MEDIA RELEASE

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Groundbreaking robots can help growers pollinate

Two Australian-made robots have uncovered the best locations to pollinate in orchards to get maximum fruit output in a new study commissioned by Horticulture Innovation Australia (Hort Innovation).

Delivered by the University of Sydney's Australian Centre for Field Robotics, the findings came from a four-year study which included the use of two 1.5m-high unmanned vehicles.

The robots – trialled on almond, apple, lychee, custard apple, avocado and banana farms – worked concurrently on either side of tree rows using a series of cameras, lasers and software to create a series of algorithms which led to the identification of the fruit.

Hort Innovation Chief Executive John Lloyd said data supplied by the robots showed patterns in yield variations consistent with a lack of pollination. He said at a test site, a grower planted more pollination trees in those areas and is already seeing positive results.

"This is a very exciting finding as this technology has the ability to help growers identify issues such as a lack of pollination and address them quickly," he said. "By monitoring the data patterns produced by these robots growers can effectively help ensure the best yield possible."

Mr Lloyd said the robots also showed the capacity to identify individual pieces of fruit, and nuts – making way for fully autonomous tree fruit and nut picking. "This study has provided a real window into a not too distant future where labour hire shortages and associated costs no longer need to be key concerns for tree crop growers," he said.

"Ultimately, this technology will enable growers to save time and money, allowing growers to get their produce to consumers more efficiently while increasing their overall farm gate returns."

Mr Lloyd said the robots were able to identify the fruit load on the trees with an accuracy rating of between 60 to 96 per cent, depending on the commodity and the amount of leaf coverage and sunlight.

"The study showed apples and mangoes that were visible to the human eye were the easiest for the technology to detect, with an accuracy rating of 92 and 96 per cent respectively. This suggests that the technology for these two commodities is the closest to development," he said.

He said the next step is to use these findings to inform further development of robotics systems that autonomously harvest, and also have the potential to undertake tasks such as pest management.

Horticulture Innovation Australia is currently investing more than $15 million in autonomous-based projects on behalf of the nation's horticulture industries, with a host more expected to come online in the near future.

Horticulture Innovation Australia delivers more than $100 million in research, development and marketing activities across the horticulture industry each year with funding from the Australian Government, grower levies and other sources.

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