

Canopy management in a Mediterranean climate



AVOWEST

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Background

- Avowest is north of Perth at Carabooda and Gingin
- Cold, wet winters (500 – 800mm rain) and hot summers (>40°C)
- Harvest is July – September / October
- Flowering is usually confined to October
- Mixture of newer trees (< 5 years) and feral orchard (up to 40 years)

History

- Been attempting canopy management for about 25 years
- Machine pruning.
 - Attempt to improve shape on old trees.
 - Angled cuts (about 15°) on both sides of every second row.
 - Couldn't make it productive. Better on younger trees?
- Stumping. Trees were the same height as they were when cut down by the time they were productive.
 - Not enough follow up pruning.
 - Cincturing regrowth was too variable in producing fruit set.
 - Pre relatively cheap paclobutrazol (Cultar was expensive in the 90s)
- Settled on window pruning. Chainsaws for first 15 - 20 years supplemented now with a pruning head on 8 tonne excavator.





Window pruning

- Start after harvest (August onwards) sometimes to as late as March
- Aiming to make maximum impact with minimum cuts. Anecdotally fruit set is better if majority of branches are untouched.
- Removing 20 – 30% of the tree is ideal. Sometimes as much as 50%. Rotation of branches over years.
- Sunburn. Try to avoid extreme heat but difficult in WA summer. Use kaolinite for protection but don't have access to rows after pruning.
- Follow up pruning to eliminate "bull shoots". Does this happen?
- Mostly happy. Long term yields are 17 tonnes / Ha. Very slow and risks with chainsaws.
- Impossible to prune at the "best time". Just do it!



Branch marked for removal

Sunburn







Whole orchard recycling



Bull shoot on chainsaw pruned tree





Shaping new trees

- In newer plantings have attempted to shape younger trees. WHY?
 - 🌱 Avoid feral orchards.
 - 🌱 Improve harvest / spraying efficiency.
 - 🌱 Productivity?
 - 🌱 Netting.
- Settled on “vase” shape.
- Tried pruning for shape at different times of the year.
 - 🌱 Late winter – poor fruit set due to vigorous regrowth and sink competition.
 - 🌱 Autumn. Theory was exposing buds to sunlight before “Irreversible commitment to flowering” stage. Didn’t work.
 - 🌱 Paclobutrazol not controlling regrowth at 2 – 4 L/Ha
- Unhappy. Try shape pruning after fruit set.








Pruning rules

- Fruit always wins.
- Pruning is a long term project.
- Best branches to retain have a high proportion of pendulous branches.
- Bull shoots to be removed, or strongly cut back.
- Usually can't prune one tree in isolation to open windows.
- Best after fruit set but before summer (Dreaming).
- Minimum cuts for maximum effect.
- The best way to control vigour is to grow fruit.

Future

- Window pruning is effective, but slow for old, feral orchards
- Tree training is not working.
 -  Timing of pruning?
 -  More PGR / different timing?
 -  Alternatives to vase? Trying some central leaders / low trellis.
- Prefer an ugly avocado tree with fruit to a pretty one without!

Thankyou

