar per 100 gal

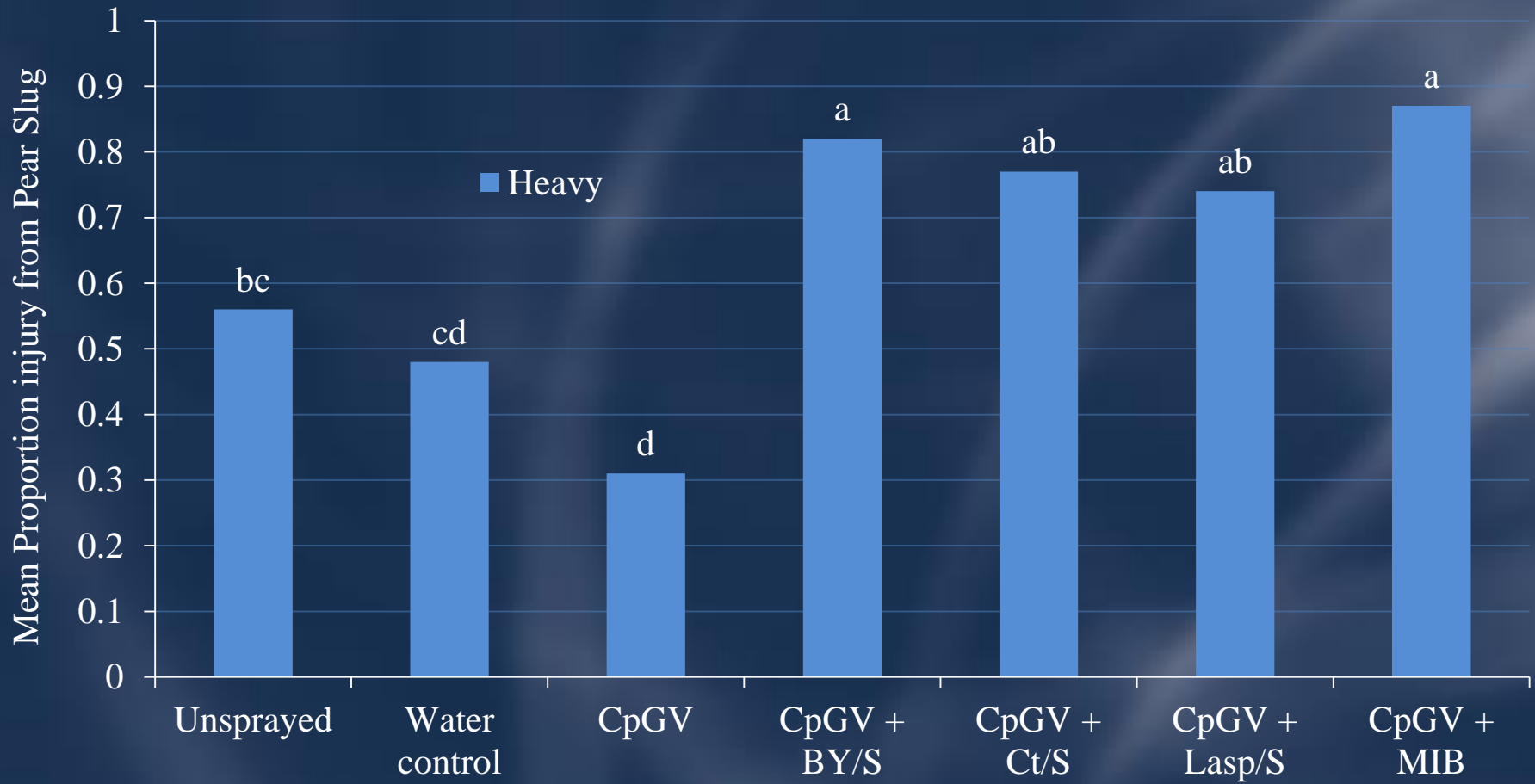
^d 3 lbs of the wild yeast *Cryptococcus tephrensis* isolated from codling moth larvae in 2011 per 100 gal

^e 3 lbs of L-Aspartate per 100 gal

^f 2 quarts of Monterey Insect Bait per 100 gal



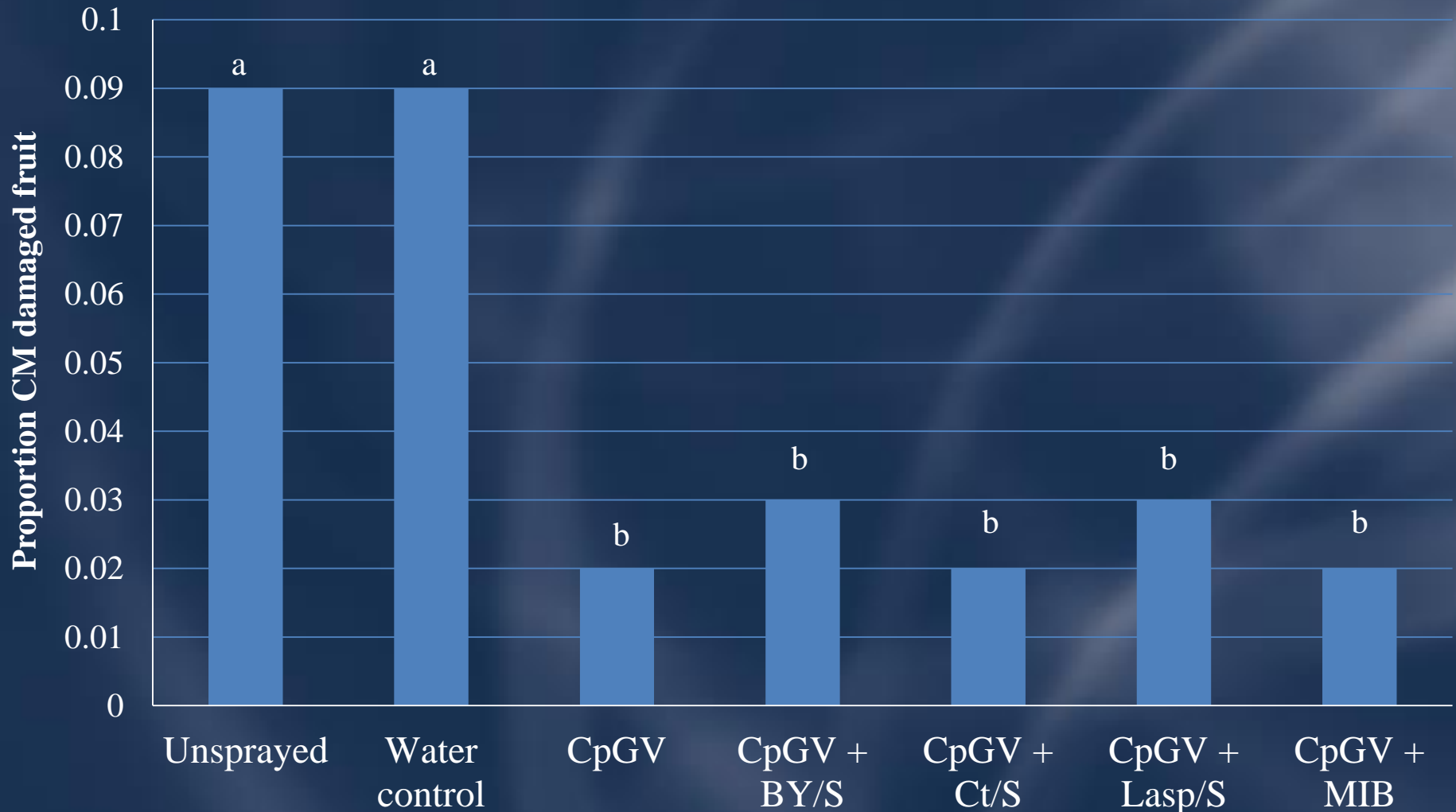
Pear Slug Damage



Heavy is >10 marks, low is <10 marks from pear slug



CM Damage





Conclusions -WA

- The addition of yeast and sugar significantly increased the efficacy of Altacor in lab trial
- The addition of adjuvants did not improve efficacy of a codling moth CpGv program
- Pear slug outbreak, injury pattern indicates that the sugary baits attracted and/or stimulated pear slug feeding, likely confounding the results of the field study



QUESTIONS ANYONE?