

# Grower case study — AP15005 Delivery of apple and pear Future Orchards extension program

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| <b>Grower</b>         | Bernhard Hall  |
| <b>Property</b>       | Bonny Glen Fruits, Canobolas Road, Orange, NSW.                      |
| <b>Planted area</b>   | 40 hectares  |
| <b>Varieties</b>      | Granny Smith, Red Delicious, Pink Lady, Royal Gala, Fuji, and Kanzi. |
| <b>Main rootstock</b> | 106, M26, M9, 102 and Bud9.  |
| <b>Sales channels</b> | Grow pack and market on farm, and pack and market for other growers  |

## What was the research about

Between October 2015 and April 2021, *AP15005 Delivery of apple and pear Future Orchards extension program* (delivered by APAL and AgFirst) worked to increase industry adoption of new innovations and best practices through the delivery of the apple and pear industry's Future Orchards® technology-transfer program. Running since 2006, Future Orchards has sought to increase industry knowledge of best practice and new innovations, and thereby accelerate the adoption of innovation and technology in apple and pear businesses.

## What was your involvement in Future Orchards?

Barnard Hall's property near Orange was the regional Focus Orchard for in 2017. This involved hosting Orchard Walks and conducting applied trials. Bernard recognised the value in participating in the Future Orchards program to gain exposure to new innovations and support continued improvements in their orchard operations, "I still want to be in the game and pass it on to my kids if they want. Future Orchards is a great tool to have", said Bernard.

## What innovations or trials were implemented from participation in Future Orchards?

As part of the Future Orchards program, applied trials were undertaken on the property looking at local issues and challenges and complimenting the work being done as part of the ongoing orchard development strategy.

Root pruning trials were undertaken to try and take some of the vigour out of some of the trees, and some girdling. "We were trying to focus on record keeping so we could measure crop load against tree size (trunk and limbs), which was quite informative".

Real time irrigation monitoring. Continuous soil moisture monitoring was trialled to see if this supported more effective water use, including the potential for water savings or improved fruit production. Bernard felt that the total amount of water that he applied did not really change with the water monitoring, but due to the real-time information he changed his application technique and was putting on smaller amounts on a more frequent time scale.

Pruning and tying down trees and limbs was another trial to help manage tree growth and productivity. "We wanted to try to get them into a cropping phase rather than growth where they were burning through nitrogen and calcium, so putting it into the fruit rather than the tree. From that we got a better understanding of how to treat new plantings on new rootstocks. Instead of cutting them back to the trunk we now use a toilet seat cut".

Tree density was also a key focus area in the ongoing development of the orchard. "We went from 4.2 metre row spaces to 3.5-3.6 metre row spaces. And instead of 2 metres apart we put them 1 metre or less. Then once we had the height we took the lower limbs off to get the frame right".

## What were the primary factors contributing to the decision to participate in Future Orchards and undertake the trials?

While the industry has seen strong yield growth since the Future Orchards program began in 2006, that was not the main focus for Bernard. "We were getting the tonnage, so we wanted to focus on lifting the packout and consistency" he said. "The lessons learnt from the trials and being involved with the Future Orchards program certainly has helped".

Bernard also recognises that innovation is an ongoing process, "you're always learning new techniques so you always have to try new things to improve and stay with the times" he said. "Who would have thought that you'd hardly be able

to sell a fuji now. They were quite fashionable a few years ago, but now I've pushed out 6-7 ha and grafted over 2 ha".

### What worked well?

Bernard found the Future Orchards program quite valuable. "There is a definite advantage in participating in these types of programs, being exposed to guys that are trying to improve yield and packout. It invigorates people who want to get going. There is nothing better than being at the top of your game. It gives you a shot in the arm to be seeing the result".

The practical approach of the Future Orchards program is something that Bernard felt was important. "There are some great trials that you can have a look at relating to different aspects of the business, and see what is being done in the industry. The program gives us a better understanding of what we need to be doing to have a productive orchard".

The interaction with the Future Orchard technical delivery partners, Ag First, was another area that Bernard felt was valuable. "The Ag First team were pretty good guys, we sat down with them to do some number crunching on tonnage which was quite in-depth".

### What were the challenges?

Bernard identified labour as a key challenge not only in general orchard operations, but particularly when implementing and trialling new innovations: "Unless you have a full-time manager it takes a lot of effort to get staff skilled up into the new practices. Staffing is definitely one of the key challenges in practice change. And that's if you can get labour in first place".

Similarly, as orchard costs and fruit prices drive business sustainability, they have a strong influence on investment decision making and confidence. "It all comes back to money. If we don't have the prices then there is no point investing. The industry needs to find a way to make more profit. Australia will never be a big export market. There are so many places that grow apples. Other countries are becoming as productive as Australia but with lower costs so it's a tough market. Our wages and chemicals and fuel costs are almost double anyone else".

### Do you have plans for further system changes or trials going forward?

Platforms for mechanization look interesting. You do get labour savings, but the systems aren't cheap, so they certainly don't seem like they would be cheaper than labour, but perhaps you won't get the bruising and maybe you can colour pick better.

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