Focus Orchard and Trial Dec 2018 Update

Prepared by Craig Hornblow and Dean Rainham (AgFirst)

AgFirst would like to acknowledge the local FLAs who help prepare the data: Sophie Folder in Tasmania and Camilla Humphries in Southern Victoria.

We’re really excited about being involved with the Focus Orchards we have in Southern Victoria and Tasmania in the next few years. Both are looking to overcome perceived future challenges with maximising new plantings performance and optimising fruit quality to their customer.

With each Focus Orchard we focus on 4-6 blocks recording production forecasts, history and a wide range on production metrics. The data from all monitored Focus Orchard blocks is available to view and follow through the online portal Orchardnet. To view this data, go to

https://www.hortwatch.com/orchardnet/login.php

User name: Focus
Password: Focus

Observational trials are also undertaken (not exclusively on the Focus Orchards) endeavouring to increase knowledge and understanding, this year these are strongly focused on fruit quality.

Montagues – Narre Warren (Southern Victoria Focus Orchard)

Narre Warren orchard is long established orchard and the monitor blocks chosen are a mix of old and new, Gala, Granny, Pink Lady and Smitten™.

Key goals for the orchard are to:

- Increase precision with setting crop loads and fruit size
- Improve packouts – specifically minimise pit blotch and stem splits
- Fill the allotted space of young orchards quickly

The first block of note is the Buckeye Gala planted in 2005 at 3600 trees per hectare. It is a formally trained canopy with horizontal branches (Fig 1). Currently cropping at 75-78 t/ha, well above industry average. This is an early planting of an “Auvil” style formal system with limbs further apart than we would now but still a great block.

The challenges, as with a number of older Gala blocks is to maintain fruit size and good fruit distribution throughout the canopy.
With an eye to future challenges, and a goal to have an orchard that is simpler to manage, labour efficient, high yielding and robot ready, has lead Montagues to plant a higher density V system with vertical rather than horizontal fruit limbs. The new Smitten block still has a structure of SNAP (simple, narrow, accessible and productive) but has higher density vertical structure.

The impressive new planting, J1&2 is a block of Smitten planted at 5900 trees per hectare. The block is planted on a V trellis with twin stem trees so there are 11,800 stems per hectare, 40 cm apart on each side of the trellis. In contrast to the traditional Buckeye block, the new Smitten block will be trained with vertical branches with simple fruiting structures. The need to maximise the canopy height but not allow much vigour on any fruit laterals, has created discussion around heading cuts, summer pruning spurs and early use of Regalis™ in the lower part of the tree.
The “pineapple” shaped leader shoot tip (Fig 2) in most of the Smitten™ trees was problematic, apical dominance is lost, and multiple stems will shoot away. To re-establish apical dominance and therefore the leader, heading back to the first bud under the “pineapple” is the simplest solution. The likely cause was a water check later in the growing cycle which slowed growth. Ensure water is not limiting to young trees.

*Follow the comparison and progress on Orchardnet.*
Figure 3: J1 Smitten -11900 stems per hectare: At 40cm between stems its important maintain simple fruit units
Hansen Orchards (Tasmania Focus Orchard)

Hansen Orchards have always had a strong focus on fruit quality and their goals within the focus orchard reflect that;

- Understand crop load influence on Envy™ fruit quality
- More fruit picked in the first pick of Rosy Glow
- Vigour management in Jazz™. Decrease in older blocks, fill canopy in young blocks

Crop load influence on Envy fruit quality will be completed with a demonstration trial completed by Sophie Folder, the Tasmania front line advisor (FLA). This month the trees will be thinned to their final crop loads (low medium and high - 6, 8, and 12 fruit per cm² of TCA) with a report completed post-harvest and available on the Focus Orchards website.

To increase the volume of first pick Rosy Glow (Fig 4) will require a focus on improving fruit colour. The key management inputs will be to manage the nutritional balance (N:K ratio), achieve optimum crop load and good vigour control.

Fig 4: B31 Rosy Glow - Ryan, Sophie and Renee completing initial metric measurements
Both Focus Orchards have young trees and are wanting to maximise growth. Weekly monitoring of shoot growth allows feedback on the impact of the climate and inputs (water, nutrition etc.) on tree growth. This monitoring gives an early lead on when growth is slowing and drive confidence in strategies that maintain and increase growth.

- Monitor 20 Shoots weekly in a block recording the different stages of growth from active, slowing and terminated growth. Compare growth rates and the ratio between shoot types.

Keep an eye on all Focus Orchard block progress through OrchardNet and demonstration trial updates on the APAL website.

APAL’s Future Orchards® program is funded by Hort Innovation using the apple and pear R&D levy and funds from the Australian Government, and is delivered in partnership with AgFirst.