

Opportunities to improve labour use efficiency through automation and improved management practices

Ky Snyder, Project lead & Scott Needham, Partner: Growth Drivers TGD

Rubus growers in Australia face numerous challenges when it comes to optimising their labour use and ensuring the sustainability of their operations, but innovative solutions may be available sooner than you think.

Like many other fruit crops, managing labour costs is a key focus for Australian Rubus growers. However, the high perishability and fragility of Rubus berries makes labour and cost management a particularly challenging task.

To address this issue, an industry-led initiative funded by Hort Innovation's raspberry and blackberry fund and spearheaded by The Growth Drivers (TGD), has been working on discovering "opportunities to improve labour use efficiency through automation and improved management practices" (RB21003).

TGD helped growers articulate the complexity of the labour issues and the requirements of new technologies or processes to meet their needs. Project lead, Ky Snyder, says that together with a number of growers TGD were able to describe these labour issues and how they occur in five main contexts.

- Picking activities
- Non-picking activities
- Row and fruit quality assurance
- Crop presentation
- Cane selection

By understanding the jobs to be done in these stages of production, the TGD team were able to focus on assessing the success potential of new technology and process change options. The team assessed over 20 different technology options, and working closely with growers they were able to identify those options that were of the highest interest.

1. Data empowered resource planning and deployment:

A potential adaptation of the existing data capture and analysis tool, Bitwise, already available to raspberry and blackberry growers, to support resource deployment decisions for various on-field tasks e.g. crop presentation, sucker removal, and identifying pests and diseases.

2. Advanced recruitment assessment:

Utilising specialised assessment tools to evaluate physical attributes, hand-eye coordination, peripheral perception and psychological fit during the recruitment process can decrease hiring risks and accelerate the proficiency of new pickers, ultimately benefiting growers.

3. Computer vision quality assessment:

Innovative technology using machine learning algorithms and computer vision quality assurance enables farmers to quickly and accurately grade fruit in the field, reducing costs associated with manual grading, increasing throughput, minimising waste, and improving decision-making.

4. Autonomous collaborative robots (ACR):

Collaborative robots are increasingly being recognised as the future of agriculture in Australia. Offering improved efficiency and reduced labour costs by eliminating the need for farmhands to transport picked fruit and collect supplies, potentially saving up to 20% in labour costs across picking crews.

5. VR training & assessment:

Virtual Reality (VR) technology can recreate a wide range of horticultural scenarios, from identifying pests and diseases to pruning techniques and plant propagation. Using VR can allow workers to gain hands-on experience in a safe and controlled environment, in the off-season and even off-site.

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STRAWBERRIES



RASPBERRIES



BLUEBERRIES



BLACKBERRIES

Next Steps

The TGD team are working with growers and technology providers to put the options through their paces. This includes designing technology demonstrations, building business models, and delivering cost-benefit analyses and business cases.

“The benefits of this approach are that the team at TGD have the technical firepower as they are not affiliated with any one technology, allowing them to remain neutral and find the best possible solution to the problem from across the globe,” according to Snyder.

“We have found from working with a range of industries from horticulture to livestock, that companies also value our ability to balance the technical features of solutions with the business case required to make a decision to invest.”

“The upcoming tech delivered by The Growth Drivers has the ability to transform the horticultural industry. Burlington Berries is super excited to be playing a role in this and we can't wait to see what they deliver and the future impact it will have.” says Libby Sutherland from Tasmanian berry operation Burlington Berries.

To find out more or to register your interest in the project please

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