

vegenotes





VG16031: VEGWHS TRAINING RESOURCES

FACILITATORS:

Project VG16031 was completed by Luke Rolley from RM Consulting Group.

INTRODUCTION

Death and serious injury are significant risks for people who work on, live on or visit a farm. This is demonstrated by research published by the Australian Centre for Agricultural Health and Safety, based on media coverage from the 2016 calendar year, that found there were 63 on-farm injury deaths during that year.

Figures compiled by the Centre for the first quarter of 2017 show little has changed, and that farm injury deaths continue to impact rural communities.

Effective workplace health and safety systems for vegetable growers, and training on how to implement them, are critical to reducing the risks of injury or death on-farm or in the packing shed, as all instances of injury on-farm are preventable.

ABOUT THE PROJECT

A Workplace Health and Safety (WHS) system for the vegetable industry was developed as a result of a previous vegetable research and development levy-funded project VG13053 – *Vegetable industry workplace health and safety resources*, undertaken by RM Consulting Group (RMCG).

This previous project included a unique carrot-shaped USB thumb drive that featured a safety management system and safety guidelines for 72 tasks that are common on vegetable farms. One of the key recommendations from VG13053 was the need for longer-term training and access to WHS help for growers.

For VG16031, RMCG created eight short practical training video clips to appear on YouTube and other social media and websites. This was to inform growers on how to use the resources, and make it as easy as possible for them to simply pick up the system and start accessing the information straight away.

The four key steps of the previously developed VegWHS program were reinforced throughout the videos – assess the risk; document the risk and controls to manage the risk; train your workers; and monitor progress over time.

RMCG Senior Consultant Luke Rolley said the short videos were shot on real vegetable farms with real vegetable growers.

"We wanted to show exactly how it is as authentically as possible," he said.

"In preparing the videos, we identified really high risk activities that happen on-farm to educate growers about how to conduct risk assessment on these riskier activities and show growers how they could manage those risks in order to provide maximum benefit to industry."

Mr Rolley said it was also important to show growers how to navigate through and use the carrot USB, which was also achieved via the use of a video.

MAJOR FINDINGS

Mr Rolley said brochures were not seen as effective communication tools in this context.

"Risk assessment is a hands-on process," he said.

"If you attempt to deliver these messages in a written document, you will likely end up with a training note that is 14-pages long and hard to consume.

"Videos are an excellent extension tool going forward. They are a really good way, in a five or 10-minute package, to explain in great detail complicated and serious issues."

Mr Rolley said while growers involved in the project were initially nervous about the process, they have all been very positive with the outcome.

"Feedback from vegetable growers is that the system is very professional," he said.

"Growers are telling us that the messages are very clear, easy to understand and very accessible."

CONCLUSION

Mr Rolley said WHS was complex and growers often found it difficult to determine just where to start on their own property.

"Time is also a factor given many growers have family businesses so the time to consider workplace health and safety issues, let alone implement any changes, is limited," he said.

"With just a small amount of time invested in watching the training videos, growers have been able to quickly upskill and have the capability to implement the resource on their own property."

He added that it is a very cost-effective way to deliver training to an entire industry, which often considers implementing a WHS system as something that will require significant expenditure.

"If we had to roll out consultation on vegetable farms, and involve the necessary expertise across Australia, it would be a very expensive exercise," Mr Rolley said.

"But through the videos and the carrot USB, we are grabbing expertise in little packages and rolling out the training in a much more cost-effective way."

ACKNOWLEDGEMENTS

This project is a strategic levy investment under the Hort Innovation Vegetable Fund.

VG16031 has been funded by Hort Innovation, using the vegetable research and development levy and contributions from the Australian Government.



VG13113: EVALUATION OF AUTOMATION AND ROBOTICS INNOVATIONS – DEVELOPING NEXT GENERATION VEGETABLE PRODUCTION SYSTEMS

FACILITATORS:

Project VG13113 was completed by Sue Heisswolf (Bowen), David Carey (Gatton) and Steve Ginns (Bundaberg), Queensland Department of Agriculture and Fisheries.

INTRODUCTION

Robotics in agriculture has been a hot topic in Australia for a number of years as fruit and vegetable growers face increasing pressure to supply fresh, perishable products at reducing profit margins.

The need for the industry to remain globally competitive has been the main driver of this interest, as automation, robotics and sensing technologies are regarded as one of the best ways to achieve substantial productivity gains, primarily by reducing labour costs.

ABOUT THE PROJECT

The project sought to investigate current developments in automation, robotics and sensing technologies in collaboration with vegetable growers by focusing on practical on-farm needs and how evolving technology might address these needs.

Researchers from the Queensland Department of Agriculture and Fisheries (DAF) aimed to provide growers and industry with the opportunity to explore and review current technologies and how they might be applied to improve farm and packing shed operations.

Three major vegetable production areas of Queensland – Bowen/Burdekin, Burnett/Wide Bay and Lockyer/Fassifern were the focus of the project work. The project team sought to engage a diverse range of industry members, including vegetable growers, engineering firms and agronomists. They also facilitated and encouraged input at local meetings from key research teams working in automation, robotics and sensing in horticulture.

More than 40 grower enterprises, five engineering firms and six agronomy/consultancy firms (more than 70 individuals) actively engaged in project activities, with an additional 26 industry support and research staff also contributing to the work.

DAF staff also provided researchers from the Queensland University of Technology (QUT) and the CSIRO with the unique opportunity to visit farms while they were in full operation.

These targeted visits were particularly valuable for linking up growers with researchers and allowing direct observation and discussion of on-farm technology, processes and productivity challenges with growers.

The project reviewed existing and potential technologies and identified industry priorities by:

- Focusing on industry needs rather than the technology;
- Discussing needs with industry and possible outcomes (via survey interviews, farm visits, regional forums and review meetings);
- Taking leading researchers onto commercial vegetable farms; and
- Strengthening communication links between growers, industry and researchers.

MAJOR FINDINGS

An evaluation of the work showed that growers and industry involved in project activities had increased awareness and were more engaged with the latest technological developments in automation, robotics and sensing.

Through communication with growers and industry stakeholders, priorities for future R&D efforts were identified, which include:

- Automated crop management including automated crop health monitoring, autonomous weed management and autonomous all-purpose adaptable platforms (robots);
- Sensing and sensor networks for horticulture;
- Robotic harvesting of tropical and sub-tropical crops;
- Increased packing line/packing shed efficiency; and
- Vertebrate pest management in vegetable crops and virtual fencing in mixed farming enterprises.

Personal relationships with industry, following up on issues raised during project activities, and ongoing discussions about technologies with growers helped increase the effectiveness of these feedback mechanisms, which included webinars, workshops, farm visits and grower surveys.

CONCLUSION

R&D opportunities in automation and robotics for horticulture are significant and fast-moving, with advances in technology needing to be focused on producing worthwhile outcomes for primary producers. Increasing grower and industry involvement early in this process is critical, as future technologies are then more likely to be fit-for-purpose and once commercialised, more easily incorporated into existing field and packing shed operations.

Opportunities exist to build on the positive image of the Australian vegetable industry to attract more specialised higher skilled, technology-savvy workers through the adoption of innovative technology.

The project also found that in order to effectively promote technological innovations to growers, communications and activities need to be concise and focus on the potential positive impacts that adopting these technologies may have on farm productivity.

ACKNOWLEDGEMENTS

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THE BOTTOM LINE: VEGWHS TRAINING RESOURCES (VG16031)

Effective workplace health and safety (WHS) systems for vegetable growers, and training on how to implement them, are critical to reducing the risks of injury or death on-farm or in the packing shed.

An output from a previous project included a carrot-shaped USB thumb drive that featured a safety management system and safety guidelines for tasks that are common on vegetable farms. A key recommendation from this project was the need for longer-term training and access to WHS help for growers.

Project VG16031 created eight short video clips that are available on YouTube and other social media and websites to make it as easy as possible for growers to analyse WHS risk on their farms and implement risk mitigation.

The videos were found to be an excellent communication vehicle, particularly when compared to hard copy documents.

Growers found that the messages in the videos were very clear, easy to understand and very accessible.

This was particularly important given WHS issues are complex, and growers often find it difficult to know just where to or how to start.

FURTHER INFORMATION

For further information and to view the VegWHS videos, please visit vegpro.com.au/veg-whs.

For more details about the project, please contact Luke Rolley on 0407 505 362 or at luker@rmcg.com.au.

The final report for this project is available on InfoVeg. Readers can search 'VG16031' on the InfoVeg database: ausveg.com.au/infoveg/infoveg-database.

THE BOTTOM LINE: EVALUATION OF AUTOMATION AND ROBOTICS INNOVATIONS – DEVELOPING NEXT GENERATION VEGETABLE PRODUCTION SYSTEMS (VG13113)

Project VG13113 sought to investigate current developments in automation, robotics and sensing technologies in collaboration with vegetable growers by focusing on practical on-farm needs and how new technology might address these needs.

The project engaged a significant and influential cross-section of the industry in Queensland, and increased their awareness and engagement with developments in automation, robotics and sensing technologies.

KEY POINTS

Actively increasing grower and industry involvement early in the R&D process is critical for the adoption of innovative technologies on-farm. The project work has identified and documented industry priorities for future investment. They included:

- Automated crop health monitoring, autonomous weed management and autonomous, adaptable platforms (robots);
- Sensing and sensor networks for horticulture;
- Robotic harvesting of tropical and sub-tropical crops;
- Increased packing line/packing shed efficiency; and
- Vertebrate pest management in vegetable crops and virtual fencing in mixed farming enterprises.

FURTHER INFORMATION

For more details about the research, please contact Sue Heisswolf on 07 4797 9728 or at susanne.heisswolf@daf.qld.gov.au.

The final report for this project is available on InfoVeg. Readers can search 'VG13113' on the InfoVeg database: ausveg.com.au/infoveg/infoveg-database.

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Please contact Michelle De'Lisle at AUSVEG via email at michelle.delisle@ausveg.com.au or call 03 9882 0277 to submit topics for potential inclusion in future editions of *Vegenotes*.

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