

GROWER SUCCESS STORIES

REAL RESULTS
FROM THE
VEGETABLE R&D
LEVY

AUSVEG





Every year Horticulture Australia Limited (HAL), using the National Vegetable Levy, with matched funds from the Federal Government, has invested vital funding in grower-driven research and development (R&D) projects, with industry growth being a key focus.

In the pages ahead, you will find examples of growers from around the country who have enjoyed real benefits and success as a result of taking on initiatives connected to vegetable levy-funded R&D projects.

In the field of innovation and automation, we can see tangible evidence beginning to emerge of the benefits growers will reap from projects such as the 'Ladybird' farm robot trial. Trials of this impressive automaton have been taking place on the Cowra property of grower Ed Fagan, and he discusses his experiences with the robot in this publication.

Earlier this year, members of the Vegetable Industry Advisory Committee (IAC), along with representatives from HAL and AUSVEG, were treated to an on-farm demonstration of the 'Ladybird'. Having witnessed this promising project firsthand, I can assure you that it is a truly exciting prospect, which has the potential to bring significant productivity gains to the Australian vegetable industry.

Elsewhere, we see examples of Australian growers being given opportunities to learn from their global counterparts and make valuable networking connections. With a strong focus on produce innovation and market development, growers have been provided access to key buyers and business contacts in Asia, as well as innovations from Europe and the USA, as a result of participation in a range of export symposia, key trade exhibitions, and study tours funded in part by the levy.

Crop health and disease and soil management have also been an ongoing focus of levy-funded R&D projects for the benefit of the entire Australian vegetable industry. Sustainable farming is underpinned by sustainable practice, and it is a high priority for the industry to ensure that our growers can continue to successfully provide the premium produce for which this country is known.

Investment into innovative soil management and growing systems has resulted in real on-farm change and contributed to more consistent and healthier crops. Tasmanian grower Colin Houston, who is also featured in this publication, is testament to this.

As well as being the Chair of the Vegetable IAC, I am also a sweetcorn grower from Bathurst, New South Wales. On that basis, I have been committed to ensuring that levy payers receive the best possible return on their investment, and that industry R&D projects continue contributing to the growth of our industry.

I look forward to seeing the wonderful and innovative results from R&D projects into the future, and the subsequent ongoing success of our growers.

Yours sincerely,

Jeff McSpedden
Chair of the Vegetable IAC



ED FAGAN
Embracing New Technologies



The 'Ladybird' farm robot (VG12104) is set to revolutionise vegetable growing in Australia.

Equipped with intelligent software, the self-driven ground robot was designed specifically for the vegetable industry to conduct autonomous farm surveillance mapping, classification and detection for different vegetable crop varieties.

Farm trials

The under-development robot is being trialled on the beetroot and spinach farms of Cowra, NSW where grower Ed Fagan is seeing firsthand its potential multiple benefits.

“ We are certainly recognising how this technology can be used to improve on-farm efficiency in terms of labour and time management. ”

“The initial trials of Ladybird have produced some successful results,” he said.

“Although its application on-field is still some years away, its ability to potentially reduce labour costs for growers, efficiently and reliably, is an exciting development for the vegetable industry.

“At the moment we are trialling it across multiple facets of the farm’s operation to determine the areas where its ability lies

and where improvements are needed.”

Mr Fagan said Ladybird had the potential to carry out some of the everyday manual tasks performed by farmers, and also cover a lot of ground.

Versatile technology

As well as contributing to crop health control, Ladybird also has a robotic arm incorporated into its design for the purpose of removing weeds.

“The robot, which is powered by solar energy, can expertly manoeuvre up and down rows in the paddock gathering data by using complex sensory technology (lasers, cameras and hyper spectral cameras),” Mr Fagan said.

“The technology built into the robot is a lot more precise than aerial vehicles (or drones).

“Through its software applications it can monitor vegetable growth and detect weed thresholds and insect/disease pressure.”

Mr Fagan said the robot also played a vital role in optimising planting methods.

“It can accurately calculate and set parameters for the spacing of seeds which is really critical when planting beetroots,” he said.

Future testing of Ladybird will include a robot manipulator arm located under the vehicle that has the potential for spot sensing or spot sampling and looking towards automated harvesting.

Summary:

- **Project VG12104** aims to develop and trial 'Ladybird', a ground robot supported by intelligent software with the capability to conduct farm surveillance and undertake autonomous weeding.
- **Trials** for this project are being conducted at the property of Ed Fagan, a farmer from Cowra, NSW whose family has been farming beetroot and other various vegetables at the site since the 1940s.
- **Initial** trials of Ladybird have been successful, with positive results shown through its solar recharging, manoeuvrability and software applications.
- **It is expected** the successful adoption of Ladybird throughout farms will result in less chemical use for weeding and improved knowledge and application of robotics on vegetable crops.

Facilitators:
Project VG12104 is being conducted by international expert on field robotics and intelligent systems, Professor Salah Sukkarieh, from the University of Sydney's Australian Centre for Field Robotics and his research team.



Participating in the 2014 Reverse Trade Mission (VG13035) this year has encouraged Nathan Free, the managing director of Alkira Organics, to explore new trade and investment opportunities for the business in overseas markets.

Delivered through a series of site visits and meetings, the project brought key Asian buyers and industry stakeholders to Australia to establish direct contact with Australian growers.

Building networks

For Nathan, it also offered a platform to showcase Alkira Organics' certified organic produce and make direct contact with a range of companies, so that rather than selling through a third party, future business models can be stronger and more efficient.

"At an organic industry level I have seen a greater awareness of the abilities of Australian producers to send produce overseas and make direct connections," he said.

Mr Free emphasised that the company is no longer focusing solely on local markets but looking widely at what is commercially viable outside of Australia.

"I currently only export into one country, Singapore, as demand for organics is still strong in Australia so we haven't been pushing hard overseas. Since the Reverse Trade Mission though we have had strong interest from a further three countries."

Nathan said the Reverse Trade Mission provided an understanding of what drives

consumer interest in the vegetable industry overseas, the type of products being demanded, and who that consumer is.

"Since the Reverse Trade Mission we have travelled to China to explore markets there and the ability our company might have to supply their consumer base," he said.

"We have strengthened the relationship with our existing customers in Hong Kong, who have expressed interest in developing a greater variety for purchase in the future."

Mr Free also said that he is in contact with a company in Thailand that may have some interesting business potential in the future.

Benefitting business

There is no doubt in Nathan's mind that the demand for organically grown produce is high and he says that he has "seen the businesses that were involved in the Reverse Trade Mission, along with my own, have a growing number of enquiries regarding the products that they can offer to overseas markets".

Nathan said the connections formed and interest garnered at the Reverse Trade Mission reaffirmed that the company was heading in the right direction.

He said that the Reverse Trade Mission was a positive event for those who participated and for the greater vegetable industry in Australia to work toward mutual understanding. It acted as an open forum for all competing businesses and buyers to come together.

"As long as producers that are looking to export understand they need to look after their relationship with their overseas customer the same as if they keep their relationship with their Australian customers you can't go wrong," he said.

Alkira Organics is an Australian-owned and run family business, which grows, packs and distributes a range of fruit and vegetables year round.

Summary:

- **The 2014 Reverse Trade Mission** was an industry-funded project designed to facilitate networking opportunities for Australian vegetable growers and provide them with the tools to allow them to export their produce overseas.
- **The event** ran from 16 June to 22 June and visited Sydney, Gold Coast and Brisbane before reaching Cairns.
- **Australian vegetables** were showcased to buyers and industry representatives from Hong Kong, Japan, Singapore, Taiwan and Malaysia. Delegates were also afforded the opportunity to attend produce and wholesale markets in Brisbane and Sydney and visited prominent growing operations in Queensland, providing further insight into the Australian industry.

COLIN HOUSTON

Soil Management Solutions



Sustainable farmers understand that good fertile soil is fundamental for healthy plants to thrive.

While there is plenty of research summarising current soil management information, it is not always easy to access, understand and put into practice.

A new project run jointly by RMCG (a consultancy for business, communities and environment) and Applied Horticultural Research (AHR) is aiming to build the soil management skills and knowledge of vegetable growers and advisors throughout Australia so they can make informed decisions in their farming operations.

On-farm trials

Colin Houston, a member of the committee for the project, is working closely with commercial agronomists, on-farm agronomists and growers to help increase agronomic support services in the country (VG13076).



Photographs by Loïc Le Guilly.

The Tasmanian-based grower has begun incorporating soil management initiatives into work on his Southern Fields property, which he has nominated as a trial site for the project.

“Growers will be adopting and trialling management practices to improve soil condition and farm profitability, and reduce input costs,” he said.

“The project team will then be monitoring the quality of the soil health and after three-to-five years, monitoring the effects of trials on various crops.”

Mr Houston said using green manure, such as sorghum, rye grass, rye corn and BQ mulch, was a proven way to “keep soil in good shape.”

Sustainable practice

“In today’s highly competitive market place, growers are expected to produce good quality, high-yielding crops with the least amount of chemicals as possible,” he said.

“However, much of this relies on understanding what makes up a healthy soil and the importance of looking after the soil to ensure ongoing production.

“While this project is in its very early stages, the results of our previous projects are testament to this approach.”

Mr Houston said the project also aimed to take the first steps in the creation of a vegetable soil management “innovation system.”

“The end-goal is to connect grower practice, the supply chain and the research community to make sure all ‘parts’ of the vegetable industry and its support system work together to support continuous improvements in soil management,” he said.

“It’s critical that growers have practical, easily accessible and relevant information at their fingertips which they can apply to specific crops or crop groups in regions across Australia.”



“ We have found that we are getting fewer diseases and much better crops. Earthworms are coming back up to the surface again and the soil smells - and feels - good. ”

Summary:

- **The main focus** of Project VG13076 is to develop capacity among growers, agronomists and advisers, thereby supporting soil management that achieves long-term crop returns for growers by delivering extension and capacity building using a focused approach.
- **Run** jointly by RMCG and Applied Horticultural Research (AHR) this project will primarily assist growers to effectively use existing soil management information.
- **Tasmanian** grower Colin Houston is continuing to gain valuable knowledge about sustainable soil management and has begun to incorporate soil initiatives into his own work.
- **Through** his involvement on the project’s committee, he is working closely with commercial agronomists, on-farm agronomists and with growers directly to help increase agronomic support services in Australia.

*Facilitators:
Project VG13076 is being jointly completed by RMCG and Applied Horticultural Research.*



RICHARD GORMAN

Embracing International Innovation

A Queensland vegetable grower is highlighting the importance of the 'D' in R&D.

Kalfresh Vegetables Managing Director, Richard Gorman, credits participation in a study tour funded by attending growers, with support from Horticulture Australia Limited using the National Vegetable Levy and matched funds from the Australian Government, for his decision to invest \$4 million in new technology.

Mr Gorman said his involvement in the inaugural 2012 study tour to Germany (VG11706) - to visit Berlin Fruit Logistica - planted the seed for a redevelopment that is ensuring he'll be competitive into the future.

"The study tours are a great opportunity for people in agriculture to travel and learn from our colleagues abroad," Mr Gorman said.

"The major benefit I gained was being able to meet a lot of different people at the trade fair and understand how we could do business."

Kalfresh Vegetables is a farming, packing and marketing business based in Kalbar, one hour south-west of Brisbane. It supplies carrots, green beans, onions and pumpkin to markets in Australia and overseas.

Long-term investment

Mr Gorman says after his study tour he spent \$4 million on new washing, grading and cooling systems - and it is already paying dividends.

"I wanted a greater level of automation and efficiency with reliable equipment that has a lifespan well and truly past its payment date," he said.

"We've gone from handling 17,000-tonnes to 20,000-tonnes - but it's not really about the quantity, it is more about [reducing] the cost of processing."

Keeping up

"We need to be more globally competitive to export profitably because our labour and

“ It has given us extra capacity at a lower cost and provided ease of management. ”

utility costs far exceed that of our global competitors," he said.

To that end, Mr Gorman is a strong supporter of the use of levy funding on development-initiatives.

He added it was imperative for farmers in Australia to keep pace with trends in Europe and America.

Since his involvement in the first grower study tour he said he had encouraged staff within his business - as well as local growers - to get involved in the tours.

"We are always looking to learn from others and we travel extensively to ensure we remain at the forefront of the industry," he said.

"Many of the innovations in technology, farming practices and production methods are happening overseas.

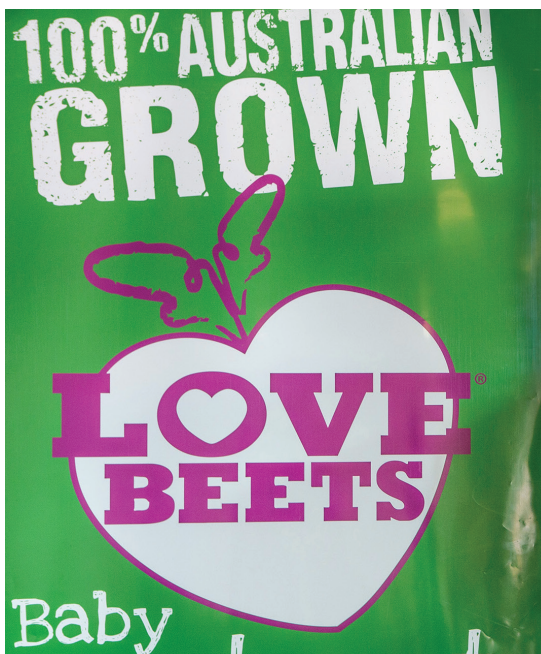
"In my opinion this is one of the best and most beneficial uses of grower levies because it generates real results and tangible outcomes."



Summary:

- **The Vegetable Growers Study Tour** was facilitated to investigate the latest production methods and business structures operating in Europe.
- **The tour** visited Berlin Fruit Logistica and farming operations.
- **Kalfresh** Vegetables Managing Director, Richard Gorman, took part in the inaugural tour to Germany in 2012.
- **He says** study tours lead to tangible and real results.

Photographs by Guy Creighton.



SARAH LUBIKOWSKI

Forging International Connections



The chance to represent the Australian vegetable industry at one of the world's largest agricultural trade shows provided Sarah Lubikowski, of the OneHarvest group (QLD), with insight into key business value streams and export opportunities in Hong Kong.

The Asia Fruit Logistica exhibition is the premier fresh produce event in the Asia-Pacific and attracts international industry heavyweights including importers and buyers representing major supermarkets. The main focus of the Australian industry presence at the event (VG12100) was on developing international export markets that have been identified as a key priority for the Australian vegetable industry.

Expanding export opportunities

Ms Lubikowski, who applied to attend on behalf of the OneHarvest group to gain exposure to potential new distributors, said she believed attending the expo would help facilitate expansion into Asian markets.

"The timing was perfect for us as we had recently launched our Love Beets beetroot products into New Zealand and were keen to progress potential export partnerships into other south-east Asian markets," she said.

“ The trade show provided a tailor-made opportunity to connect with major wholesalers and retailers and we had some really fruitful discussions. ”

Ms Lubikowski said that the exhibition provided her with a great opportunity to negotiate around existing exports in the region and use this as a basis for expansion of their export program.

As a direct result of the first-hand knowledge Ms Lubikowski acquired, she has been instrumental in facilitating the launch of new product lines into Singapore and Hong Kong.

"As a result [of Asia Fruit Logistica] we will definitely be launching Love Beets in Singapore and Hong Kong in the next few months and look forward to seeing our export sales for this range of products start to grow, with a corresponding impact on our bottom line."

Industry on show

To ensure that Australian R&D was showcased in a professional way, an Australian Vegetables stand at Asia Fruit Logistica was managed by industry representatives. The intention was to show buyers, importers, exporters and growers the high quality and safety of Australian vegetables as a result of R&D. Sarah Lubikowski was an active industry representative, present at the stand to communicate messages related to fresh Australian vegetables, R&D information and industry publications.

"It was the interactions on the trade show floor and those meetings arranged offsite around the trade show program, that proved really beneficial," Ms Lubikowski said.

"I was impressed with the number of delegates and exhibitors and would urge other Australian-based produce businesses to consider a presence at Asia Fruit Logistica if they want to expand their understanding of what's hot in produce in the Asian region and to meet potential Asian business partners."



Photographs by William Long.

Summary:

- **Attendance** at Asia Fruit Logistica provided participants with the opportunity to learn about international export opportunities, particularly focused on Asia, and facilitated networking opportunities for Australian growers with their international counterparts.
- **It was also** an opportunity to showcase the high standard of Australian produce and industry R&D.
- **Today, Ms Lubikowski** has a stronger understanding of international market trends and has used the knowledge she has acquired to further the work of the OneHarvest group in expanding exports and product lines into Asia.



MARK BELL

Creating Innovative Produce

Photographs by James Vincent.

Quality not quantity, relationship building, consistency, communication and innovation are the keys to successful salad business Hussey & Co.

That's the belief of the company's General Manager, Mark Bell, who oversees the Victorian-based operation, which has about 250 hectares under production, employing up to 90 people at peak times.

Mr Bell said the family-owned business, which sells premium packaged salad mixes to restaurants and retail outlets throughout Australia and overseas, was always working towards being more innovative and, as a result, more competitive globally.

That's extremely important when you export, and Hussey & Co sends around 45 per cent of its product overseas annually.

Attending regular industry events, conferences, and exhibitions, including this year's Produce Innovation Seminar (VG13033), have proven important components in the ongoing development of the business.

Exposed to innovation

The seminar, held in Cairns in June, was aimed at exposing Australian growers to innovations from around the world, and encouraging them to think about improvements they could implement within their own operations.

This year's event featured a range of industry speakers from the US, discussing everything from nutrition and product innovation, to new ways that US growers are improving post-harvest packaging and processing to enhance shelf life and attract higher prices. An address by European produce innovator Rob Baan was another popular attraction.

Mr Bell said a key element of the Produce Innovation Seminar was the focus on consistency, with new industry equipment and automation essential for quality produce.

Other important factors, he added, were discussions around packaging and temperature.

"Your product has to arrive at the same temperature it leaves your facility to ensure high quality," he said.

Food for thought

Mr Bell said attendance at the event was also an important opportunity to liaise with other growers, which in turn provided food for further innovative thought.

"It's a great opportunity to meet some other growers and form relationships ... building relationships is the one way you are going to survive. If you are of the old mindset, the risk is higher," he said.

"Working with other growers is important. Even though we have a lot of land capacity, it's important to tap into the resources of others - if we experience bad weather conditions in one area, people in other areas can help provide 'x' amount of kilos and you keep your market going.

"You can't afford to lose your customers. They do go elsewhere if you can't supply what they want, when they want it."

While the Produce Innovation Seminar aimed to expose growers to innovation from abroad, Mr Bell said it was also heartening to note Hussey & Co had already considered a lot of the points that were addressed.

"Everything talked about, Hussey & Co have been doing for many years, so it was good for us to be able to promote it and explain to others that it is all doable," he said.

Hussey & Co focuses on 25 products, with its most popular ranges being spinach, mesclun and wild rocket.

"In 1975 Hussey & Co had over 60 products growing and so over the past 15 years we have reduced the numbers down to ensure quality not quantity," Mr Bell said.



Summary:

- **The 2014 Produce Innovation Seminar** provided an opportunity for growers to hear about global innovations.
- **Investing in** improved temperature control technology ensures top quality product.
- **Building relationships** with other businesses is a key benefit of attending industry events.
- **Ongoing innovation** has ensured a focus on quality rather than quantity.