Harvest technology streamlines outcomes for berry producer

Henrietta Child, Chief Executive Officer, Agricultural Picking Technology

South Australia's Agricultural Picking Technology (APT) has collaborated with premium berry producer Perfection Berries to implement a harvest management system which captures and reports on all activities. The system helps managers track, analyse and improve crop outcomes at five berry farms across three sites in Queensland and Tasmania.

APT chief executive officer Henrietta Child said management system, AgPick, was initially designed to provide growers with better visibility and control over their harvest activities via hand-held Radio Frequency Identification (RFID) scanners. However, AgPick's capabilities had evolved to meet Perfection Berries' objectives to record all outdoor activities including seasonal picker payroll reconciliation, traceability, on-farm crop management costs and provide yield comparisons at a glance, she said.

"What we've discovered since AgPick was developed in 2017, is that producers want to look at more than picking outcomes. They want to move away from paper records and have the flexibility to access information easily and remotely via any device," she said.

"For Perfection Berries, live harvest information captured on RFID scanners is available to managers on any device at any point during the picking season – or throughout the year. Our solution is based on touch screens using android devices which are designed for outdoor use and conditions for data capture, supported by an online portal which can be accessed by any web device."

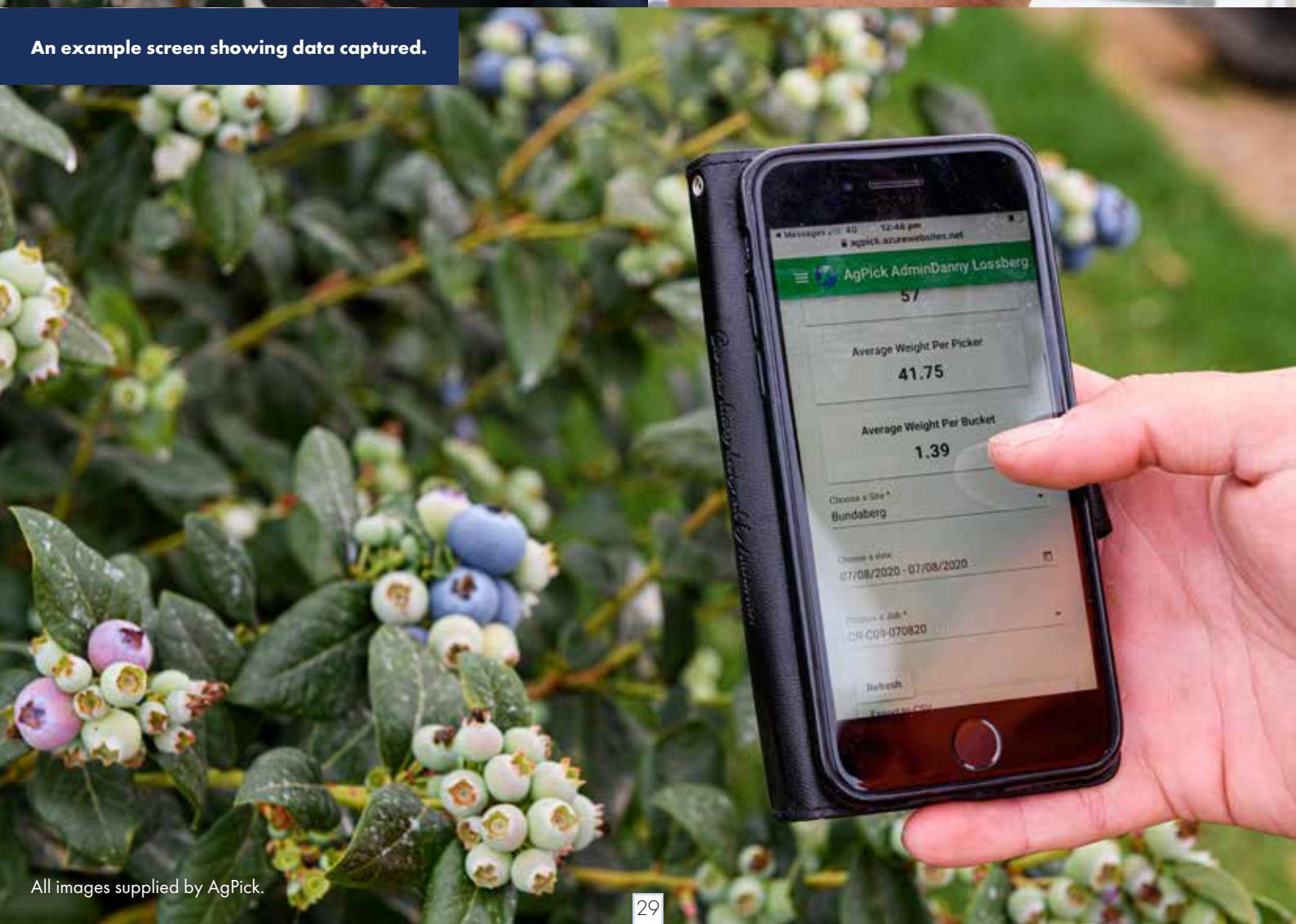
"The system supports flexible workflows so it has been configured for different berry lines. For example, raspberry punnets are not recorded in the same way as blueberry buckets. For raspberries, multiple workflows capture key data to record information ranging from grade variables (premium and second grade) and seasonal payroll differences such as piece-rates to hourly rates, depending on the time of year and volume to be picked. For blueberries, capturing weight direct from the scales is vital for efficient operation. AgPick also counts waste, as pickers are paid to pick waste and captures key information such as break times – paid and unpaid – for accurate payment," she said. "It also has the ability to switch from scanned units to key entry details of a worker's total pick, if required," she said.

Perfection Berries general manager Roger Turner said AgPick was implemented at the Caboolture, Queensland raspberry farms in 2018. Following further development, it was then rolled out at the blueberry farms at Bundaberg, Queensland and blueberry and raspberry farm at Riana, Tasmania, in 2019. "We've taken its development a step on from the original idea and smoothed out the processes. The previous paper-based system involved a lot of downstream information and administration effort. By moving the recording of this information into the field and, because of the auditing nature of the system, reports are accessible anytime, without the need for someone to collate the results. I'd estimate it paid for itself within 10 months," he said.

AgPick scanning a picker's ID.

AgPick accounting for blueberry weight at Perfection Berries.

An example screen showing data captured.



All images supplied by AgPick.

With the blueberry solution, workflow parameters are set to connect scanned results via Bluetooth® to scales set up in the field, and weights are automatically linked to a picker's identification card. It works quickly and logically to capture information without holding pickers up and it reduces human error.

"For harvest supervisors, it means using a scanner fitted with a SIM card and connected to the Telstra mobile network. If there's no connection, the system holds the data on the scanner until there is a signal – so there's no loss of information. Training is minimal and the only requirement is having access to a device with a screen," he said.

He said workflows set for raspberries recorded the movement of punnets to trays for QA checking and captured information for different grades and punnet sizes which, in turn, informed managers of varietal yield outcomes. Live data enabled managers to monitor a harvest's progress and make key decisions as required and meant managers did not have to drive around a farm to assess a harvest's progress, providing flexibility and time saving, he said.

Picker payroll integration

Mr Turner said the system was configured to recognise the use of contract labour hire providers, reflecting data with incoming invoices and accurately informing the payroll function. Ms Child said the system handled and record all associated labour costs as well as harvest management costs associated with a farm such as pruning, weeding, spraying and more.

"Information is calculated daily and compares costs spent on a block with yield from that block. Depending on the objectives, it can be sorted by block, product or size of operation.

AgPick operates on flexible workflows – being able to do different things in different settings – not a one-size-fits-all approach," she said.

"A lot of farms have a lot of spreadsheets. Today's growers are seeking simplicity in their technology solutions so they can focus on growing. This system provides a daily read-out, which is simple to analyse and can be edited.

Operational and labour costs can be separated which allows growers greater flexibility in reporting which has become more critical in terms of traceability processes."

Aiding picking movements during COVID-19

Mr Turner said AgPick technology had played an important role in the successful auditing of pickers during COVID-19 restrictions.

"We've been able to use the system's attendance component to compare who's had their temperature checked with our records. It's formed part of successful audits and accreditation to prove who's there. Integrity of data in this circumstance is vital."

AgPick was launched in 2017 by Ms Child and APT chief technology officer Tony Drake. Ms Child's experience is in the IT industry, implementing software and training, and mentoring early stage technology companies. Mr Drake's background is in developing software knowledge systems for the wine and beverage industry.

Key AgPick features:

- Easy-to-use, hand-held operation
- Ultra-High Frequency (UHF) option for high-powered, long-distance scanning of multiple vessels
- Near Field Communication (NFC) option for close-up scanning of single vessels
- A secure cloud-based solution which stores records for real-time or post-harvest analysis
- Picker to payroll integration

Agricultural Picking Technology (APT) was established in South Australia in 2017 in response to a need for harvesting efficiency and accountability in the horticultural sector. Its flagship product, AgPick, is at the forefront of global picking technologies.

For more information visit www.agpick.com