

## CASE STUDY: ROSS MUTTON

# Irrigating avocados

***When most people think of irrigation, they picture dairying. Yet irrigation supports a wide range of land activities including horticulture in the tropical north. Northland avocado grower Ross Mutton talks to Janine Holland about the watering needs of his crop.***

Having grown up in a family of orchardists, former Bay of Plenty resident Ross Mutton freely admits he loves avocados. Just as well, as Ross and wife Lesley, have spent the past 12 years growing the green fruit at their Northland property.

When the couple first purchased the land with partners at Houhora (46km north of Kaitaia) it came with 2.85 ha of reproducing avocados and another hectare of baby trees on a 10 hectare block. To start with, Lesley's parents looked after the day to day needs of the operation as he was still working in the Bay of Plenty.

"I used to come up for the weekends and run the place on remote control."

After a few years of variable results, Ross and Lesley added on two green-fields developments, the second replacing a pine plantation.

"It was a very expensive block to develop. We were doing that when we realised the existing orchard was not recoverable. So we've been progressively re-contouring, pan breaking and planting new root stock since then."

As part of the modernisation process, the Mutton's watering systems were put under the spotlight.

With soils mainly composed of sand and fine sand, regular water is critical to avocado success.

"You can't grow avocados up here without irrigation."

When the original farm block was split up, Ross's neighbour inherited the main bore and their land came with a smaller bore "providing only eight cubic metres of water to play with". Six years ago, when the couple moved permanently to Northland they leased another ten hectares with a high pressure supply which provided a useful comparison.

"We had worked out we weren't quite where we needed to be with our water and it gave us an insight into what we needed to do to bring ourselves up to speed. Bigger sprinklers and as near to 100% root coverage as we could get."

With low water pressure, the decision was made to install a brand new pump.

"We wouldn't pump any more water but the pressure would be better. Before we had barely enough pressure to drive our sprinklers and low coverage as we were only watering 30% of the root area and over-watering that bit. Other parts of the root area were drying up and not functioning. We needed to get serious about our irrigation."

The couple went from eight irrigation blocks (that took eight nights to get around) where stress point was often reached in eight days, to an expanded area with higher pressure.

Unfortunately the project didn't proceed smoothly. Eight months after the new pump was installed, the bore collapsed.

"It was a bit of a disaster and we were forced to start from scratch. A new site was chosen closer to the power source which has actually made life a lot simpler."

"We're now in a situation where we can easily water three hectares at a time and have close to five times the volume of water so we can handle the big sprinklers. Our theory now is we can water the whole property in one night"

What the couple have discovered however is that with more pressure, they are watering more regularly but reducing water applied.

"We've been cutting back on water yet our production is getting better. The key is when you water the whole root area, you don't need to water for too long."

Ross is now looking into introducing soil moisture monitoring technology. While it's always been evident when he needs to start irrigating, "it's now about when you turn it off". Over-watering is a common problem for avocado growers "as there's a lot of variability within our soil types". Some of the techniques he uses to combat this are varying sprinkler sizes within irrigation blocks, soil mapping and "constantly tailoring what our sprinklers deliver".

It's been a learning curve he says but guidance and support from NZ Avocado, particularly through their Primary Growth Partnership (PGP) programme Tree decline working group, has helped.

The focus now is on further refining systems to ensure as much of the root systems are irrigated as possible while making the most efficient use of water.

"We used to consider that a mature avocado tree needed 1000 litres a week, now 600 litres a week is more typical. But here we're using 180 litres or less a week and seeing benefits rather than detriments. Little and often is where I'm going and it seems to be working. It's something that could be looked at more across the industry."

A study comparing avocado industry returns to dairy industry returns in the district has shown the green fruit is currently a better performer.

"Our avocados are five times more profitable than dairying up here. I'm hoping we're pretty close to where we need to be in terms of irrigation on the home block. There's a little bit of redevelopment still to be done but I'd like to think we can now sit back and enjoy being orchardists."

