

## CASE STUDY: MR APPLE

# Export apples reliant on water

***New Zealand is the only place in the world where apples are grown in a truly oceanic island environment. Free of many of the pests and diseases prevalent in other apple-producing countries, Hawke's Bay is up there as a premier apple growing region. Janine Holland learns about the role water plays in the success of this export crop.***

Warm summers, bracing winter frosts and access to good quality and quantity of water mean that apples ripen slowly here, require minimum human intervention, and develop a naturally crisp texture and intense flavour.

Tony Waites works as an orchard manager on the Blyth Orchard property for Mr Apple, New Zealand's largest vertically integrated grower, packer and exporter of apples. Exporting one quarter of New Zealand's apple harvest, the company operates 14 orchard management groups, covering 53 Global-Gap accredited orchards across 1,200 hectares of prime Hawke's Bay land.

Over the past five years, the company has spent \$8 million re-grafting 180 hectares of orchards to new high colour varieties (dominated by deep red) to provide customers with a greater choice of apples.



Blyth Orchard Manager Tony Waites (left) with Assistant Manager Steve McKain.

Mr Apple has also invested over \$1.5 million in 800 kilometres of reflective foil in order to grow more high profit, high colour varieties ensuring higher pack outs and consistent availability.

With three pack houses, numerous cool store sites, a sales and logistics team and head office in Hastings, the company employs 20 permanent staff which increases to 120 through the harvest period.

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Water is central to their business and part of Tony's role at Blyth Orchard is to ensure that their irrigation works like clockwork in his patch.

Managing Mr Apple's Blyth orchard, Tony oversees 101 hectares of planted trees. Eleven varieties are grown on site (Braeburn, Diva, Royal Gala, Granny Smith, Jazz, Pink Lady, NZ Queen, NZ Rose, Red Delicious, Regala and Smitten). In the 2015 year 317,000 export cartons were sent offshore from Blyth Orchard, this year Blyth Orchard expects to grow that to 358,000 cartons.

One hundred percent of the orchard is under-tree irrigation. Their drip-micro system starts operating in spring, says Tony.

"When the trees are in blossom and at the young fruitlet stage, and the ground surface is dry, water is run throughout the day to aid a slower heat release from the ground at night. Only small volumes of water are applied (3–5mls) but the effect is significant, reducing the impact of frosts and helping to establish the crop."

Then during the summer months, when soil moisture drops away, irrigation is essential for tree health and crop volume and quality.

It's a big job managing the orchard's watering needs with five individual irrigation systems working off six wells and pumps. The five fully computerised systems vary in size from 8 litres per second to 25 litres per second and can deliver 2.8mm of irrigation depth per hour.

## CASE STUDY: MR APPLE (CONTINUED)

“We generally apply four to five hours worth of irrigation per block (11–12mm) per application and it takes us four to five days to get round all the irrigation stations,” says Tony.

The orchard boasts 75 individual irrigation stations (valves), which allow different watering rates to be delivered to the 11 varieties they grow.

To further refine application, soil moisture monitoring ensures water is applied only when it’s needed, says Tony.

“Over the property there are 15 neutron probe sites that measure soil moisture at 100mm intervals down to a depth of 1.2m. These are read on a weekly basis and from that information we calculate how much water goes where and how often. If the sub soil is drying out we need larger amounts of water applied or if the sub soil is okay but the surface is dry then a lesser amount of water is applied.”

Tony’s irrigation strategy sees him regularly comparing the health of the trees versus fruit growth.

“I monitor the various stages of tree growth and fruit development and have strategies that cater for tree growth versus fruit growth. The sprinklers we use generally deliver 80% of the water to the root zone of the tree, and 20% of our water is used to keep the grass strip between the tree rows green, without creating excessive grass growth. If the grass dries out, it can cause severe sunburn to the apples, hence dropping the export pack out.”

He’s full of praise for what is possible today with irrigation systems.

“The technology available today is fantastic compared to what was readily available twenty years ago. The computerised systems, the neutron probes, wireless valves, various apps available all allow growers and farmers to manage their businesses to a very high, accurate standard. This helps you maximising their irrigation potential without stressing the natural resource.”

Significant investment has gone into the orchard’s watering systems so for now further irrigation development isn’t warranted.

“In the near future I am not altering anything on the Blyth Orchard property, but the Mr Apple business is continuing to develop the other production sites they have. All new plantings have professionally designed irrigation systems to cater for the long term benefit of the crop and environment.”



**Blyth Orchard Assistant Manager Steve McKain  
with Irrigation Assistant Kerry Jane.**

Water – its availability and quality – is a key concern for Tony and he agrees careful management is needed.

“We need to think carefully about the on-going overall management of our natural resource, so we can expand to maximise the opportunities, without ruining or depleting what the natural environment has to offer. The natural resources should be used indirectly for financial benefit not directly. Selling water directly creates employment for only a few and adds only small value to a region. Nurturing agriculture, horticulture and viticulture where water is used has many ongoing benefits for the total community.”