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SMARTER SYSTEMS, NOT HARDER WORK

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Using practical technology to ease pressure in production nurseries

INTRODUCTION

Production nurseries are operating in an environment of sustained pressure. Labour shortages, rising input costs, increasing regulatory requirements and heightened biosecurity expectations have combined to make day-to-day management more complex than it was even a few years ago. For many growers, the challenge is not a lack of ideas or ambition, but limited time and capacity to manage these pressures effectively.

Technology is often presented as a solution, yet adoption across the sector remains uneven. While some businesses have invested heavily in new systems, others remain cautious, concerned about cost, reliability and whether new tools will genuinely deliver a return. In practice, the most effective technology adoption in nurseries is rarely about cutting-edge innovation. Instead, it is about using practical, well-chosen systems to improve visibility of production status, labour allocation and compliance requirements across the business, supporting greater consistency and confidence in decision-making.

Technology as a response to business pressure

For most growers, technology adoption is not driven by a desire to modernise for its own sake. It is a response to very specific pressures within the business. Labour availability remains one of the most significant constraints on growth and productivity, particularly for businesses reliant on skilled or experienced staff. At the same time, compliance and traceability requirements have increased, adding to administrative workload and the risk associated with manual record-keeping.

In this context, technology is often viewed not as an opportunity, but as another potential burden. Systems that are complex, poorly supported or difficult to integrate into existing workflows can increase stress rather than reduce it. As a result, many growers take a conservative approach, preferring incremental change over large-scale transformation.

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Moving from work arounds to systems

In many nurseries, day-to-day operations rely on informal workarounds – paper notes, individual memory, or staff walking plants and information from one place to another. While these approaches can function at a small scale, they become increasingly inefficient as production volume, site size or staffing pressure increases.

A useful way to think about this is to compare nursery operations with a well-run restaurant. In a commercial kitchen, staff movement is planned rather than accidental. Orders flow through defined stages, tasks are carried out at specific stations and work comes to people rather than people constantly walking to find work. This isn't about technology for its own sake – it's about reducing unnecessary movement and making the flow of work visible and predictable.

The same principle applies in a nursery setting. Instead of staff repeatedly walking long distances with single trolleys or responding ad hoc to tasks as they arise, more efficient operations focus on moving plants in fewer trips, bringing work to people and clearly defining where each task happens.

Simple changes – such as consolidating movements, using multiple trolleys or setting up fixed work stations in dispatch or processing areas – can significantly reduce labour time and physical strain.

Saving a few minutes here or there does not feel transformative in isolation. However, in a production nursery, these small efficiencies are repeated dozens or hundreds of times each day, across multiple staff and over long periods.

When those minutes are added up over a week, a season or a year, the impact becomes significant. Time that was previously lost to unnecessary movement or rework can be redirected to higher-value tasks such as quality control, planning, staff training or customer orders. In practical terms, this can translate to reduced labour pressure, lower operating costs and greater flexibility in how time and resources are used.

This is why seemingly small system changes often deliver outsized returns. The benefit does not come from any single adjustment, but from the cumulative effect of doing everyday work more deliberately and consistently.

Saving five minutes per task can quickly become hours per week across a team.

WHAT GROWERS ARE ACTUALLY ADOPTING

Technology adoption in the nursery sector tends to focus on a small number of practical functions rather than broad, integrated platforms.

Common areas of uptake

- **Environmental monitoring and control, such as tools that support irrigation scheduling, climate management or early detection of plant stress. These systems can reduce variability, improve resource use and support more consistent production outcomes.**
- **Scheduling and task management, where simple digital tools help track daily activities, staff allocation and production timelines. This can be particularly valuable in managing labour more effectively and reducing reliance on informal communication.**
- **Inventory management and traceability, providing clearer oversight of stock levels, plant movements and input use. Improved traceability supports compliance, biosecurity preparedness and business planning.**
- **Targeted automation, applied selectively in areas where labour pressure is most acute or tasks are repetitive and time-consuming. Automation is typically introduced in stages rather than across the entire operation.**

Across all these areas, growers consistently report that ease of use and reliability are more important than advanced functionality.

In practice, GrowConnex team experience shows that technology uptake often begins with a single pressure point rather than a whole-of-business strategy. Examples include nurseries introducing simple task scheduling to manage reduced staffing levels, or basic tracking systems to improve visibility in dispatch and spacing operations. In several cases, growers reported that once a first system was in place and delivering clear time savings, confidence increased and further improvements became easier to justify.

Scale and context matter

Business size and structure play a significant role in technology adoption. Larger nurseries are more likely to invest in systems that support coordination across multiple sites or teams, while smaller businesses often prioritise tools that deliver immediate time savings. Importantly, the same technology can have very different impacts depending on how it is implemented and supported.

Growers with limited internal capacity may struggle to maintain complex systems without external support. Conversely, businesses that invest time upfront in training and integration are more likely to realise ongoing benefits. Understanding this context is critical when assessing whether a particular solution is appropriate.

When timing matters: the first investment

A common challenge for growers is deciding when to invest. Waiting for the bottom line to improve before introducing new systems can feel sensible, but in practice it can lock businesses into existing inefficiencies. In several cases, growers have found that a single, well-targeted investment – introduced to address a specific operational constraint – was enough to create the breathing room needed for further improvement.

While technology is not a solution in itself, timely investment can change the trajectory of a business by freeing up time, reducing pressure on staff and allowing managers to focus on higher-value decisions rather than day-to-day firefighting.

This decision is often compounded by a lack of time to step back and assess options.

For many nursery businesses, the hardest part is not identifying opportunities for improvement, but finding the time and headspace to step back and assess them. Day-to-day pressures – meeting orders, managing staff, paying bills – leave little room to pause and reflect. As a result, inefficiencies that feel manageable in the short term can quietly compound over time, adding cost, stress and risk to the business.

Where growers have been able to take half a day or even a single day away from routine tasks to review how work is flowing and where pressure points sit, the benefits can be substantial. Small changes, informed by deliberate thinking rather than urgency, often deliver disproportionate gains in efficiency, confidence and flexibility.

What makes adoption stick

Experience across the sector suggests that successful technology adoption shares several common characteristics. Systems are more likely to be used consistently when they align closely with existing workflows and clearly replace something that is already causing friction. This might include reducing paperwork, minimising double handling or improving visibility of production status.

Clear ownership within the business is also critical. When responsibility for a system is diffused or unclear, uptake tends to decline over time. Training that focuses on practical use rather than theoretical capability supports confidence and reduces resistance among staff. Importantly, growers are more likely to persist when benefits – such as time savings or reduced errors – are realised quickly.

"The turning point for us was adopting the specialised forklifts to transport plants from production to the growing areas. A team of three was reduced to one. This efficiency motivated us to examine new ways to do other operations within the nursery – which now includes use of automated pruning machines, robotic planters and other automation solutions throughout the nursery,"
said Chris Hart, Managing Director at Harts Nursery.

Specialised forklift


Consistent crop

The role of GrowConnex support

GrowConnex experts play an important role in supporting growers to navigate technology decisions. Rather than promoting specific products, GrowConnex support focuses on helping growers clarify their priorities, assess risks and identify realistic pathways for change. This includes asking critical questions about what problem needs to be solved, what level of complexity is appropriate and how new systems will be maintained over time.

By providing an external perspective, GrowConnex team members can help growers avoid unnecessary investment and reduce the likelihood of adopting systems that do not fit their business. This support can also assist with staging adoption, allowing growers to build confidence and capability incrementally.

Managing risk and expectation

Technology is not a universal solution, and it does not remove the need for sound management and experience. Poorly implemented systems can introduce new risks, including data loss, reliance on external providers or disruption to established practices. Managing expectations is therefore essential.

Growers who approach adoption as a tool to support decision-making, rather than replace it, are more likely to achieve positive outcomes. This includes recognising that technology requires ongoing attention, review and adjustment as the business evolves.

Robotic plant sticker

Looking ahead

Technology will continue to play a growing role in production nurseries as labour markets tighten and operational complexity increases. However, adoption is likely to remain uneven, reflecting differences in business size, capacity and risk appetite. The most successful businesses will not necessarily be those that adopt the most technology, but those that do so deliberately and strategically.

Starting small, focusing on clear business needs and seeking appropriate support can help ensure that technology delivers genuine value. For many growers, the goal is not to work harder or faster, but to put better systems in place that reduce pressure and support long-term resilience.

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FURTHER INFORMATION

- ***www.greenlifeindustry.org.au/news/february-2025-nursery-paper***
- ***www.greenlifeindustry.org.au/news/2024-25-data-capture-report***

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