



## Goulburn Valley growers aim high with advanced fertigation system

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INVESTMENT in a sophisticated fertigation system is enabling Turnbull Bros Orchards Pty Ltd to target high fruit production and quality at its Goulburn Valley enterprise.

Located at Ardmona in Victoria, the Turnbull family is aiming for consistent 80-tonne per hectare yields and minimum 80 per cent class 1 pack-out, an enormous jump from current 55t/ha yields and 60pc pack-out with their Cripps Pink and Rosy Glow apples.

Brothers Alex, Philip and Chris are the fifth generation on the 1892-established orchard, taking over from parents Ross and Daphne. They grow apples, pears, peaches, cherries and nectarines, with 130ha of the 220ha property currently under orchard production, excluding young trees.

One of the keys to their move to the new higher production system has been the use of high quality water soluble fertilisers through a specialist, automatically controlled drip irrigation system.

Prior to this the family was applying nutrients through their irrigation and had previously broadcast fertilisers.

"We fertilised three times a year by dumping it in the irrigation pits and then sucking it through a pump in five seconds without knowing that it was getting spread through the block evenly," Alex said.



**Haifa Australia Managing Director Trevor Dennis and Goulburn Valley fruitgrower Alex Turnbull assess tree growth on one of the new production blocks on the Turnbull family's Ardmona orchard in Victoria.**

"We used to put 150 litres of UAN in the irrigation in one hit two or three times a year. We are now fertigating five days out of a week."

While the Turnbuls are not yet saving money on fertilisers per hectare through their new fertigation system, they recognise they are getting much better use out of the fertiliser applied.

"We are using much more of the fertiliser that we are paying for. With

broadcasting you know you are losing a significant amount," Alex said.

"We are now pulsing so often – every four hours while it is hot – and so we are able to spread the fertiliser application out over a series of waterings. And we are putting it right where we need it around the root zone.

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# Pioneering the Future

"We are applying 25-35 kilograms of fertiliser a week spread over 10 applications of water. We are also watering at times when we are not fertigating.

"We are fertilising a lot because we are pushing the hell out of the trees, but we will slow this down.

"We hope to see with this efficient system that we will be able to reduce the amount of fertiliser we need to use. It is about applying less, more often – applying a little bit all the time to optimise fruit size and colour, but being careful not to over-invigorate the trees."

The Turnbolls conduct soil and leaf analysis two to three times a year to assist nutritional decisions and they use many different combinations of fertilisers, including high quality water soluble products from Haifa.

"We particularly use the Haifa Multi-K prills potassium nitrate and Multi-Cal calcium nitrate," Alex said.

"We believe the quality of the Haifa fertilisers is very good.

"The use of the potassium product definitely shows up in the quality of the fruit."

The Turnbull's new Netafim drip irrigation system is automatically controlled by the company's NMC SingleNet unit.

This also uses Netafim's FertiKit fertiliser injection system for total nutrient application control.

Alex said four new production blocks at the Ardmona orchard, comprising 15ha, were now being fed via the FertiKit and drip irrigation, while the drip system also had been installed on two existing blocks. An existing mini jet system is watering other areas.

"We are changing over to drip irrigation. We will go drip with any new plantings and wherever we have the ability to do it."

"We like the low output drip line in terms of getting water use efficiencies. We use a pulse irrigation method to reduce soil compaction, improve capillary wetting and to achieve a



**Trevor and Netafim Agronomist Sam Birrell inspect the drip irrigation system on one of the new production blocks on the Turnbull family's Ardmona orchard in Victoria.**

continued supply of water to the tree – less water, more often.

"We also plan to have overhead cooling and netting to improve fruit colour."

The Netafim drip and NMC SingleNet system is achieving significant water savings.

"We estimate that we are saving 45-50 per cent of our usual water application with the new system on the four new blocks. And together with the use of straw mulch, we are saving about 70pc," Alex said.

"We would normally be watering for 46 hours a week, whereas with the new system we are doing 14 hours a week."

He said the NMC SingleNet automation unit had improved irrigation management.

"There is less involved in terms of management by an irrigator. Instead of paying someone to turn taps on and off and switch channels, they are spending more time on crucial things."

"The system waters from Saturday through to Friday night with low rates and the irrigator puts the whole schedule in on the Friday afternoon and he only needs to check that it is turned on and the fertiliser is going in.

"We check the filters every two weeks and we flush the system four times a year."

Netafim Agronomist Sam Birrell said the full NMC SingleNet, drip and FertiKit system offered a new level of irrigation and nutrition control to orchardists and was now being adopted by an increasing number of growers.

"Fertiliser injection is crucial for growing high quality fruit and drip irrigation works well in all systems to reduce water requirements and better control moisture in the profile," Sam said.