Focus Orchard Trial Update 2018 (WA and SA)
August 2018
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Getting back to basics with on orchard research inspires innovation. Was the trial successful? What was learnt? What problems were identified? Even if the outcome is unclear, research gets people thinking and motivated to try new things they may have never considered. This article will touch on some of the ongoing and completed on-orchard trials conducted in South Australia and Western Australia. The Future Orchards Front Line Advisors (FLA) and Focus Orchards makes all this possible and we are thankful for their ongoing contribution to this project.

Focus Orchards
AgFirst would like to take this opportunity to thank all the outgoing focus orchards we have worked with these past years. Their contribution to trials, helping host successful field days and willingness to be industry leaders and early adopters is necessary for the Future Orchard™ project. In this article we will introduce the new Focus Orchards in West Australia and South Australia.

Michael, Kaye and Matt Fox
Located just outside of Pemberton, West Australia, the Fox family (Michael, Kaye and Matt) grow a range of pipfruit varieties as well as avocados. Having recently converted a large area to netting and through removing all traditional plantings, they are now exploring other ways to increase orchard productivity and profitability throughout their existing planted area. With quality a big focus, we look forward to supporting this thriving family business through the Future Orchards™ Program.

Pictured: Matt Fox assisting Craig Hornblow (AgFirst Nelson) and Dale Goldy (Stemilt USA) during the Autumn 2017 Future orchards walk held at his family orchard.

Filsell’s Apples
The Filsell family settled in the Adelaide hills during the 1890s. They planted their first apples during the early 1900s. Currently several generations of the family enable this orchard to not only grow and pack a range of high quality apples but also stonefruit such as cherries. As younger generations become
integrated into the daily business operation, new ideas taken from across Australia and overseas are really driving innovation and redevelopment on this expanding orchard, particularly exploring new varieties and new production systems.

On Left: Members of the Filsell family during the 2018 Winter Future orchards walk. On right Rockit which was click pruned at Filsell’s Orchard as part of a pruning demonstration.

**Trial update**

**Evaluating new rootstocks for apples in WA (South West WA, Susie Murphy White)**
In August 2018, 3 new rootstocks (CG11, CG41 and CG-202) of Lady in Red will be planted as part of an on-orchard trial in WA. This is a great opportunity as established rootstocks contribute to the success of orchards for decades.

In January 2018 both the Northern and Southern Future Orchards walks had guest speakers (Tom Auivil and Dr Nicola Dallabetta) who are heavily involved in rootstock development. Internationally the role rootstocks play in the development of orchards is a topical issue well worth completing research on.

This trial will aim to identify how the rootstock interacts with cultivar choice, the climate and pest and disease pressures. Conducting the trial in a commercial orchard environment will allow these factors to be assessed against orchard management decisions as well. Rootstock evaluation projects are long term with initial results not predicted to be available until 2020. The trial will be regularly monitored and it is hoped that ongoing research and selection will only offer growers more choices to be more adaptable with rootstock selection.

**Pruning for height management (Adelaide Hills SA, Paul James and South West WA, Susie Murphy White)**
In Western Australia a trial currently being conducted is managing tree height in high density orchard under net (Frustar). Trellis pole based netting systems are a significant investment for growers. Not only is damaged netting a risk to fruit quality through exposing fruit to hail damage or sunburn, it can affect the integrity of the remaining structure.
In South Australia on a mature dwarf Rosy Glow orchard, a trial is investigating how different methods of pruning can help maintain tree height while benefiting orchard management through reducing pruning costs over time or increasing fruit quality.

Both trials look at different management techniques to not only control top tree vigour but also preventing tree height damaging the netting. Some treatments include:
- Summer pruning leaders and tying leaders down
- Utilising click pruning
- Appling NAA (at 2% in pruning paints)

The South Australia treatment also involves the growers own practise which is pruning the leader back to 3 or 4 buds. Including this will enable the project to better evaluate if there is a superior pruning method to managing tops of mature trees.

During the Future Orchards walks in June 2018, guest speaker Stefano Musacchi discussed optimising pruning for fruit quality and adopting tools like click pruning. The main take away messages available on the APAL website focus on how pruning modifies tree growth and the balance between production and growth. His input into pruning timings and styles on this trial was very useful.

The results and reports for both trials should be available later in 2018.

Pre-Planting Treatments for Apples on Old Apple Ground (WA, Susie Murphy White)
In the July 2018 volume of APAL’s Industry Juice, Front Line Advisor, Susie Murphy-White reports on the exciting early results from an exciting pre-planting trial focusing on different treatments for apples on older ground.
This trial held in Manjimup investigated using Biofumigants as well as Beneficial bacteria as alternative fumigators to the standard Metham sodium and Chloropicrin used widely in NZ.

The Chloropicrin treatment has given the trees a good start by killing all diseases in the soil profile. These encouraging results as well as its common use in New Zealand, suggest that this could be a fantastic solution to fumigating old apple ground. It’s important to not rule out the Bio fumigation and Beneficial Bacteria treatments just yet. The monitoring of these treatments is ongoing, so time will tell if the benefits of improved soil health will enable the trees to become good producers of quality Fiero® Fuji apples.

Timing of pruning of young trees (Paul James South Australia Adelaide Hills)
All growers try to maximise young tree development to establish a well-balanced structure to support a percentage full crop as soon as possible.

In a block of 5th leaf (4yo) young Aztec Fuji (M26) the aim of the trial was to understand if pruning at different times had an effect on young tree growth.

The pruning timings used were:
➢ Post leaf fall
➢ Mid-winter
➢ Green Tip
➢ Full Bloom

Over the course of the trial, 10 trees were included in each treatment and pruned at the appropriate times. The resulting growth was measured, and data collected for future reporting. By measuring the trees pre-pruning and then again at the end of the 2018 growing season the superior treatment (if any) could be identified.

Many growers may have anecdotal justifications around when they prune, or it could simply be when they have time and labour resources available. With the second set of data recorded this winter a report on the trial findings should be available soon.

APAL Website has all trials
To read the trial final reports please go to the APAL Future orchard archive library. Please note the trials completed in 2018 are only just being completed and will be uploaded over the next few months.

Acknowledgements
The ongoing creation, maintenance and monitoring of these trials is made possible due to the ongoing participation of the Focus orchard growers across Australia and the FLAs who support them to make it happen. The Community Orchard Groups (COG) also play an important role in identifying possible orchards and trial ideas and helping make them happen. Thank you to Paul James (SA) and Susie Murphy-White (WA) for their input into preparing the information necessary to make these reports available to APA and all the growers who have allowed these trials to be undertaken on their properties.

References