

Afourer project update newsletter December 2020

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States are reopening borders and I will be visiting all districts as soon as possible to re-establish connection with grower case study and demonstration sites.

Topics

- Demonstration trials
- Replicated trials
- Field days (past and planned):
 - Sunraysia Nov 2202
 - Dean Morris autumn 2021 and other 2021 farm walks
- South Africa video zoom meetings; pruning & carbohydrate sampling
- Project funding acknowledgements
- Contacts

Demonstration trials

Demonstration trials have been and are still being set up on growers properties around Australia. As I visit grower sites over the next couple of months, more demonstration trial sites will be reported in future newsletters.

Demonstration trials have been set up in on the Southern Cross managed farm at Ellerslie (Sunraysia) in collaboration with Rebecca Grant, David Lyell, Jason Plant and Matt Short. Treatments include heavy topping (~1.5 m) every second row, half tree hand pruning, north-west window pruning and intensive pruning.



Figure 1. Half tree hand pruning treatment at the Southern Cross managed farm at Ellerslie.

At the Nutrano farm, Tom Braybrook and David Stevens have established a number of demonstration trial sites including heavy pruning and a high nutrition treatments.



Figure 2. David Stevens standing in front of a tree (25 Nov. 2020) that was heavily pruned in late spring 2020.

Replicated trials

Seven replicated trials have been established; four on mature tree and three on young tree blocks. Five replicated trials are in Sunraysia and two are in the Riverina. The replicated trials have four to five replicates.

Sunraysia mature tree replicated trial treatments:

1. Light Hedging annually (LH): annual light hedging sides for row access, topping might be done every second year for height control.
2. Half tree hedging (HH): cut one side of the tree hard and let it grow and crop until it causes row access issue then cut alternate side.
3. 1M pruning after harvest; traditional one minute pruning, open a door into the tree and remove some centre limbs.
4. 2X pruning and regrowth management; intensive side window pruning after harvest and regrowth management in autumn.
5. 3X pruning and regrowth management; intensive side window pruning after harvest and regrowth management in December and autumn.

Riverina mature tree replicated trial treatments:

1. Light Hedging annually (LH): annual light hedging sides for row access, topping might be done every second year for height control.
2. 1M Centre limb pruning: annual light hedging sides for row access and traditional one or two centre limbs removed.
3. Centre limb pruning + regrowth management: annual light hedging sides for row access, traditional one or two centre limbs removed and regrowth management in summer and autumn.
4. 3X pruning and regrowth management; intensive side window pruning after harvest and regrowth management in December and autumn.



Figure 3. An intensively pruned tree in the Sunraysia replicated trial (few days after pruning). Pruning aimed to form a structure of well-spaced limbs. This treatment will have a yield reduction in the first year and pruning next season is expected to be easier and quicker.



Figure 4. Young mature trees pruned intensively in spring in the Riverina have grown a good level of new shoots. Andrew Creek, trial coordinator and pruner, said that the trees look bare similar to the photo of the Sunraysia intensively pruned trees.

Young tree pruning

Three replicated young tree trials were implemented; Nutrano (VIC Sunraysia) KW Orchards (NSW Sunraysia, formerly Belah heights) and Mick Cuzzillo (Riverina). The treatments include; no pruning, centre limb pruning and intensive pruning. Treatments are replicated five times. The intensive pruning treatment removes centre or side branches that are expected to be problems limbs in the future and providing adequate space between the limbs. In other words the intensive pruning treatments aim to prevent the trees growing “wild” by the time they reach maturity.



Figure 5. Young tree pruning replicated trial at Nutrano; centre pruning treatment.

Field days

November 2020 Sunraysia farm walks

Two farm walks occurred in Sunraysia to inspect pruning trial sites, overview grower Afourer practices and general discussion. Follow up visit will occur in late summer or early autumn.

A farm walk occurred on the 24th of November at KW Orchards (formerly Belah heights) that is managed by Lyn Tonsin and Toby Hederix. Toby discussed that his trees have been growing and producing well for the first 10 years, however they have reached maximum size and need to be pruned for row access. The trees have been pruned similarly to the one minute pruning treatment in the replicated trial.



Figure 6. Farm walk participants inspecting replicated trial trees at KW Orchards. Steven Falivene is holding an electric chainsaw that was used to implement pruning trials.

A farm walk occurred on the 25th of November at Nutrano SunWest that is managed by Tom Braybrook along with consultancy from David Stevens. The farm has one of the oldest Afourer trees in the region and Tom and David discussed the challenges of managing the highly vigorous trees. Managing their trees is mostly by mechanical pruning and some hand pruning where relevant. Tom indicated that the trees yielded very well during the early years and then as the trees matured and needed annual pruning for row access average yields started to decline. Tom and David, with the help of a Racheal McKenzie (field technical officer) are active on running numerous trials to help understand the best option for their circumstances (reported in project demonstration trials).



Figure 7. Farm walk participants inspecting replicated trial trees at Nutrano.

Dean Morris farm walk April 2021

A farm walk to Dean Morris's farm will occur in late April 2021. Participants will see Dean's trellis production, conventional wide spacing, overhead netting and a recent planting of experimental one wire high density training. More information and registration information will be provided in March 2020. A special thank you to Dean and John Morris for sharing their wealth of experience to the project.



Figure 8. Dean Morris trellis production system



Figure 9. Dean Morris at his one wire trellis high density planting.

General trail and demo trial/case study farm walks

General short farms walks inspecting trial sites (replicated and grower demonstration) will be arranged in autumn 2020. It is important see trees soon after pruning (spring) and a follow up in autumn on how they fill out the canopy. Pending no border closures farm walks will occur in South Australia and Sunraysia, including the Riverina Dean Morris Farm walk. Dates will be provided by March 2020.

South Africa Zoom meetings; pruning and carbohydrate sampling

Four zoom meeting has occurred with South African citrus specialists. The first four occurred in April 2020 with Paul Cronje (Citrus Research International), Hans Bester (Citrus Research International) and Jackie Standers (Philagro). A report of the zoom meetings is published in the “Project Planning Background Information report” previously circulated. Please email me if you wish to have another copy.

A second zoom meeting occurred with Marne De Vries (Agri Technovation) and Jakie Stander (Philagro) discussing carbohydrate leaf and root sampling for predicting and managing crop load.



Figure 10. Left: Jakie Stander (Philagro), Right: Marne De Vries (Agri Technovation).

A video of the presentation was made available for a short time and is now removed. Growers can contact me to finding more about carbohydrate sampling. Negotiations are under way to offer attempt to offer growers a special deal to sample their trees and obtain results at the end of the season.

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Hort Innovation is the grower owned, not-for-profit research and development corporation for Australian horticulture.



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