



# Biology and ecology of citrus blossom bug in avocado orchards.

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# Mirids as pests of horticulture

- ▶ Mirids remain relatively understudied, particularly in Oceania
- ▶ Most species are phytophagous and are often highly polyphagous
- ▶ Polyphagous mirids demonstrate a host-switching behaviour
- ▶ Non-crop host plants can act as reservoirs for pest populations
- ▶ Often closely associated with the reproductive stages of angiosperms
- ▶ Feed on plant tissues rather than sap which can lead to significant damage



Small green plant bug, *Apolygus lucorum*.



Green mirid, *Creontiades dilutus*.



Tarnished plant bug, *Lygus lineolaris*.

# What is citrus blossom bug?

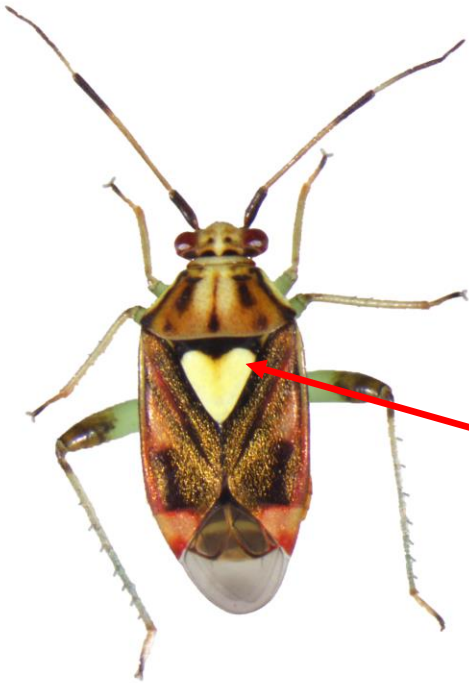
- ▶ Undescribed species belonging to the family Miridae, genus *Austropeplus*
- ▶ Considered a minor pest of NSW citrus production
- ▶ Reported as a potential pest of Australian avocado production
- ▶ Little is known about the general biology and ecology of the bug



# Project overview

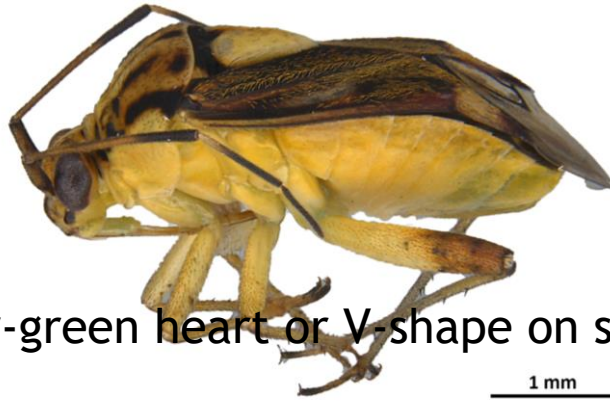
- ▶ Conduct a literature review of mirids as pests of avocado and other tree crops.
- ▶ Develop a taxonomic description for citrus blossom bug, *Austropeplus* sp.
- ▶ Investigate the general biology and pest status of citrus blossom bug in avocado orchards.
- ▶ Investigate citrus blossom bug host plant associations.

♀



1 mm

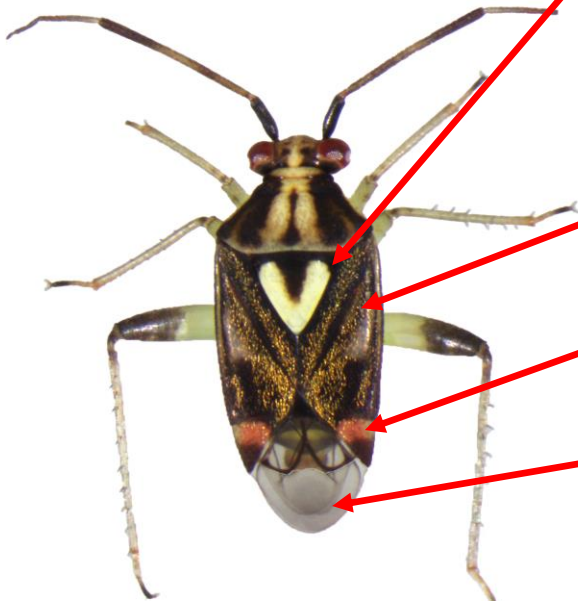
♀



1 mm

Yellow-green heart or V-shape on scutellum

♂



2 mm

♂



1 mm

Fine gold pubescence on hemelytra

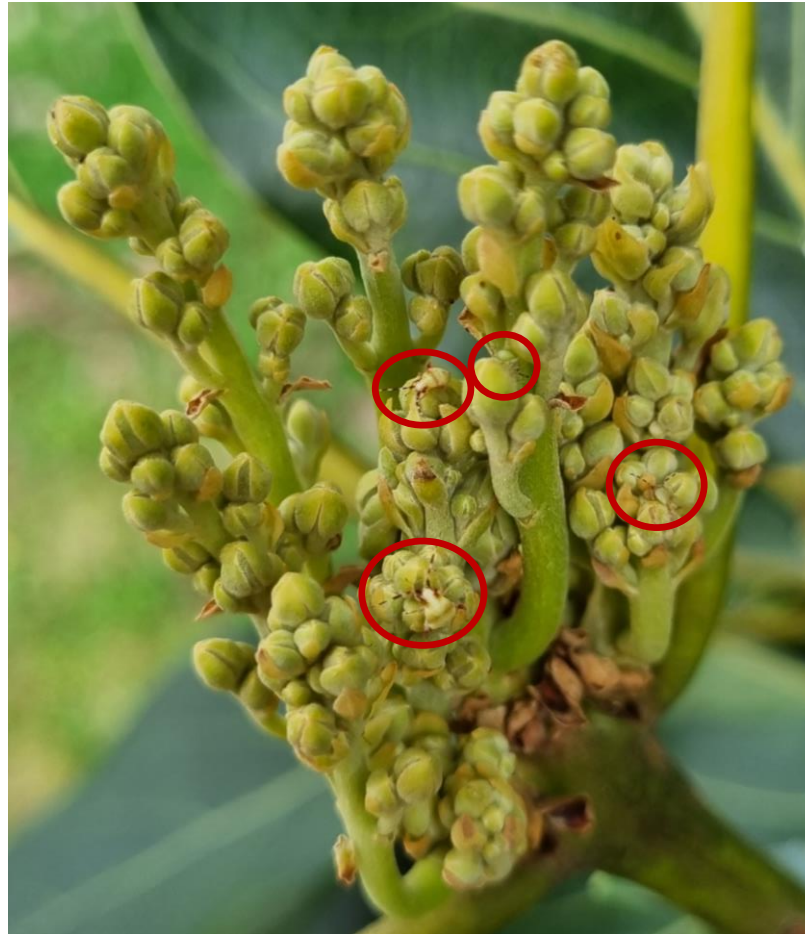
Red-yellow colouration in cuneus

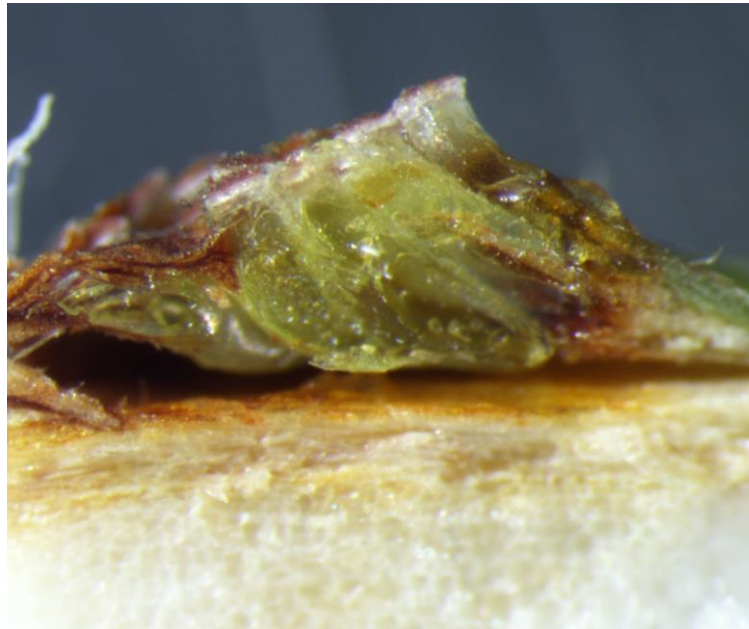
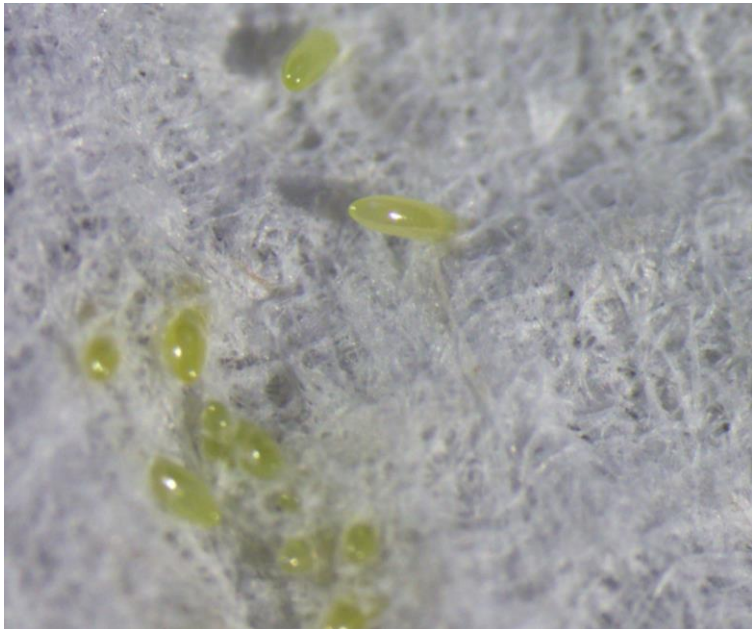
Transparent forewing membrane



Red markings over the eyes

Red and white banded antennae

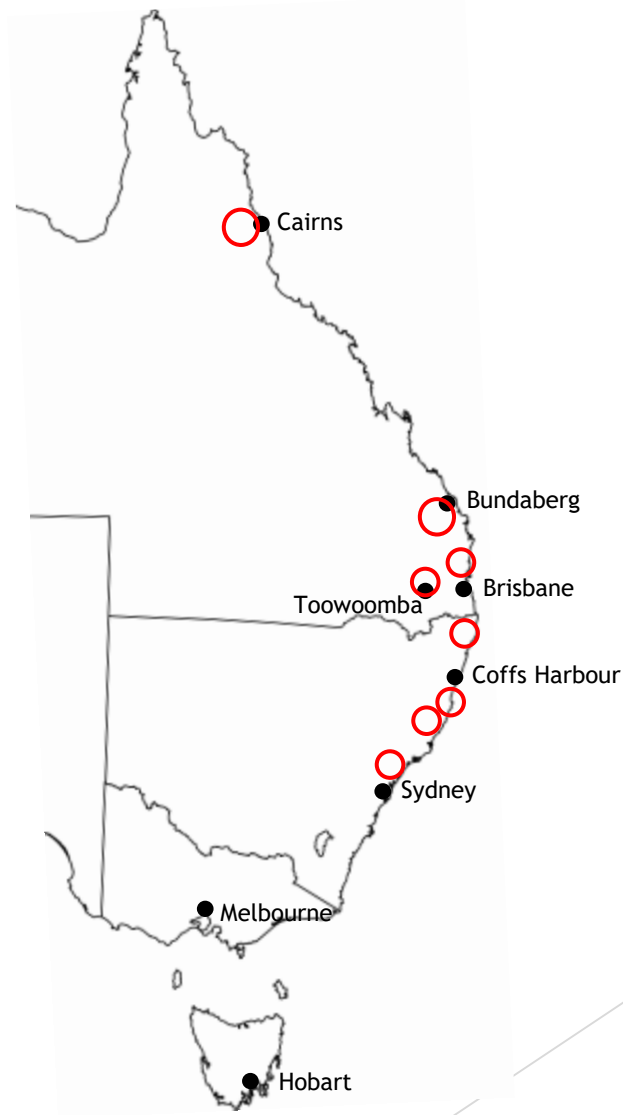




Citrus blossom bug eggs. Dorsal surface in paper towel (Top left), Ventral surface in paper towel (Bottom left), Dorsal surface in avocado inflorescence stem (Top right), Cross-section through avocado inflorescence stem (Bottom right).

# Citrus blossom bug distribution

- ▶ CBB collected from North QLD, Central/South East QLD, Northern NSW and Central coast NSW
- ▶ Insects collected via branch beating
- ▶ Almost exclusively collected from avocado flowers







CBB male actively feeding on avocado flower buds.

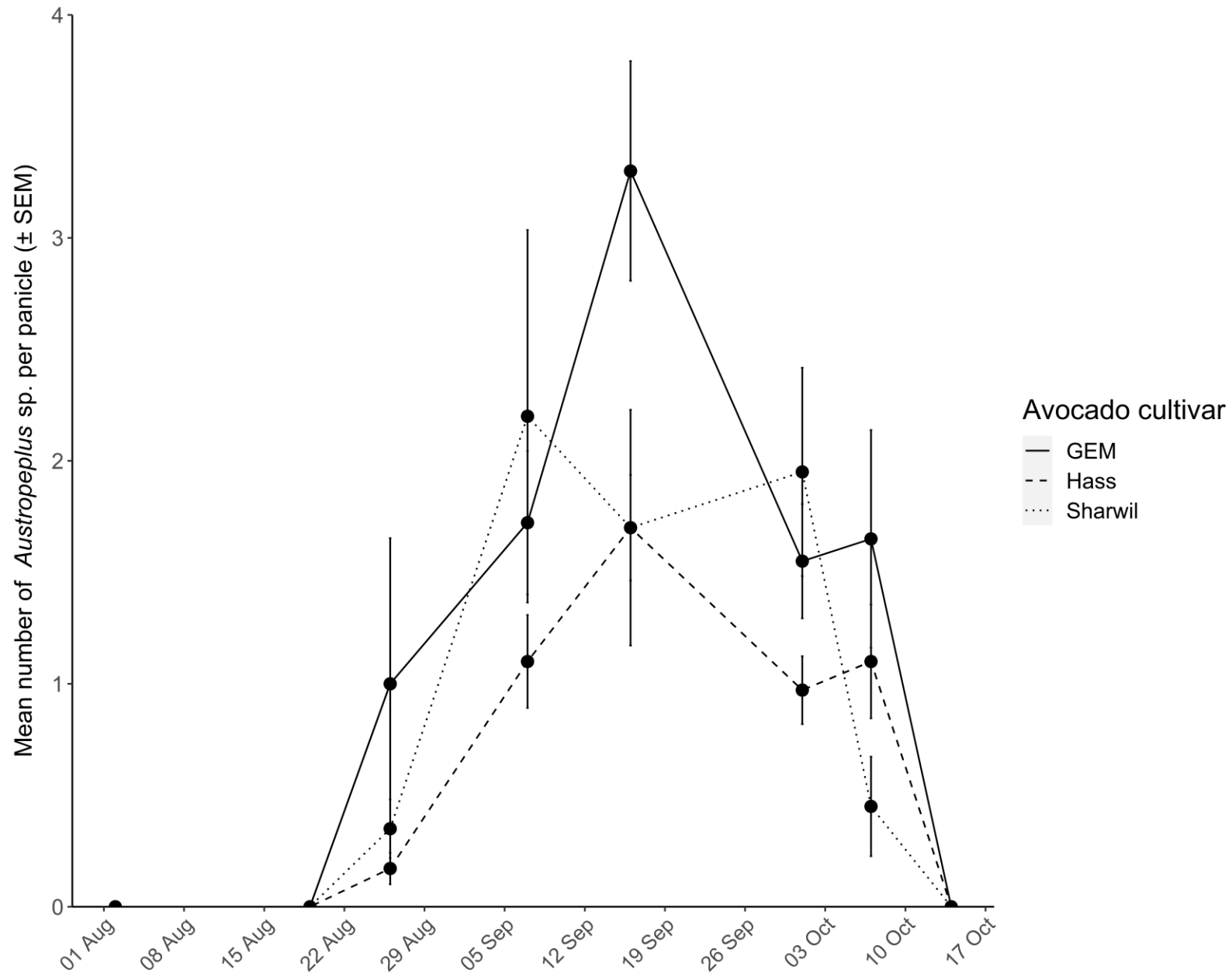


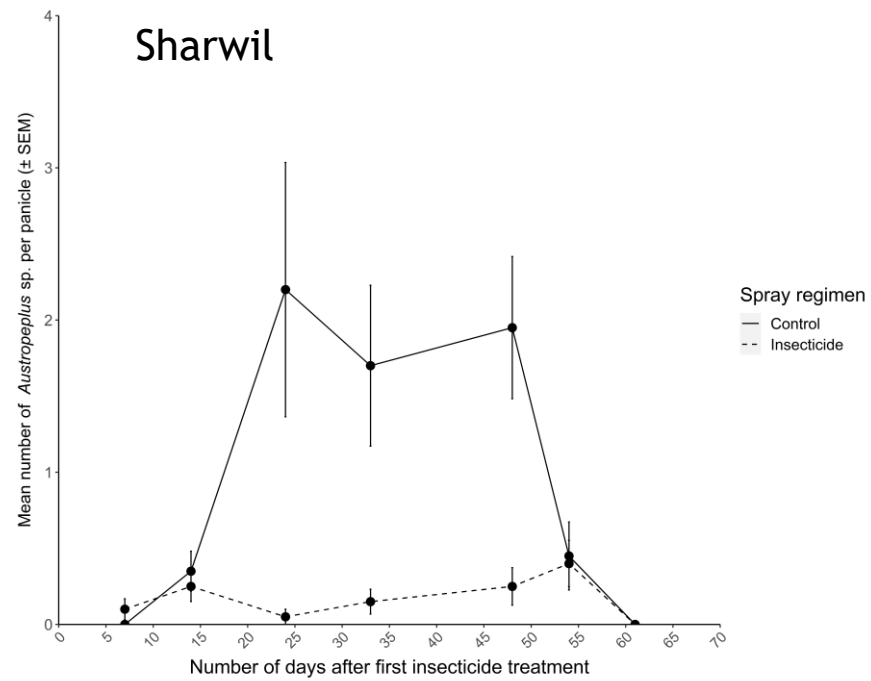
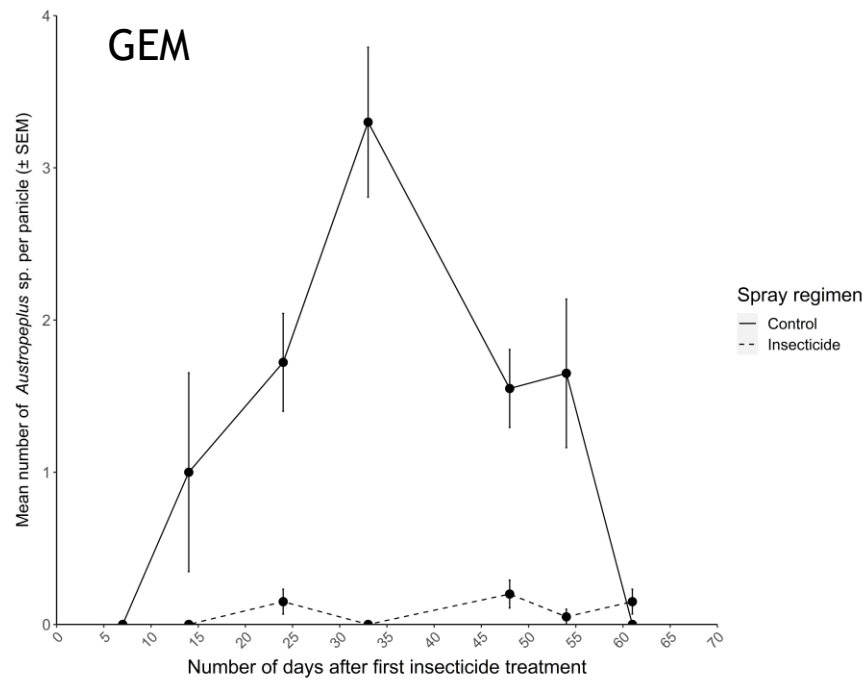
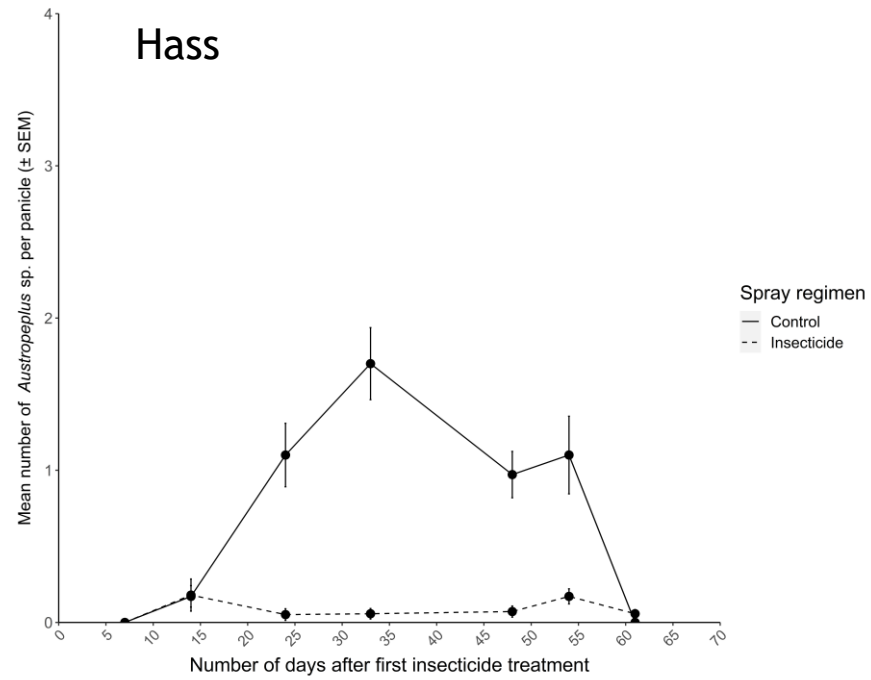
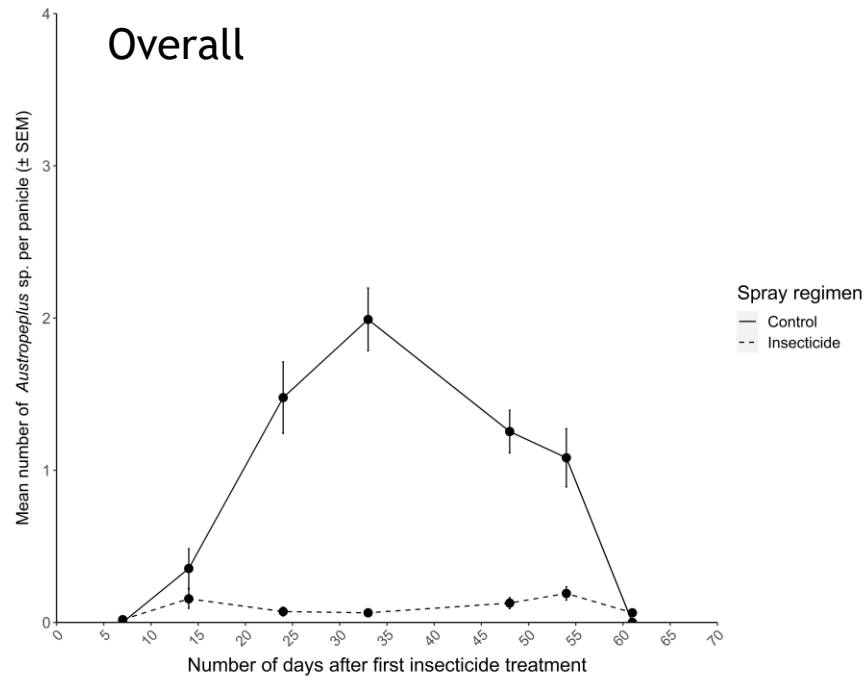
CBB feeding damage on developing avocado flowers

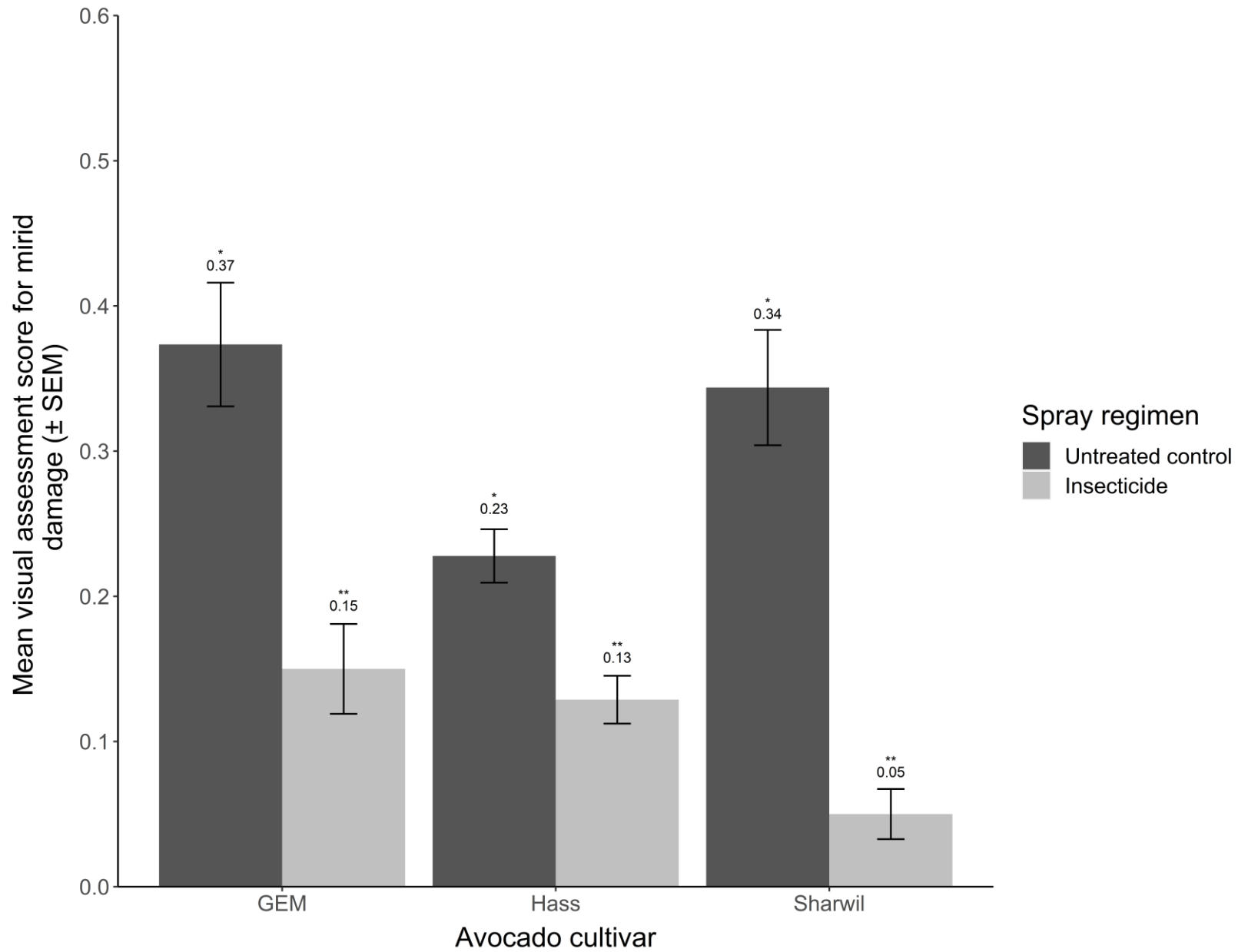
# Field trial 2022

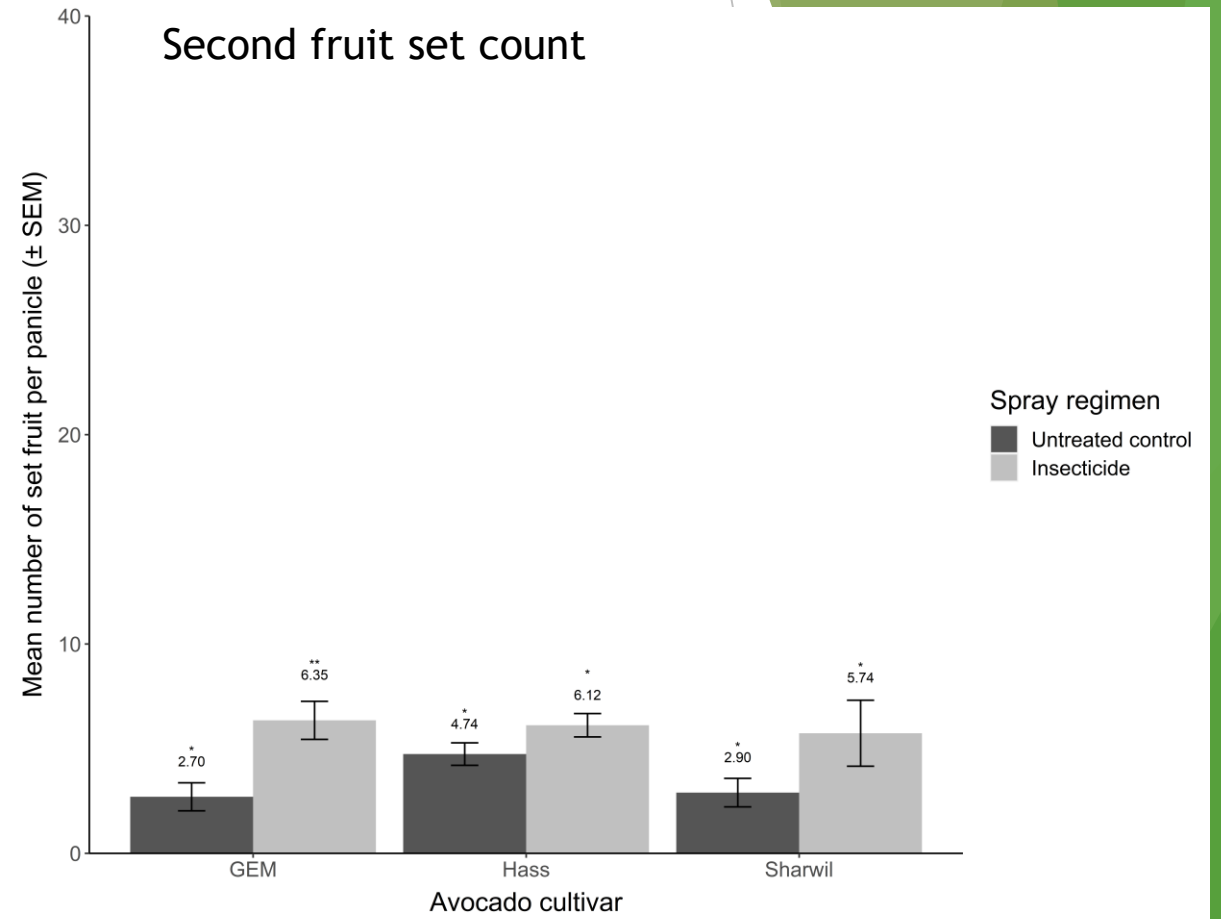
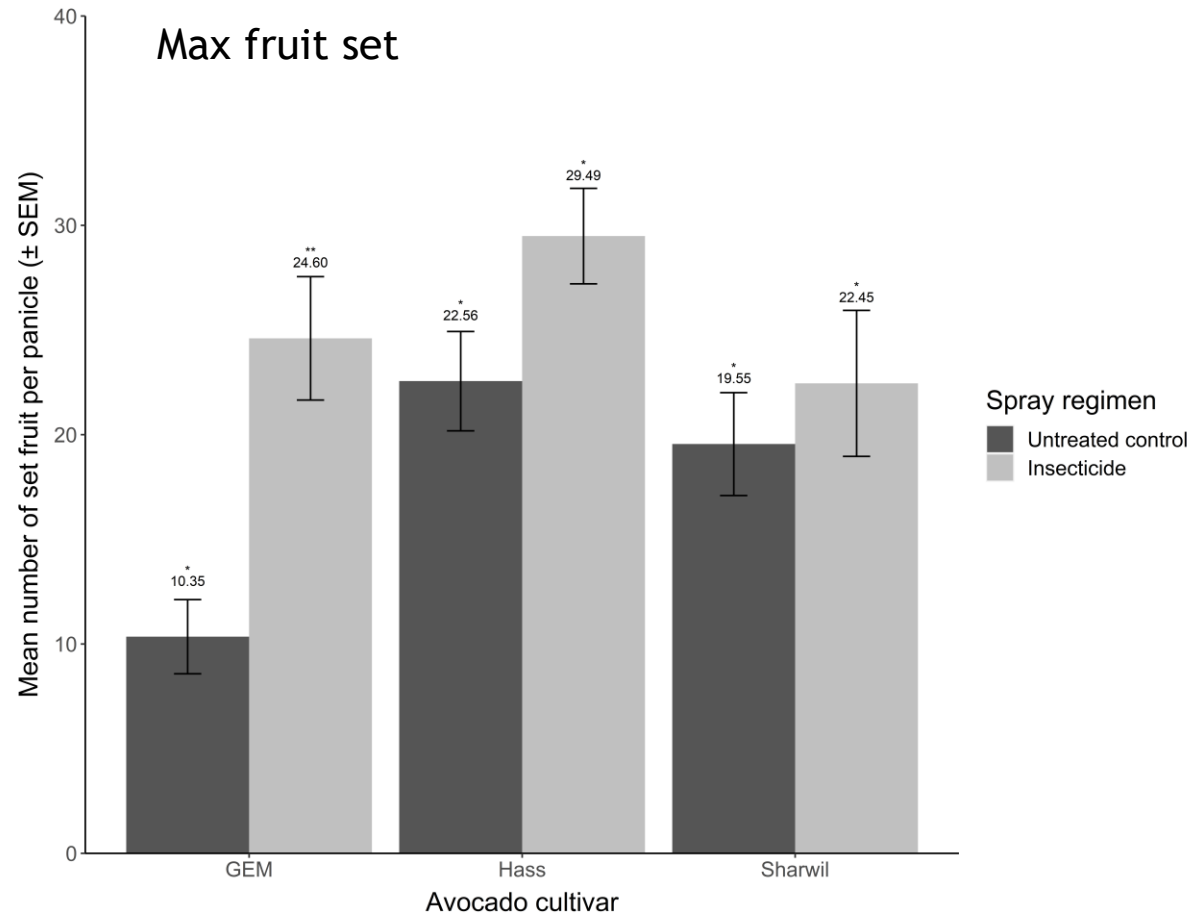
- ▶ Conducted an intervention trial on a small orchard in SEQ
- ▶ A translaminar systemic insecticide applied to half of each block
- ▶ CBB per panicle counted weekly by branch beating
- ▶ 10 panicles per experiment row were counted
- ▶ Assessments of inflorescence stage, mirid feeding damage and fruit set were also made





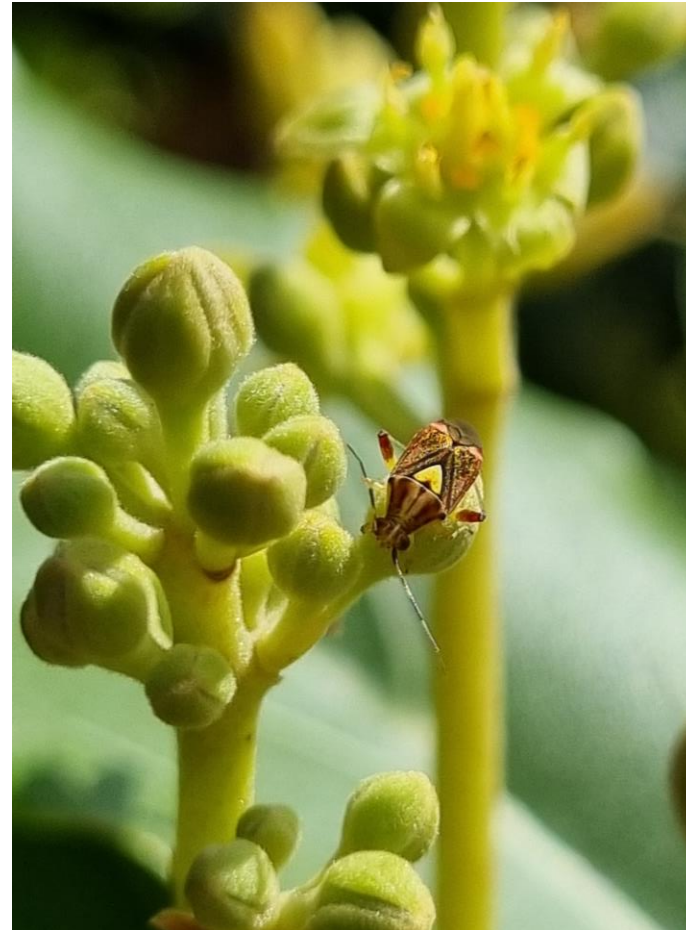






# Summary

- ▶ CBB most active during early - mid flowering
- ▶ Effective control can be achieved without applying insecticides during peak flower
- ▶ High CBB pressure can lead to significant decreases in initial fruit set
- ▶ CBB impact on yield yet to be determined



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# Thank you

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