



1 Robotics Plus UGV, 2 Robotics Plus Āporo Apple Packer, 3 Apple Sorter, 4 GreenTech WeedSpider

# Automating the future

*Accessible horticulture automation is set to solve local challenges by going global.*

Supplied by Callaghan Innovation

## What is stopping New Zealand from becoming a world leader in horticultural automation technology?

Answering that question, then building the strategy, connections and services to overcome them is behind a new industry-wide initiative that is bringing growers, researchers and commercialising companies together. The Horticultural Automation Initiative is led by the government's innovation agency Callaghan Innovation.

Now in its early discovery phase, the initiative aims to facilitate better collaboration between New Zealand's researchers, inventors, and commercial operators in horticultural automation and robotics. The goal is to build a strong horticultural automation industry that will become a key economic contributor to New Zealand's Covid-19 recovery by benefiting local growers while addressing global challenges.

In the Agritech Industry Transformation Plan, released in July this year, horticultural automation was identified as one of several key projects with the opportunity to make a significant impact on the industry in a short period of time.

Simon Yarrow, group manager agritech for Callaghan Innovation, says New Zealand already has many of the building blocks in place to build world-leading horticultural automation technology.

"This country already has a strong reputation for the quality of our high-value food products. What is less known internationally is some of the technology that sits behind those products, from breeding, genetics and growing systems to automated systems that support fast, efficient harvesting, sorting, packing, monitoring and transportation.

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**Table 1:** Opportunity for this initiative to create more high-value jobs in the horticulture sector



Source:  
\* [https://www.payscale.com/research/NZ/Job=Farm\\_Worker/Salary](https://www.payscale.com/research/NZ/Job=Farm_Worker/Salary)  
\*\* TIN Report – NZ Agritech Insights report 2020

“The role of the Horticulture Automation Initiative is to work with and support those who already have the expertise and technical capability, and turn it into an industry that benefits local growers and opens up new international markets by solving global problems,” Simon explains.

While sustainability and yield security present challenges for growers, the largest problem they face worldwide is a labour shortage – only compounded by the closure of international borders in 2020. This is where increased automation can make a huge impact on growers’ efficiency and their bottom line.

There are a number of key players from New Zealand which already have strong global successes in this area. Waikato-based BBC Technologies exports automated packing and sorting machines for small soft fruits such as berries, and is about to build a new R&D centre. Robotics Plus builds automated apple packers and is developing several unmanned ground vehicles for horticultural use. It is also working with Waikato University on an automated asparagus harvester, recently tested by growers in the United States. Manawatu’s GreenTech supplies US growers with seeding and harvesting technologies and is developing a weeding machine.

Simon says the Horticulture Automation Initiative wants to work with the key players such as these, to spread the capability and build a fully functioning agritech automation ecosystem. Some of the local benefits of that would include higher-value jobs (see Table 1, above) and increased export revenue. For New Zealand growers the benefits of greater collaboration should mean better accessibility to technology that is currently often too expensive to be viable.

“Growers are the users, investors, testers and enablers in tech, but often don’t want to be – or don’t have capacity to be – the commercial owners.” On the other hand, he says, researchers need to work with growers and the technology companies to understand the problems they’re trying to solve, and how to commercialise the solutions.

“Technology is evolving fast and automation is expensive to develop. There is an opportunity to get a better bang for our local R&D dollars if growers, researchers and commercial hi-tech companies come together. That will be a key function of the Horticulture Automation Initiative.”



Simon Yarrow

Growers are represented in the Initiative by members of HortNZ, Zespri, and T & G Global. Wider industry workshops and other forms of engagement are being planned.

The Initiative is still in its early formative stage, with a business case being developed by a core group of growers, researchers and commercialising companies with Callaghan Innovation, but optimism about the initiative’s potential impact is high.

“If we can grow and scale capability in agritech then we also fuel greater productivity, solve challenging labour issues, strengthen hi-tech exports whilst giving New Zealand’s primary industry a hi-tech productivity boost,” Simon Yarrow says. ●



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