

# HORTICULTURE

## A new way to size fruit

ELOISE MARTYN

Leading-edge, mobile fruit-sizing technology called Spectre, developed by Hectre, a New Zealand software and development company based in Auckland, was developed in response to industry demand to assist with the stress and supply chain issues that can be caused by a lack of early and reliable size sampling data in the fruit industry.

Hectre has programmed a computer to detect the size and colour of apples. Major factors driving the development of this technology is the need for more accurate data and reduced labour needs in an industry struggling with labour shortages.

Spectre's smart technology works simply and quickly. A photo, taken from an everyday iPad or phone, of the top layer of a bin of apples, cherries or other fruit, will return detailed information in the form of a size distribution graph in seconds.

Other information provided is colour and predicted weight – all from a photo. This information can be used to make decisions regarding the picking, pack line, packaging, storage and sales of the fruit.

A bin of 150 apples is scanned and sized in just a few seconds. The technology is proving to be

popular as it's easy to use and produces fast and accurate results to help optimise the supply chain. Spectre has been trialled on various apple orchards on the Waimea Plains and in Hope over the past two years.



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**Matty Blomfeld**

“The people and teams we have worked with in Tasman have been awesome. They have been honest and open and are great operators. Our technology is exported around the world to the US and Chile, which is a credit to the Tasman growers who have worked with us,” co-founder and CEO of Hectre, Matty Blomfeld, explains.

“It can be beneficial for the Tasman growers and packers regarding supply chain logistics. It takes away the guess work and manu-

al sampling, it provides a much larger sample size which enables packing and selling with confidence.”

When trying to optimise the fruit supply chain many marketers are agreeing on export contracts based on last year's crops, which is not the same as the current season. Having the incorrect information can increase problems such as increased costs due to repack or changing pack lines on the graders, wasted fruit (at the grower's expense) and wasted revenue opportunities for the grower.

Without correct information growers and marketers also run the risk of impacting relationships with buyers.

“All export markets have specific expectations around what they are after and there is always variation between growers, different blocks, different colours and characteristics. It's really hard for anyone to keep tabs on that, let alone make export decisions. Spectre brings automation to the supply chain and clarity on the fruit coming through as opposed to small, manual samples that are not representative of the crop.”

The technology can help orchard owners to sell in a more competitive market.

“Buyers want accurate data; they want to know expected yields and



A photo, taken from an everyday iPad or phone, of the top layer of a bin of apples, cherries or other fruit, will return detailed information in the form of a size distribution graph in seconds. *Image: Supplied.*

metrics, our technology provides this easily and quickly. If your ambition is to sell your operation at some point then it's ideal to get organised from a data point of view.”

In the US, Spectre has been used over the past two years at scale. The US and other countries such as Chile have an advantage of trucks that are open top, making the fruit easy to see with computer vision on a large scale.

Trucks simply drive under a camera and the fruit is detected and analysed.

Spectre was initially designed for apple growers and packers, however, Spectre now has models for lemons, oranges, mandarins,

cherries and, more recently, pears. Some trial technology is currently being used during the cherry harvest currently underway in Central Otago. For six years apple growers across Hope, Waimea Plains, Motueka and Riwaka have been using Hectre's labour management tool that tracks yield and bins, records traceability of each bin picked as well as performance and cost of staff and the overall operation.

Matty says that since 2016 all involved have learnt a lot. “Every grower seems to do it differently and that's a challenge when dealing with technology, but the dealings we have had with owners and growers have been fantastic.”

## Great to see so many of you in person

**NADINE TUNLEY**  
HortNZ

Along with others from HortNZ I have visited seven different growing regions in the past few weeks and have talked with more than 200 growers and others in our industry.

At the same time, Michelle Sands has been talking to grower groups about all the changes that have been proposed as part of replacing the Resource Management Act (RMA).

It was heartening to see so many growers and enable them to connect with each other, especially in some of the smaller regions where (due to Covid) there have not been many meetings for a few years.

The get-togethers were also an opportunity for you to hear from HortNZ, as well as the Ministry

of Business, Innovation and Employment (MBIE) about the Recognised Seasonal Employer (RSE) scheme policy review. MBIE is wanting to revisit the regions in late February to early March, to share what they have captured from their first round of visits and seek further grower feedback on MBIE's proposed policy changes for the RSE scheme.

We are acutely aware that this timing is terrible for several of our regions, but this is an important piece of policy for many of you. Unfortunately, we cannot control the timing for these visits. In terms of the new pieces of legislation to replace the RMA, HortNZ and product groups have written to the Environment Select Committee to ask members not to be swayed by political pressure and extend the consultation ending currently on 30 January 2023

to ending on 13 March 2023. I will let you know how we get on. ‘Eat more broccoli and save the planet’

This headline caught my attention late last month. The Business Desk story was about ‘Growing for Good research conducted as part of the government's National Science Challenges, which concluded that ‘New Zealand should be growing more grains and vegetables while keeping its primary export sector intact, if it is to meet emissions and water quality targets.’

The research looked at two land use scenarios. One that optimised land use for greenhouse

gas reductions and the other, that optimised land use for freshwater quality improvement.

The research found that if reducing emissions was the main target, farm profits would increase by \$89 million ‘but going all out for water quality would lead to a net \$526 million drop in profit’.

At the same time, a related study concluded that ‘if New Zealand adopted a healthier diet, there would be large gains in health and health-care savings.

In other words, these two pieces of research support what we all know and have been saying for ages: that our industry holds the

key to New Zealand achieving environmental, health and economic outcomes!

So, with that in mind, why is it so hard to grow sustainably now, and why is government policy so misaligned, fragmented and contradictory?

Government policy must align and reflect the necessity of food production and export in New Zealand, to feed our nation, and the Pacific and in so doing, improve health, and achieve our economic and environmental ambitions. Individual pieces of policy must reflect an interconnection with other policies. For example, the world's transition to lower emissions should mean that New Zealand is able to export more of its low emission fruit and vegetables, not be making it harder for growers to grow sustainably.

