

# Improving Labour Use Efficiency in Rubus Production

*Insights from 'Opportunities to improve labour use efficiency through automation and improved management practices (RB21003)'*

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- Labour efficiency gains start with management and planning, not machinery
- There is no one-size-fits-all solution: match changes to your farm's scale, systems and risk appetite
- Data-driven decision-making is essential to improving productivity and justifying future investment

Labour remains the single largest cost and constraint facing Australia's raspberry and blackberry growers. As the Rubus industry has grown in both scale and value, its reliance on manual harvesting and labour-intensive production systems has intensified pressure on farm viability. The project 'Opportunities to improve labour use efficiency through automation and improved management practices (RB21003)' funded by Hort Innovation using the raspberry and blackberry research and development levy and contributions from the Australian Government, set out to tackle this challenge by identifying where meaningful gains can be made and how growers can realistically adopt solutions.

The project used a four-stage, industry-engaged approach:

- **Intent and scoping** – establishing project governance and objectives
- **Explore** – grower interviews, farm visits, surveys and time-and-motion studies
- **Validate** – solution ideation workshops, technology scans and grower validation
- **Deliver** – in-person workshops, solution assessment and final reporting

This approach ensured findings were grounded in real grower experience and validated by industry participants.

Rather than searching for a single technological fix, the project recognised a critical truth: labour challenges differ widely between farms. Factors such as scale, production system, region, ownership structure and risk appetite all shape how labour is used and what improvements are feasible. As a result, the project focused on understanding grower diversity and aligning solutions accordingly.

## Why labour efficiency matters

The Australian Rubus industry is heavily dependent on hand-picking to meet fresh market demand. Labour costs are influenced not only by wage rates, but also by picker efficiency, workforce retention, crop design, harvest timing, post-harvest handling and management capability. Small inefficiencies across these stages quickly compound into major cost pressures.

The project found that while many growers are open to innovation, adoption stalls when solutions are poorly matched to farm context, lack a clear return on investment, or require capabilities that farms don't currently have. Improving labour efficiency, therefore, is as much about better decision-making and management practices as it is about automation.

## A segmented approach to solutions

One of the project's most important contributions was the development of grower segments and behavioural archetypes. These profiles help explain why growers respond differently to the same challenge and why adoption of new practices varies across the industry.

Four broad grower segments were identified based on scale, ownership structure, crop diversity and technology use. Within these segments, six behavioural archetypes were developed, including growers who prioritise evidence before investing, those driven by technology and data, and those motivated by people, community or environmental outcomes.

Understanding these archetypes matters because solutions that work for one group may not suit another.

For example, growers with a low risk appetite are unlikely to invest in unproven automation but may readily adopt improved workforce planning tools if backed by strong data. Conversely, early technology adopters may be willing to trial new systems if they see a pathway to long-term productivity gains.

## Where the biggest opportunities lie

Through interviews, on-farm observation, time-and-motion studies and grower workshops, the project identified five key focus areas where labour efficiency gains are most achievable:

### Workforce composition and management

Retaining experienced workers delivers some of the greatest productivity gains available to growers. Reducing turnover, improving training, and better aligning roles with worker capability were consistently highlighted as high-impact, low-regret actions.

### Crop profiling and forecasting

Rubus crops often experience rapid increases in production over short periods. Poor visibility of these production curves leads to mismatches between labour supply and harvest demand. Improving crop profiling enables better workforce planning and reduces reactive decision-making.

### Harvest efficiency

Small changes in picking systems, fruit flow, tray handling and field layout can significantly affect picker output. The project emphasised the importance of measuring where time is lost during harvest and systematically addressing inefficiencies.

### Non-harvest labour

Activities outside harvest windows - such as maintenance, crop setup, pruning and packhouse operations - represent a substantial portion of total labour costs. These areas are often overlooked despite offering opportunities for process improvement and better scheduling.

### Crop design and waste reduction

Crop genetics, planting density and canopy design directly influence yield, picker speed and fruit quality. Poor alignment between crop design and labour capability increases waste and reduces overall efficiency.

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## Technology: promise with caveats

The project conducted a broad technology scan, assessing automation and digital tools currently available or emerging internationally. While there is genuine potential for technology to improve labour efficiency, the project found that most solutions are not yet “plug and play” for Australian Rubus farms.

Five priority solution pathways were identified for further development and investment, including:

1. data-driven workforce planning tools using crop analytics
2. improved recruitment and picker assessment methods
3. computer-vision systems for quality assessment
4. autonomous or collaborative robotics to reduce non-picking tasks
5. targeted trials of proven technologies matched to suitable grower segments

Crucially, the project emphasised that technology adoption must be accompanied by behaviour change, skills development and clear business cases. Without these, even technically sound solutions are unlikely to deliver real-world benefits.

## Practical outcomes for growers

The project does not prescribe a single roadmap for all growers. Instead, it provides a framework for making better-informed decisions, grounded in evidence and tailored to individual farm contexts. For many growers, the most immediate gains will come from:

- improving workforce retention and training
- better aligning labour to crop demand
- refining harvest systems and fruit flow
- using data to support planning rather than relying on intuition alone

More advanced automation and robotics may play a larger role over time, particularly as technologies mature and costs decline, but they should be viewed as part of a broader productivity strategy rather than a standalone fix.

Growers can read the full final report by visiting the Berries Australia Resource Library at [bit.ly/BA-RL](https://bit.ly/BA-RL) and searching for 'RB21003'

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