



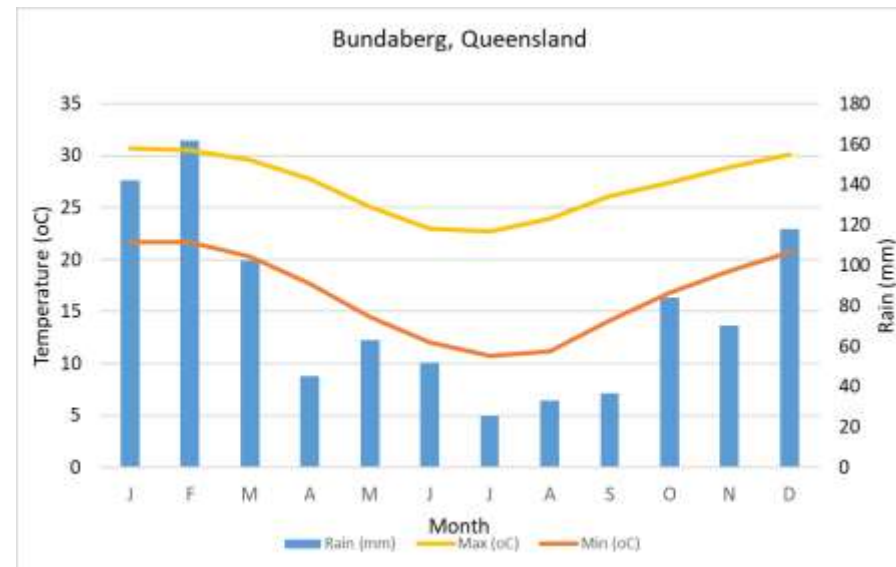
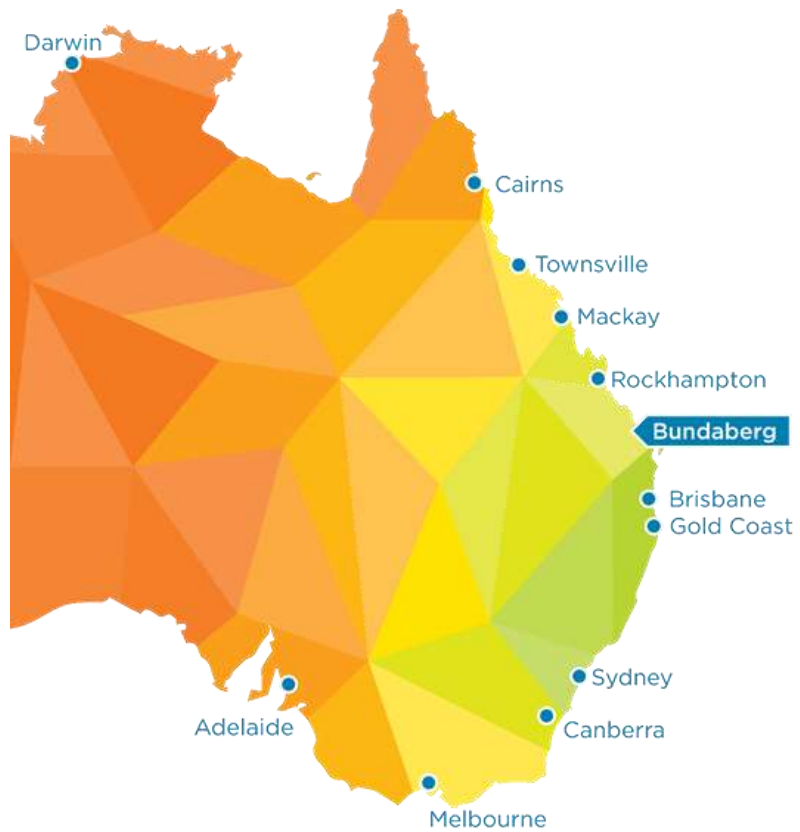
The effect of a paclobutrazol soil drench on vegetative growth in avocado in a subtropical environment

Hanna Toegel and David Oag

World Avocado Congress, 2023



Growing conditions





Questions

Will higher rates of PBZ produce extra reduction in shoot vigour?

How narrow is the window for PBZ application to suppress spring vegetative growth?

How effective is PBZ in suppressing vegetative vigour in summer?



Field Trial

- Hass/Zutano
- 2 year-old trees
- 10 m x 5 m
- Paclobutrazol
- Soil drench
- Single tree
- 10 shoots per tree
- 6 trees per treatment



Field Trial

- Time of application
 - T1: Flowering
 - T2: + 3 weeks
 - T3: Summer flush
- Concentration
 - C1: 1.6 ml/m²
 - C2: 3.2 ml/m²
 - C3: 4.8 ml/m²
 - Untreated control





Findings

Shoot vigour was reduced when applied in either spring or summer

Higher concentrations - extra reduction in shoot vigour

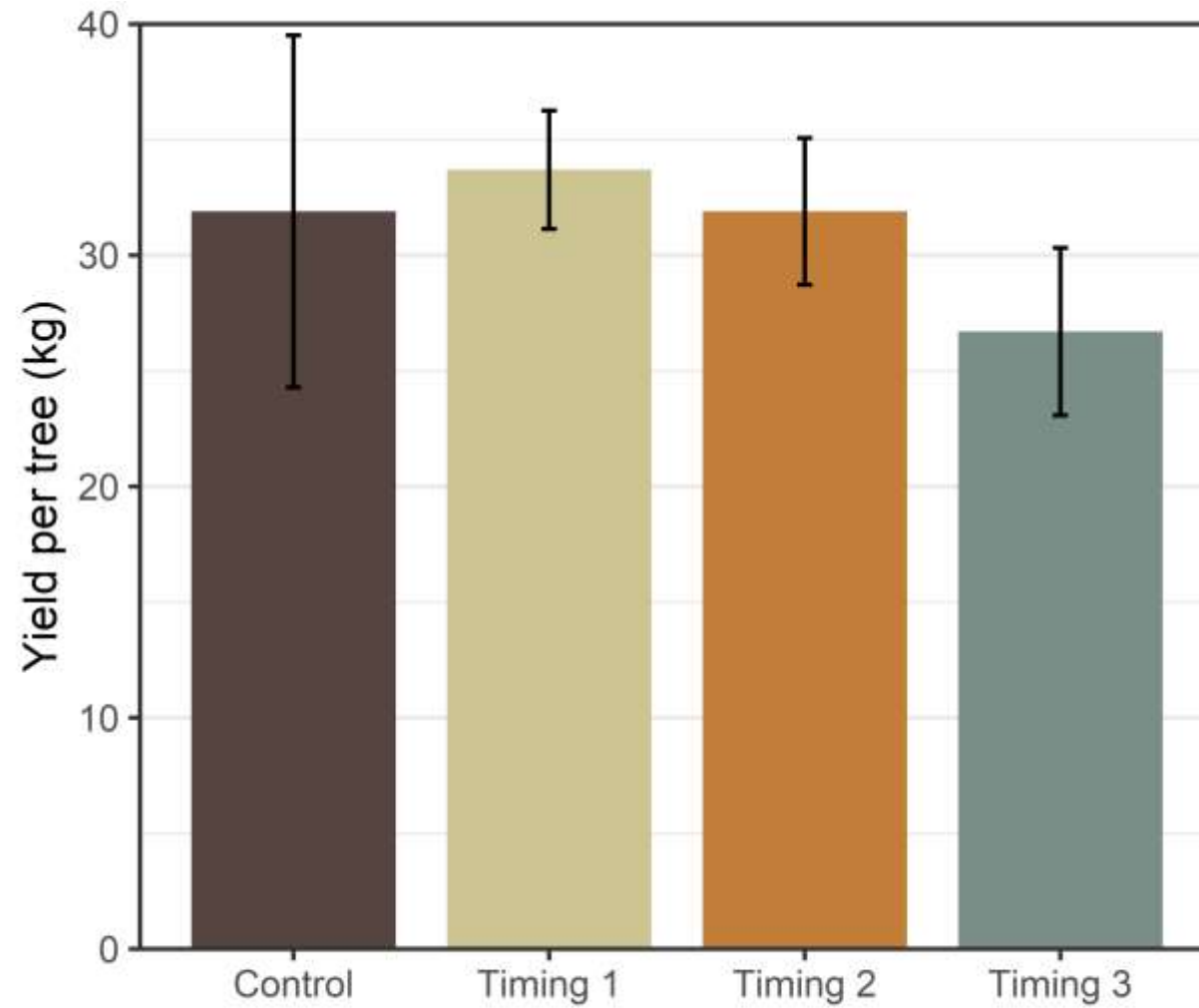
Annual increase in tree size was reduced

Yield – no difference

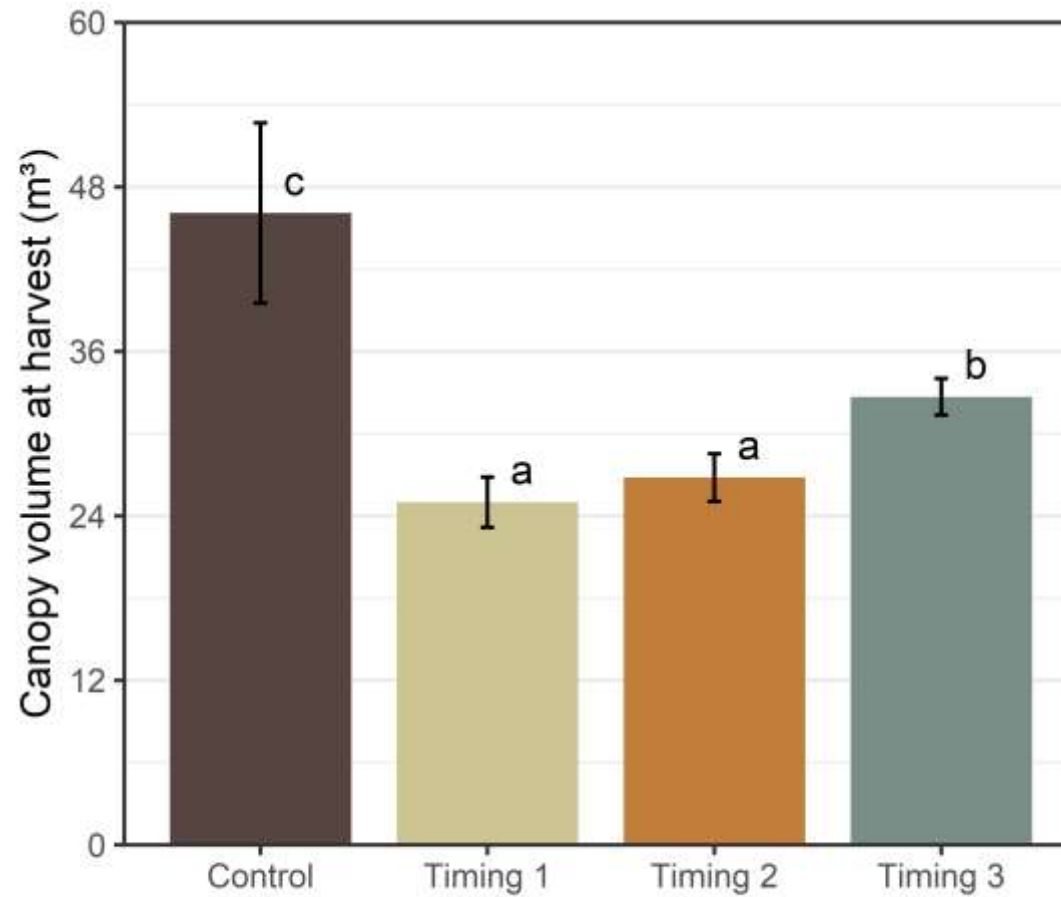
Sun damage on fruit – no difference

No detectable residue in fruit at harvest

Results – Fruit Yield



Results – Canopy Volume



All application times limit the annual increase in canopy size

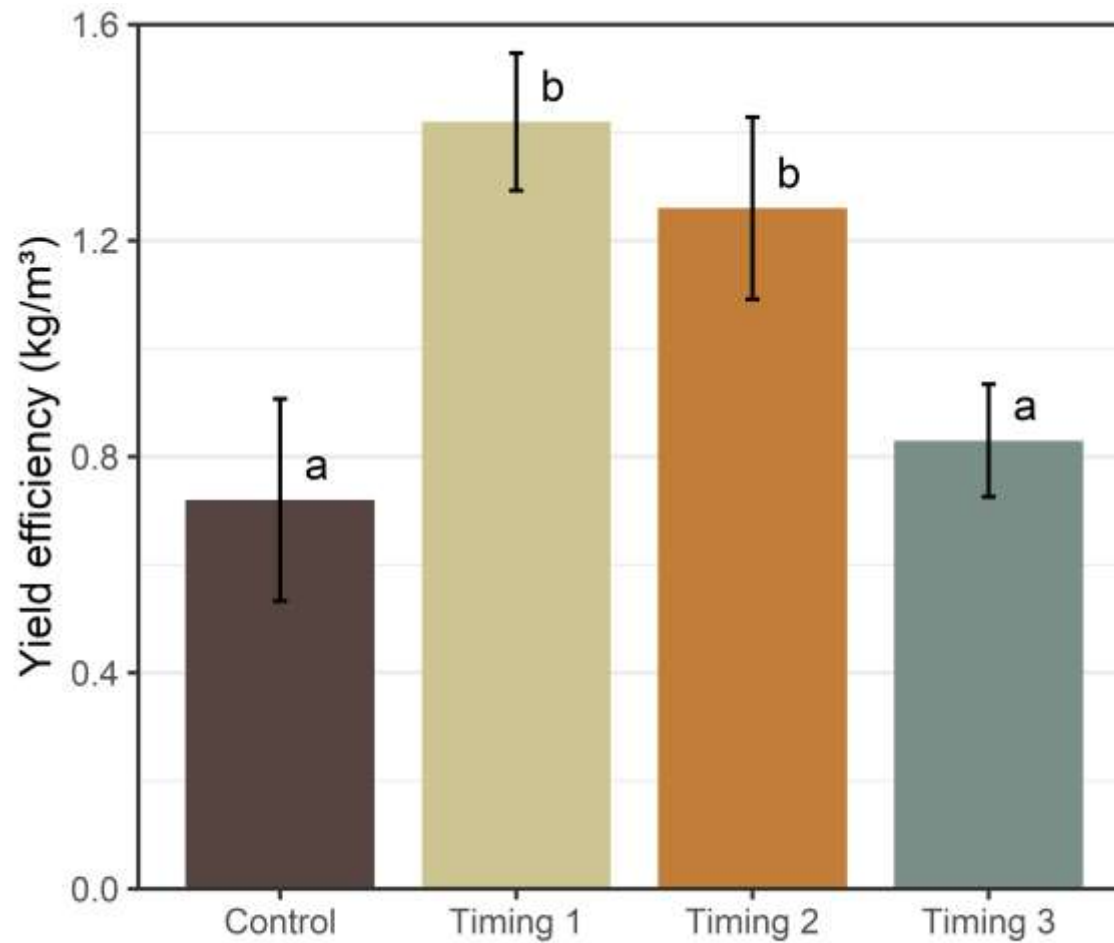
Tree size

Control

Treated

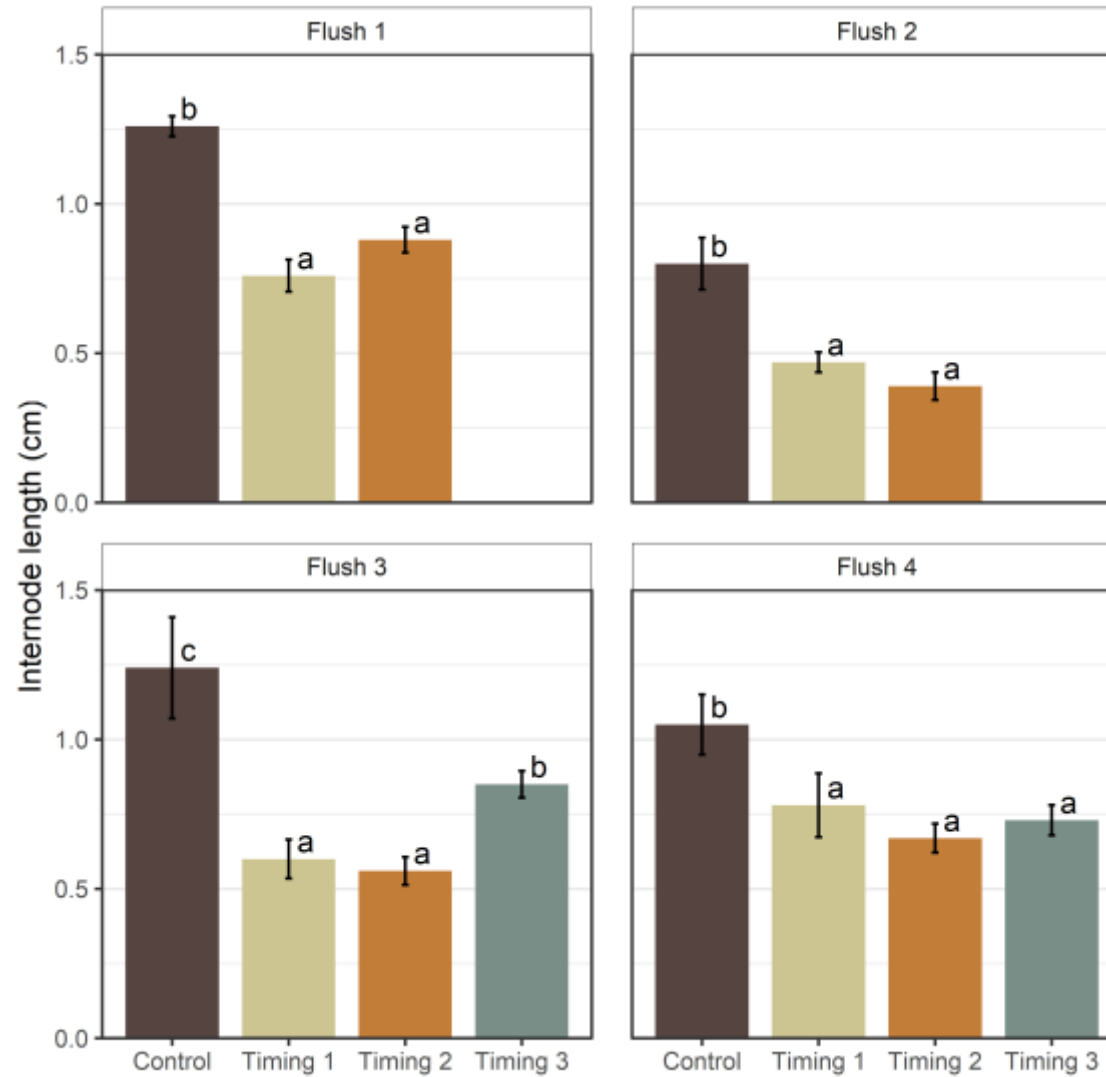


Results – Yield Efficiency

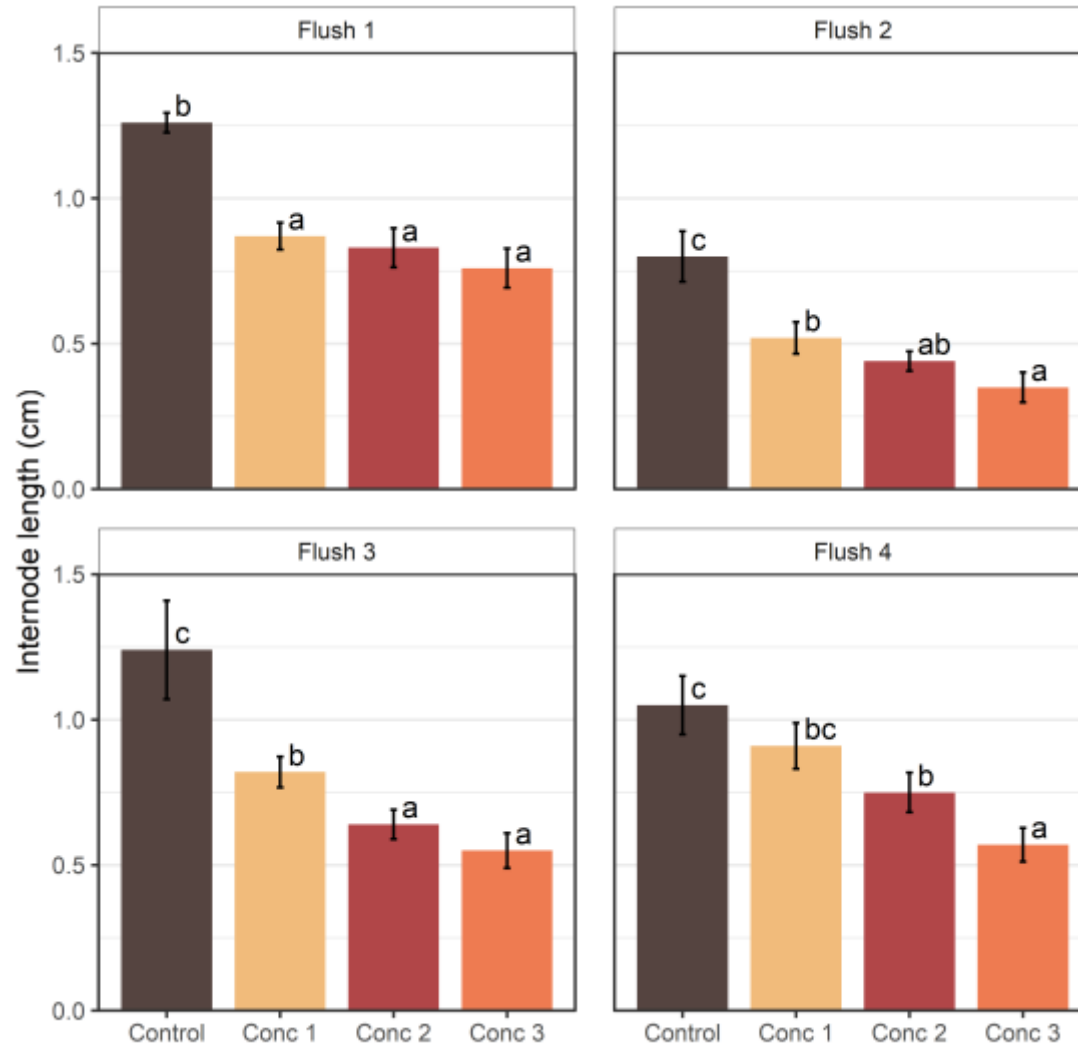


Same yield on a smaller tree (T1 & T2)

Internode Length - Timing



Internode Length - Concentration



Internode length

Control



Treated



Leaves

Control



Treated





Summary

- Timing of application – spring or summer – both effective in reducing shoot vigour in subsequent flushes
- Application of paclobutrazol during a period of several weeks following flowering has the same effect on shoot vigour
- Tree size kept smaller – potential for worker and orchard productivity benefits
- Leaf size and arrangement changed – implications for tree photosynthesis and fruit retention

Acknowledgements



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