

vegetables

australia

November/December 2014

Mark Allison
Elders wisdom

The Front Line
Tackling soil-borne
plant pathogens

Ben Schreurs
Young grower

Ladybird trial
Robotics on show



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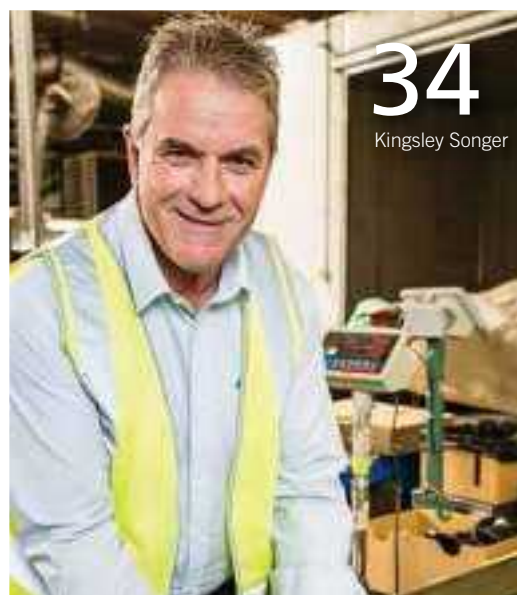
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AUSVEG Chairman and CEO messages



Geoff Moar

AUSVEG Chairman

Well-funded R&D plays an essential role in the successful advancement of the vegetable industry and its long-term viability. As 2014 draws to a close, *Vegetables Australia* has brought to you a special edition focusing on emerging technologies – it's a shining example of the benefits the R&D levy brings to vegetable growers.

Whether it's the unique monitoring of pests and diseases or more efficient ways of harvesting, there is ample opportunity to harness the potential of technology and apply it to the farms of the future.

This edition celebrates those growers who are already using emerging technologies to better both efficiency and profitability on their farms, with outstanding results. As with any type of technology there is still some way to go in terms of development, but the ball is already rolling and I am excited to see what innovative ideas the industry is yet to discover.

The Grower Success Stories publication, which accompanies the magazine, also recognises those in the industry who have successfully embraced R&D advances funded through the National Vegetable Levy. I look forward to hearing more of these successful stories, and encourage growers to keep abreast of ongoing R&D initiatives and the untapped potential it can bring to their businesses.

It is pleasing to see that the Federal Government also recognises the value of ongoing investment in industry R&D, which was identified as an area for potential policy development in the recent Green Paper into Agricultural Competitiveness. Federal Minister for Agriculture the Hon. Barnaby Joyce MP

released the document, which will inform the development of the White Paper into Agricultural Competitiveness and ultimately, the future policy directions for agriculture in Australia.

The paper highlighted a number of key issues that AUSVEG has previously raised with the Federal Government, such as policy suggestions for possible expansions of Working Holiday Visas, reducing red tape, improved biosecurity arrangements and access to international markets. In the weeks ahead, AUSVEG will work closely with the Federal Government to ensure the needs of Australian vegetable growers are adequately addressed in the resulting White Paper that will be developed.

That said, such communication is already taking place, with AUSVEG representatives recently holding a series of meetings with Foreign Minister the Hon. Julie Bishop MP, Senator the Hon. Richard Colbeck MP, Environment Minister the Hon. Greg Hunt MP and Deputy Leader of The Nationals in the Senate, the Hon. Fiona Nash MP. This is just one of the many instances that AUSVEG has and will continue to liaise with key decision makers to further the interests of the nation's vegetable growers.

Geoff Moar
Chairman
AUSVEG



Richard Mulcahy

AUSVEG Chief Executive Officer

Mark your calendar and allocate some time away from the farm from 25-27 June 2015. The 2015 National Convention, Trade Show and Awards for Excellence is making its way to Jupiters on the Gold Coast – and it promises to be bigger and better than ever.

Looking back, the 2014 AUSVEG National Convention in Cairns attracted over 1,100 domestic and international delegates, and featured presentations from many esteemed international presenters and dignitaries. A Reverse Trade Mission of over 40 buyers from Asian nations was another highlight, while the ever-popular Trade Show also pulled in the crowds.

Although this year's National Convention set the bar high, we are confident that it will be surpassed with many exciting developments already underway for its successor. AUSVEG is once again looking forward to hosting the largest event in Australian horticulture on the Gold Coast next year and we will keep you updated on the exciting events we have planned in the lead-up to June 2015.

On a more sombre note, AUSVEG has been busy these past few weeks following the discovery of Cucumber green mottle mosaic virus (CGMMV) in some watermelon and pumpkin crops in the Northern Territory. While the virus itself was first discovered in the United Kingdom several decades ago, these recent detections mark its first incursion into Australia. This developing situation is presenting plenty of challenges for affected growers, and the wider industry.

The CGMMV situation is changing daily for our friends in the north and our

biosecurity staff are working hard to communicate the latest developments to both local and national growers. It is now timelier than ever to remind all vegetable growers just how important stringent on-farm biosecurity measures are, to ensure the future security of their operations. Simple decisions, such as cleaning machinery and boots before moving into the next field, can make a huge difference in keeping your crops safe from harm.

In other industry news, the make-up of the board of the new grower-owned research and development corporation (RDC), Horticulture Innovation Australia Limited (HIA), was announced in October. This announcement follows an independent review into the performance of Horticulture Australia Limited, the RDC which HIA will replace.

AUSVEG welcomes the announcement of the new board, to be led by Chairman Selwyn Snell, and looks forward to working with HIA in the coming months as the new entity continues to take shape. As always it will be AUSVEG's key priority to ensure Australian vegetables growers' levy investment in R&D delivers real returns to the farm gate.

Richard J Mulcahy
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**FRONT COVER:**

Mark Allison

Photograph by Russell Millard

Technology has revolutionised many aspects of our lives – and the vegetable industry is no exception. This special edition of *Vegetables Australia* is themed around the tangible results that R&D investment in emerging technologies has produced for Australian vegetable farms.

There are already many growers who have implemented technology on their properties, with much success. We begin in South Australia where Mark Lines, a mechanic turned vegetable grower, discusses what prompted him to develop a unique hydroponic gully tray technology for the greenhouses at Holla-Fresh (page 10).

Our Young Grower Ben

Schreurs, based in Victoria, is also no stranger to the power of emerging technologies. His family's farm has implemented two types of innovative water technologies that allow for safer and more efficient ways to wash, sanitise and cut their produce (page 28).

We also provide an update on the future plans for Ladybird, the intelligent farm robot developed specifically for the vegetable industry. She recently made a successful public debut in a farm demonstration in Cowra, New South Wales (page 12). Some of the latest developments in technology from the John Deere range can also be found on page 42.

EnviroVeg grower Kingsley Songer describes how a recent on-farm energy audit trial prompted him to tackle the rising energy costs at 4Ways Fresh in South Australia (page 34), while a new research project on how growers can best implement Integrated Crop Protection on their farms is discussed on page 18.

In industry news, *Vegetables Australia* recently had the opportunity to speak to Elders Managing Director and CEO Mark Allison on the new direction for the agribusiness,

much of which is aided by Mr Allison's extensive experience in agriculture (page 20).

National biosecurity is also a hot topic at the moment, following the detection of the Cucumber green mottle mosaic virus (CGMMV) in watermelon and pumpkin farms in the Northern Territory. AUSVEG biosecurity staff have been keeping growers updated on the issue and communicating the best on-farm biosecurity practices for growers to be mindful of (page 31). Meanwhile, this edition of *The Front Line* delves into the world of soil-borne plant pathogens and how they can be managed effectively (page 16).

As this is the last edition for 2014, it's a great time

to reassess the performance of *Vegetables Australia*. We'd love to hear your feedback on what we're doing well and what we can improve on, to ensure that we continue to deliver the most relevant information to your farm in the new year. Please complete and return our Reader Survey on page 50 and you can go into the draw to win a fantastic prize from Netafim.

We wish all of our readers a safe and relaxing holiday season. See you in 2015 for many more exciting developments in the vegetable industry.



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Ben Schreurs

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Veggie bites

Facts & figures...

3.5%

Over the past five years, vegetable prices have increased by 3.5 per cent annually, compared to 3.2 per cent for inflation, according to the ABS.

\$249 million

The value of vegetable exports in 2012-13, according to the Economic Snapshot factsheet distributed by AUSVEG.



600g

The amount of green beans consumers typically purchased per shopping occasion, as recorded by Project Harvest's Wave 13 June 2014 Report.

53%

The percentage of Australian vegetable growing farms that grow only one type of vegetable, as recorded by *ABARES Australian vegetable growing farms: An economic survey 2011-12 and 2012-13*.



25%

The average area planted for cabbage production in 2011-12 fell by 25 per cent from the previous year, according to ABARES data.



112,140 tonnes

In 2011-12, total WA carrot production was 112,140 tonnes, according to DAFWA.

15.87kg

The weight of the world's heaviest broccoli, grown by John and Mary Evans of Palmer, Alaska in 1993, as recorded by the Guinness World Records.

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Patented gully system proves a winner

MARK LINES, MANAGING DIRECTOR AT SOUTH AUSTRALIA'S HOLLA-FRESH PTY LTD, SPOKE TO FELICITY POWELL ABOUT THE INSPIRATION BEHIND HIS OPERATION'S HYDROPONIC GULLY TRAY TECHNOLOGY, AND HIS PLANS TO DEVELOP IT FURTHER IN THE FUTURE.

Mark Lines' entry into the vegetable industry isn't your typical tale of a son or daughter born into an established farming family, with property and wisdom passed down from generation to generation.

Mark entered the hydroponic growing business after beginning a career as a motor mechanic, a profession far removed from the greenhouses that dot his Tantanoola, South

Australia-based property.

"I guess it was a bit of a hobby at first. I liked the idea of the hydroponic side of things. We started growing lettuces and things like that and we moved into the herbs because we could see the demand for it," he says.

The demand proved to be enough to push Mark forward into a full-time position, and to eventually become Managing Director of Holla-Fresh.

Necessity: the mother of invention

The challenges of dealing with increasing input costs such as labour and electricity have been felt by agricultural producers across the country, and Mark is no exception.

"It's testing (working in the vegetable industry) – wages and power and all the input costs that go with it. But other than that, it's a good industry in

itself," he says.

Dealing with these rising costs, paired with an interest in developing new and useful technologies on-farm, inspired Mark and his team to create the "gully" system used in his greenhouses. The Holla-Fresh gully system brings the trays of produce to the harvester, as opposed to the other way around, which is the convention at most commercial greenhouses.

“We’ve had some big gains because before, the harvester wasn’t moving through the crop. The other thing is the harvesters are able to be set up at one point, then let the product come to them, and they are able to harvest it quite fast,” Mark says.

“The other thing we needed to do was make sure that we could get a maximum area of product per square metre. Naturally when the plants are younger, they don’t need the space to grow in. So with the channels closed up together at the point nearest to the harvester, as it moves down, it actually spaces the trays apart. That allows us to get twice the return in product per square metre, with half the labour. That is our biggest gain.”

A promising future

Mark explains that he was just one small part of a larger team

that developed the gully system, after finding inspiration while travelling overseas recently.

“I was lucky that I was able to go around Europe to see what was actually happening over there. We pinched some of their ideas and then put our ideas together to give us the ability to create the gully system. We designed and built it here in South Australia, and then we put a patent on it,” he says.

After successfully selling the patent to interested hydroponic growers both domestically and overseas, Mark and his team at Holla-Fresh have plans to further develop and improve the technology.

“We’re actually developing it at the moment. Depending on the product that you’re growing and depending on how you want to grow it, you’ve got to do things that improve the operation. We’re



working around how to re-design and improve on what we already have.

“It’s just about trying to get more cost-efficient in production. Most of our produce is grown undercover. It’s all grown in a greenhouse environment, so you’ve got to get the maximum return out of that greenhouse as you can, with the least amount of labour possible.

“We’re always trying to improve in things like robotics. Gradually we’ll get to that point but at this stage we’re not quite there yet.”



Ladybird in action during a recent on-farm demonstration in Cowra, New South Wales.

Ladybird farm robot trial a huge success

LADYBIRD, AN INTELLIGENT FARM ROBOT DEVELOPED SPECIFICALLY FOR THE VEGETABLE INDUSTRY, HAS BEEN MOVED OUT OF THE LAB AND ONTO THE FARM. A SPECIAL ONSITE DEMONSTRATION OF THE ROBOT WAS RECENTLY HELD IN COWRA, NEW SOUTH WALES, WHERE FUTURE PLANS FOR THE ROBOT WERE ALSO DISCUSSED.

Named for its distinctive red covers and black spots from the solar panels which are placed on top, the Ladybird farm robot is the first of its kind to be developed in the world.

It is the brainchild of 2014 AUSVEG Bayer CropScience Researcher of the Year, Professor Salah Sukkarieh, and

the team at the University of Sydney's Australian Centre for Field Robotics.

On 10 September, Ladybird was put to the test in a unique on-farm demonstration using a spinach crop on the Cowra property of Ed Fagan. Members of the Vegetable Industry Advisory Committee, along

with representatives from Horticulture Australia Limited and AUSVEG, attended the demonstration and were very impressed with how far the development of the robot has come since its introduction to the industry last year.

Ladybird is fitted with multiple high resolution cameras which can gather information day and night, allowing for autonomous farm surveillance, mapping, classification and

detection of pests. It also has omnidirectional wheels, which allow it to turn from a standing position, and uses GPS co-ordinates to decide the most efficient path for monitoring crops. Ladybird has also been fitted with a fully-automated arm, which can be programmed for autonomous weeding and harvesting.

Mr Fagan told ABC Rural that the robot's ability to gather information around pests and crop nutrition will be invaluable





Ladybird is fitted with high resolution cameras, omnidirectional wheels, uses GPS co-ordinates and is fitted with a fully-automated arm.

potential for soil sampling and weeding,” Professor Sukkarieh said.

“These will be explored further to determine the best system design, keeping in mind the potential for an actual product that farmers can get their hands on and use on their farms.”

Professor Sukkarieh said Mr Fagan has been a fantastic supporter of the project and that the team will continue to test Ladybird on different terrains and crops to establish its complete capability over the coming months.

to farmers.

“A lot of the time in horticulture, if you’re short of an element in the plant, by the time you see a symptom it’s too late. (Ladybird) will be able to pick up a nutrient deficiency before we see any symptoms,” he said.

Next stages

While still only in the developmental stages, Ladybird

has the potential to revolutionise the vegetable industry. Crop surveillance is set to play a key role in agricultural efficiency in the future, minimising inputs and maximising returns.

Ladybird will continue to be developed to gather a wider range of information in the future. Professor Sukkarieh said there is already a large collection of sensors on Ladybird at the moment, which can collect a significant amount

of data.

“It’s not so much that we need more information, but what can we do with the data that we have already, and do we need all the other sensors?” he said.

Since the trial, the researchers have been fielding interest in commercialising Ladybird.

“There has been a lot of interest in Ladybird both as a complete unit and also in terms of individual functionalities such as crop intelligence or the



This project is funded by Horticulture Australia Limited using the National Vegetable Levy and matched funds from the Australian Government. To see videos of the Ladybird trial go to <http://bit.ly/1shmJa0> Project Number: VG12104

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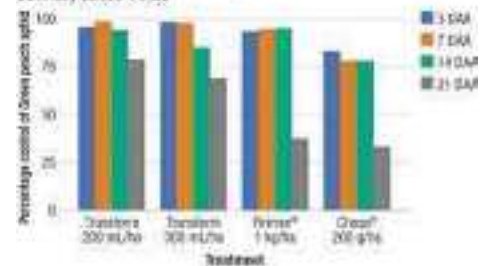
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with Dr Kevin
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R&D
Farm Productivity,
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SEED CAN PROVIDE AN IDEAL MECHANISM FOR TRANSMISSION OF VIRUSES, VIROIDS, BACTERIA AND FUNGAL PATHOGENS. TRANSMISSION MAY BE AN EFFECT OF PATHOGENS SURVIVING ON THE SEED COAT, OR IN SOME INSTANCES, WITHIN THE SEED ITSELF. FOR THIS REASON SEED TESTING, EITHER OFFSHORE OR ONSHORE, IS AN IMPORTANT MEASURE WHEN IT COMES TO MITIGATING THE RISK OF SEED-BORNE DISEASES, WRITES AUSVEG BIOSECURITY ADVISER DR KEVIN CLAYTON-GREENE.

Offshore suppliers of seed often conduct seed testing for common seed-borne diseases as a matter of course. However, it is good practice to check what tests your seed supplier commonly carries out and request testing for additional high-risk pathogens if necessary.

Phytosanitary certificates accompanying the consignment may need to include a declaration stating that testing for specific pests has been completed. The Department of Agriculture provides a resource in the form of the ICON database for checking conditions of entry for imported seed. The database can be accessed via www.agriculture.gov.au/biosecurity/import/icon-icd.

Local testing

Common seed-borne disease tests include those for Anthracnose, Cucumber green mottle mosaic virus (CGMMV), Ascochyta blight, Black spot, Grey mould, Chocolate spot, Pea seed borne mosaic virus,

and Broad bean stain virus.

Potato spindle tuber viroid (PSTVd), which can affect both potato and tomato, is seed-borne and has been detected sporadically in Australia over the past decade. Testing of plant samples from Australian outbreaks have formerly resulted in the detection of several viroid strains, indicating that the viroid was imported in multiple seed lots. The viroid, which is difficult to detect due to a lag time between infection and onset of plant symptoms, is one example of when regulated seed testing has proven to be a necessary step in national plant biosecurity.

Seed treatment with heat or fumigants may be a necessary condition of import for some vegetables. An example of new treatment regulations is that of imported carrot seed into Australia. In order to reduce the risk of *Candidatus Liberibacter solanacearum* entering Australia, imported carrot seed is now required to be heat-treated or tested for the bacterium using Polymerase Chain Reaction (PCR).



International testing

Internationally-recognised seed testing procedures are compiled by the International Seed Testing Association (ISTA). Molecular tests for seed-borne pathogens commonly include protein-based, enzyme-linked immunosorbent assay (ELISA) tests or DNA-based PCR tests.

Testing procedures for the vegetable industry are often validated by the International Seed Health Initiative for Vegetable Crops (ISHI-VEG), which establishes guidelines for the use of seed health methods

by the vegetable seed industry.

ISH-VEG protocols are stringently tested before being endorsed and the methods are the outcome of one or both of the following two processes: a comparative test carried out by six to eight companies and public labs; or a peer review of the method description.



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Soil-borne plant pathogens: Common pests and methods for control

MANY PLANT DISEASES THAT ARE CAUSED BY SOIL-BORNE PATHOGENS CAN BE DIFFICULT TO PREDICT, DETECT AND DIAGNOSE. INVESTIGATIONS INTO THESE PATHOGENS ARE FURTHER LIMITED BY THE NATURE OF THE SOIL ENVIRONMENT, WHICH IS EXTREMELY COMPLEX. THIS MAKES GAINING AN UNDERSTANDING OF SOIL-BORNE PLANT PATHOGENS, AND THEIR ASSOCIATED DISEASES, A CHALLENGING ASPECT OF PLANT BIOSECURITY, WRITES AUSVEG BIOSECURITY AND SPECIAL PROJECTS CO-ORDINATOR JESSICA LYE.



Soil-borne plant pathogens generally fall under the category of virus, bacterium, fungus or nematode. They can be extremely effective at surviving long periods without a host plant and their pervasive nature makes control and treatment particularly challenging. The ability of soil-borne pathogens to survive independently in the soil between planting periods varies greatly with each pest.

Pathogens known as saprophytes can survive during growing periods by taking nourishment from plant debris or other organic matter, both on and in the soil. However, other pathogens, such as fungi and nematodes, can survive in the soil for long periods without the aid of decaying plant matter. Survival is aided by their ability to form robust resting structures (e.g. cysts, spores and hyphae), which enable them to survive long periods without a suitable host, or when environmental conditions are unfavourable.

Common examples

Fungal pathogens are perhaps the most common

type of soil-borne plant pest. Clubroot, caused by the fungus *Plasmodiophora brassicae*, affects cruciferous crops such as rocket and kale and results in distortion of roots, as well as wilting and stunted growth of the affected plant.

Damping off is a serious plant disease that commonly results in seedling death and is often caused by soil-borne fungal pathogens, such as *Rhizoctonia solani*. Symptoms range from rotting within the seed coat before germination to a decay of the taproot or rootlets following germination. Surviving plants are stunted and affected areas often show uneven growth.

Bacterial soft rot can result when wound sites of plant roots are infected with bacteria of the *Erwinia* species. This results in a slimy rot that can affect any part of the plant, including heads, curds, edible roots, stems and leaves. Both Damping off and Bacterial soft rot affect a broad range of vegetable crops.

Pathogenic nematode species can be particularly pervasive in soil. For this reason they can pose a serious threat to vegetable crops. *Globodera rostochiensis*, or Potato cyst

nematode (PCN), infects solanaceae such as potato and eggplant. Cysts from this pathogen store hundreds of eggs that can remain dormant in the soil for up to 30 years. These cysts are commonly dispersed when infested soil is carried by machinery, footwear or on plant roots to other growing areas.

Biosecurity best practice

Due to the invasive nature of soil-borne pathogens, biosecurity best practice is important for controlling the risks presented by these pathogens.

There are several cost-effective biosecurity measures that can be implemented in order to reduce the risks presented by soil-borne pathogens.

- Stay up-to-date with risks presented by regional pathogens.
- Understand the pathogen survival mechanisms in combination with the crop and environmental conditions that favour disease development.
- Keep growing areas free of

weeds as these may become incubation hot spots for pests between crop cycles.

- Implement farm sanitation practices to remove or reduce pathogen carry-over to other growing areas. These can include the use of foot baths before and after entry into growing areas, and regular cleaning of equipment and vehicles.
- Rotate growing areas with non-host crops to limit the build-up of pathogen populations.
- Test soil to identify heavily infested growing areas before planting susceptible crops.
- Monitor growing areas and keep records on crop and disease history.
- Remove and destroy infected plants to reduce disease spread within a crop and carry-over to the next crop.



For further information, see the farm biosecurity website at www.farmbiosecurity.com.au, or contact AUSVEG Biosecurity and Special Projects Co-ordinator Dr Jessica Lye on (03) 9882 0277 or email jessica.lye@ausveg.com.au.



Keep growing areas free of weeds as these may become hot spots for pests between growing cycles.



Profile: Dr Jessica Lye

Dr Jessica Lye began in the role of AUSVEG Biosecurity and Special Projects Co-ordinator in September 2014.

Dr Lye comes to the role with strong academic credentials from Monash University in Clayton, Victoria, where she completed a Bachelor of Science majoring in Genetics and Zoology, before undertaking Honours-based research in Plant Biotechnology. She completed her PhD last year, which focused on elucidating the function of metal transport proteins using fruit flies as a genetic model organism. Dr Lye is excited to be working in the field of biosecurity and is looking forward to this challenging role.

“Biosecurity at the farm gate through to the national level is an extremely important aspect of maintaining Australia’s strong agricultural industry. I’m looking forward to continuing my education in biosecurity and relaying that information to growers Australia-wide. Continued education in this sector at all levels can only strengthen the Australian vegetable industry,” she said.

Dr Lye will work in conjunction with AUSVEG Biosecurity Advisor, Dr Kevin Clayton-Greene, to co-ordinate the AUSVEG National Biosecurity Program. The program has been designed to improve management of, and preparedness for, biosecurity risks in the vegetable and potato industries at the farm gate and industry levels. This program is run in conjunction with Plant Health Australia.

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Integrated Crop Protection: Making the process easier for growers

PROTECTING CROPS IN A SUSTAINABLE WAY IS VITAL FOR AUSTRALIAN VEGETABLE PRODUCERS TO IMPROVE PRODUCTIVITY AND PROFITABILITY. HOWEVER, CROP PROTECTION PRACTICES, CAPABILITIES AND ATTITUDES DIFFER THROUGHOUT THE COUNTRY. THIS RESEARCH EXTENSION PROJECT AIMS TO EDUCATE GROWERS ON INTEGRATED CROP PROTECTION AND WORK WITH THEM TO INDIVIDUALLY TAILOR IT TO BEST SUIT THEIR FARMS.

Despite the ongoing investment in plant health and crop protection R&D projects for the levy-paying vegetable industry, the uptake of Integrated Crop Protection (ICP) practices – or the broad management of pests, diseases and weeds – has been lacking. It is clear that a one-size-fits-all approach is not a realistic concept in this instance.

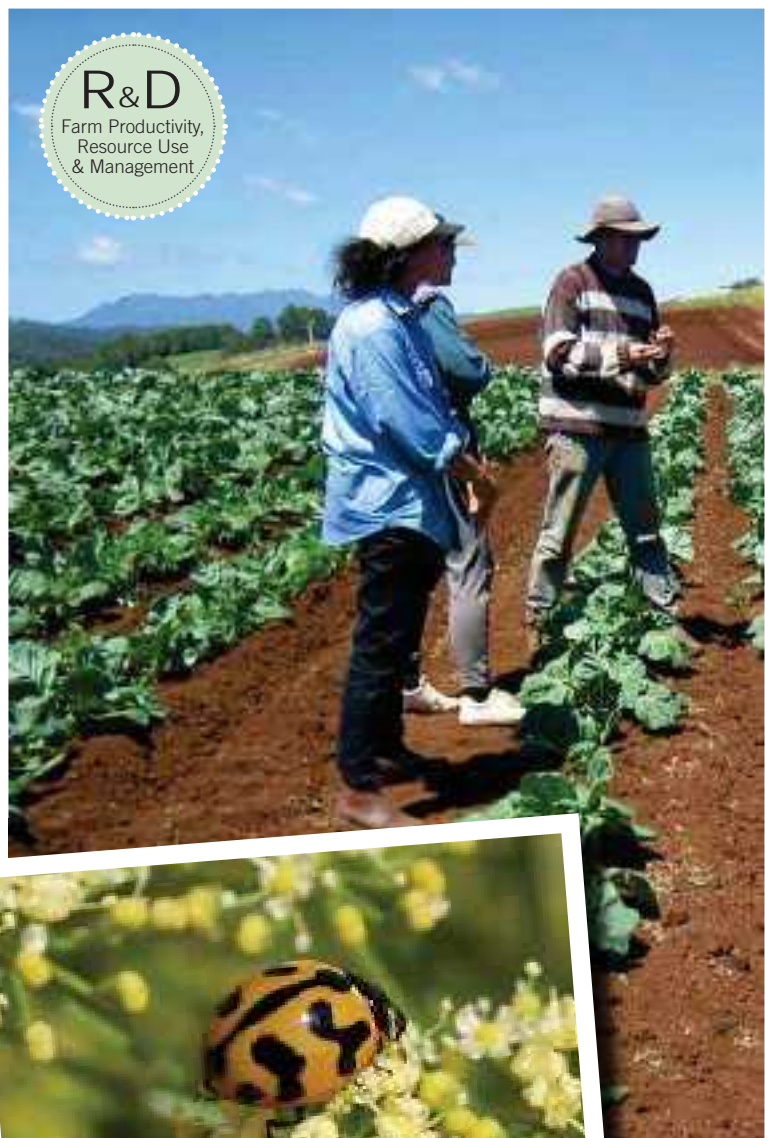
This is why a three-year ICP extension project, run jointly by RMCG and Applied Horticultural Research (AHR) and funded by Horticulture Australia Limited using the National Vegetable Levy and matched funds from the Australian Government, has been introduced to make the process of ICP implementation easier for growers. It runs in conjunction with the Soil Wealth project, which aims to build the soil management skills and knowledge of vegetable growers and advisors (featured in the September/October edition of *Vegetables Australia*).

Much like its counterpart,

the ICP project has been introduced to disseminate the existing information on ICP and build upon this knowledge to help growers achieve long-term sustainability and profitability. The objective is to make the information accessible, practical and relevant to individual farming operations so growers can progress in implementing ICP on their farms.

“This project is about enabling growers to make better decisions with respect to their ICP and the decisions relating to the use and application of chemicals, as well as management of weeds and diseases,” RMCG Principal and Joint Project Leader Dr Anne-Maree Boland said.

“We want to provide the necessary information and knowledge, but every grower is different. We’ve looked at different grower groups and analysed what their needs are so we can get the most relevant information out to them. We want growers to lead the



discussion and act as advocates for the project to get the information out further.”

Project overview

The research project will focus on four key areas: improved awareness and understanding of pests, weeds and diseases; better management of chemicals; application of Integrated Pest Management (IPM); and looking beyond IPM to the management of weeds and diseases.

A major element of the project will be visiting growers on their properties and working out how ICP best fits in with the existing strategies they have put in place.

“Research projects often focus on one part of the production system, so if a

grower changes one thing it affects everything else. This isn’t about a recipe of how to do things; it’s about changing something on a property and managing some of the other aspects that might change as well,” Dr Boland explained.

The ICP project has committed to six demonstration sites that can ultimately be used for both the ICP and Soil Wealth projects. As some issues cross over the two projects (such as the management of soil-borne diseases), Dr Boland believes it provides a unique opportunity that will ultimately benefit growers.

“The big advantage for both projects is that we have technical experts on both ICP and soil attending these sites, so growers can get a lot more out of it than just focusing on one issue.



The Integrated Crop Protection (ICP) project has committed to six demonstration sites that will involve technical experts on both ICP and soil.

“For IPM, we have experts Dr Paul Horne and Jessica Page involved who are very well regarded by individuals in the industry and work with a lot of these growers already,” she said.

Importance of ICP

Growers with insufficient knowledge in crop protection can run the risk of exceeding

maximum residue limits, or using chemicals in an inappropriate way and harming themselves. There is an inherent risk to both individuals and the vegetable industry as a whole if growers are not responsible about the use of certain chemicals.

Given this, Dr Boland maintains that the project will take an integrated approach on crop protection issues and



educate growers on some of the alternative options available.

“In the past there have been a lot of really good research projects but they’ve often been done in isolation. They didn’t necessarily get adopted by farmers or into the farming community because they were only looking at one issue,” she said.

“There are different issues around Australia and we want to cover all the commodity groups as well as things like IPM, disease management, biofumigation, nematode control, minimal tillage and improving organic matter. We also welcome input from growers who are interested in becoming involved as a demonstration site.

“We’re saying that what growers choose to do with respect to ICP also influences other things on the farm and they also have to focus on sustainability and cost-effectiveness. It’s about getting knowledge out into the industry as well as tapping into the knowledge of industry experts and advisors, and using them as another resource.”

Dr Boland hopes that the

comradery of growers who become involved in the project and attend the demonstration sites will have a flow-on effect to the wider industry.

“The project can facilitate growers learning from each other’s experiences. It is an ICP continuum – being aware of the regulatory compliance for chemical use and adhering to these, to implementing good practices and then looking at IPM and beyond.”



For more information on the Integrated Crop Protection project, contact Anne-Maree Boland on (03) 9882 2670 and anne-mareeb@rmcg.com.au (SA, VIC, TAS and WA) or Dr Gordon Rogers on (02) 9527 0826 and gordon@ahr.com.au (QLD, NSW and NT).

If you would like to be involved and kept up-to-date on both projects, please visit: www.surveymonkey.com/s/soilwealth_ICP_EoI.
Project Number: VG13078

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Company boss shares Elders wisdom

FOLLOWING THE APPOINTMENT OF A NEW CEO WITH EXTENSIVE EXPERIENCE IN THE AGRICULTURAL SECTOR, ELDERS IS WELL ON ITS WAY TO CEMENTING ITSELF AS A PURE AGRIBUSINESS IN THE AUSTRALIAN MARKET. *VEGETABLES AUSTRALIA* SPEAKS TO ELDERS MANAGING DIRECTOR AND CEO MARK ALLISON ABOUT HOW HIS VALUABLE INDUSTRY EXPERIENCE WILL UNDERPIN THE CORE VALUES OF THE BUSINESS AS IT MOVES FORWARD.

A birthday is the perfect time to reflect on the past and refocus your direction for the future. If it so happens to be your 175th birthday, that's even better.

Just ask rural services company Elders and its Managing Director and CEO, Mark Allison. As the iconic agribusiness celebrated this impressive milestone in 2014, it also presented the chance to reassess the structure of the business and its key focus areas to prepare for the road ahead.

That repositioning began with the appointment of Mr Allison, who took over the reins of Elders on 30 April this year. Having grown up on a sugar cane and beef cattle property in far north Queensland, he's come a long way on his journey to the top job. It's a rise helped in no small part by the passion for agriculture which appears to be embedded in his genetic makeup, and a lengthy history of agribusiness experience.

After completing an Agriculture Science Degree at the University of Queensland, Mr Allison went on to establish a 30-year career in the industry, starting as a research agronomist in the Darling Downs/Lockyer Valley horticultural region before running a suite of

agribusinesses including CropCare, Wesfarmers Landmark, Farnoz (now Adama) and Grain Growers Limited. He then joined the Elders family as a Non-Executive Director.

"Fundamentally, I've always loved agriculture," Mr Allison explained. "I believe it's a highly important and honourable industry sector and I have always wanted to make a contribution either through research, commercially, industry shaping policy development or in other ways."

Giving back to industry

Taking on the role of CEO at Elders was a challenge from the outset, but it was also an opportunity to give back to the industry. One of the first priorities was to strategically reposition the business to ensure a strong platform for future growth.

"At that time, we set four key priorities for Elders as an agribusiness. The first was around reducing injuries to our people, particularly in our livestock area and manual handling branches. The second was to improve operating performance because the business hadn't been performing as well as it could



have been over the previous five years," Mr Allison explained.

"The third was to refocus our leadership renewal in the business and the fourth was around capital structure. One of the biggest issues for Elders over the years was very high term debt and we wanted to get that down so we could run the business and go back to focusing on key segments like

horticulture."

Despite only being in the top job for little more than 12 months, firstly as Executive Chairman and then as CEO, the results so far speak for themselves. In the past year, Mr Allison said that Elders has halved the injury rate within the business and its operating performance has turned around by \$75 million.



Elders Managing Director and CEO Mark Allison examines the produce at Adelaide Central Market.

"We've also appointed two new agribusiness directors and we've got our term debt down to zero. We're basically into a phase now where we can run Elders like an agribusiness, which allows us to focus on our customers," he said.

"From an Elders viewpoint, moving to new banking facilities with flexible working capital lines on normalised commercial terms is such a key platform to actually run a business as a premier agribusiness in Australia."

The new Elders

Already, Mr Allison's experience has been invaluable both in terms of predicting where the industry is heading and putting the necessary structures in place to ensure Elders is well equipped to recognise the greatest opportunities for industry and growers alike.

"In terms of our near proximity to the Asian growth market, it seems to be the biggest opportunity for the wider industry. When I consider my time running an Israeli company and the prospect of horticultural products being exported from Israel into Europe for a significant profit, it's clearly achievable. I think we need to be highly innovative and highly focused, but the Asian market is clearly the opportunity," he said.

"I suspect in 175 years of Elders history, I'm the first agronomist to be the CEO. With that in place, I've already started the process of refocusing our technical service area to make an elite team and add significant value all the way through to growers. With that will come speciality products and services, but the key platform will be refocusing our technical services."

In particular, he said that one of the critical issues is converting the R&D dollar into real benefits for growers, which is currently being addressed.

"With Free Trade Agreements

and various reduction into international entry barriers, we have to be highly productive and highly efficient," he explained.

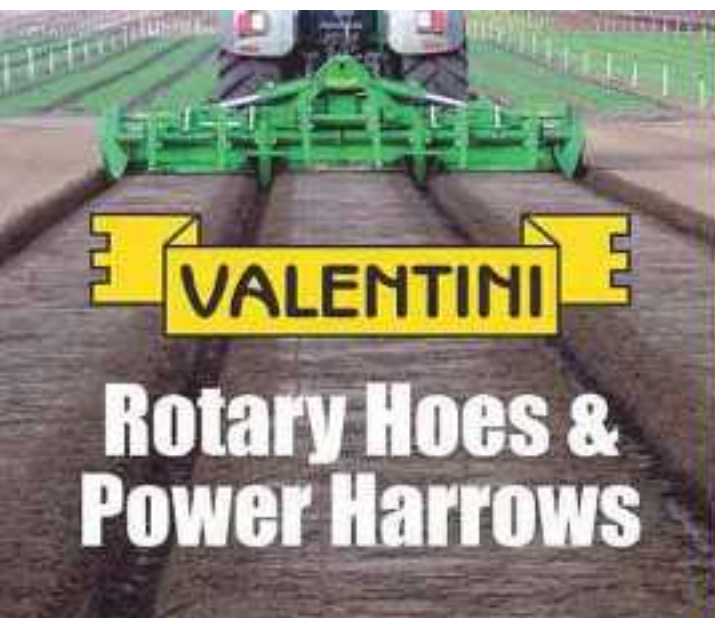
"The horticultural sector is a highly attractive sector from our viewpoint. My vision is to strengthen and grow our position by adding value to growers in that area. I'd like to see opportunities for joint research; I'd like to see opportunities for joint capacity building in terms of education. That is really what Elders has done best over its history."

Vibrant veggies

While Elders has faced its fair share of hurdles in the past few years, Mr Allison said there is a "legacy of goodwill" and strong and visible support from its customers and key stakeholders, which is deeply acknowledged by the business.

"Looking at the vegetable industry for instance, the vibrancy, the positive view, the innovation and willingness to control what can be controlled shows there is a very vibrant and positive culture within the horticultural industries that is driving deep innovation," he said.

"Elders is a core part of the rural regional Australia fabric. I can see there is significant support for Elders behind the scenes and that is appreciated. We hope to repay that with our enhanced services."



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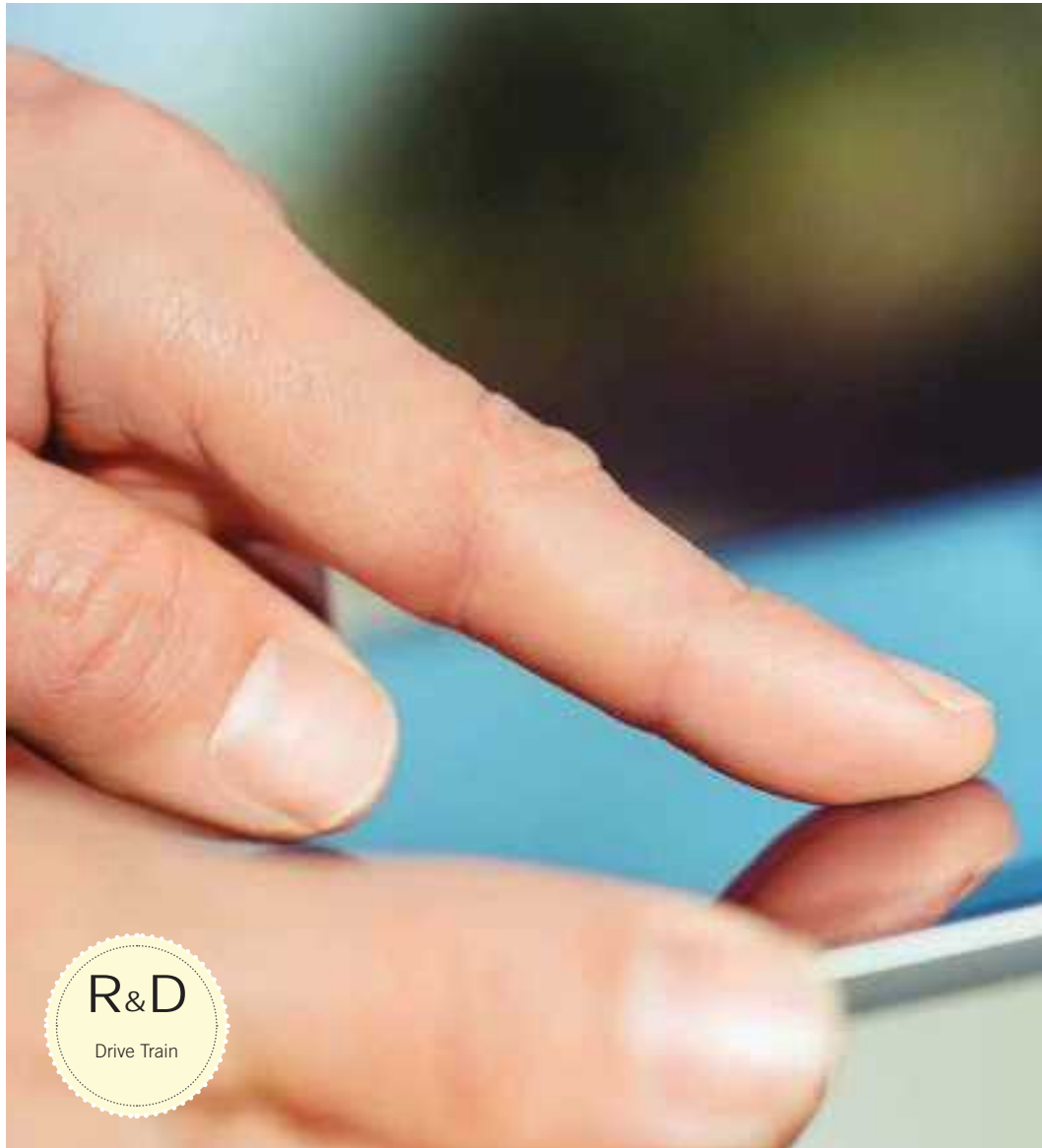
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Emerging technologies and their impact on productivity



THE DEVELOPMENT AND ADOPTION OF EMERGING TECHNOLOGIES IS A MAJOR COMPONENT OF PRODUCTIVITY GROWTH, AND TRADITIONALLY, AUSTRALIAN VEGETABLE GROWERS HAVE BEEN LEADERS IN FINDING SOLUTIONS TO VARIOUS CHALLENGES. *VEGETABLES AUSTRALIA* ANALYSES THE EMERGING TECHNOLOGY TRENDS THAT COULD ULTIMATELY RESULT IN INCREASED PRODUCTIVITY ON VEGETABLE FARMS.

Productivity is an economic measure of efficiency in production processes. Essentially, productivity measures the number of inputs required to produce output.

There are a number of factors that can influence the rate of productivity, including policy settings, climate variability and the development and uptake of new technologies. Over the last 20 years, productivity growth in agriculture has remained relatively strong, with this strength varying between industries and regions.

In the vegetable industry, research and development plays

an integral role in supporting the development of emerging technologies, ensuring that growers are aware of and able to implement the technologies that would be of most benefit to their farming enterprise. However, continued innovation and adoption of key productivity-enhancing technologies is essential for vegetable growers to continue reducing production costs and improving their viability.

This article will focus on a number of emerging technologies which are available and/or will become available over the next 5-10 years and

are expected to have a positive impact on vegetable growers' productivity.

Sensors

Air and soil sensors provide a real-time understanding of current farm moisture and body of water conditions. These sensors enable growers to monitor on-farm conditions through a computer and make improvements to water and soils with the objective of improving yields.

Crop sensors are used to identify crop health across the field using infrared light.

These sensors inform automated application equipment of the correct amounts of fertilisation and chemical use needed to achieve optimum yields. This helps growers apply fertiliser in a very effective manner, reducing costs and potentially increasing output.

Variable rate swath control

The application of seed, fertiliser and herbicides can be a costly exercise, especially when overlap occurs. With the assistance of GPS mapping, swath control shuts off sections

Irrigation using smartphone technology is set to become a standard practice on many vegetable farms.

of the applicator as it enters an overlap area, so farmers can avoid applying the same input twice on the same piece of land.

Similarly, variable rate technology incorporates historical soil tests and a prescription GPS map for an input. This then facilitates the most productive application rate of inputs. The major benefit is that an operator can now apply a more consistent and effective rate of fertiliser over the entire field, depending on the needs of each section of land at that point in time.

Air sensors enable growers to monitor on-farm conditions.



Agricultural robots

Agricultural robots are used to automate agricultural processes such as harvesting, soil maintenance, weeding, planting, irrigation etc. Although agricultural robots are currently in their infancy for vegetable production and harvesting in particular, the times are changing.

Most recently, the vegetable industry has funded the development of an intelligent farm robot dubbed 'Ladybird'.

It is fitted with a fully-automated arm, which can be programmed for weeding and harvesting (see page 12 for more information). This technology, although still being developed, could revolutionise the vegetable industry. The next challenge is extending this technology to growers and identifying ways to ensure that many vegetable growers can use and afford to buy this technology.

Smartphone irrigation

In the future, growers will be able to irrigate their crops using a phone or computer, as opposed to driving to each field. This technology, coupled with moisture sensors, will ensure the efficient use of water, reducing water waste and therefore reducing water costs. One would expect this would result in less water being used and producing the same or more outputs – a productivity improvement.

Final word

Overall, the emerging technologies currently being developed and further refined could potentially provide significant productivity improvements for Australian vegetable growers. While a number of these technologies still have up to a decade before they are commercially available, many could be possible in the next few years and some are already available.

Australian vegetable growers must continue to innovate and actively implement new technologies to ensure they remain competitive on both the domestic and global stage.



with Scott Mathew

NOW THAT THE VEGETABLE INDUSTRY IS ON THE CUSP OF THE SUMMER SEASON, IT IS THE PERFECT TIME FOR GROWERS TO REVIEW THEIR CURRENT PRACTICES ON-FARM, PARTICULARLY IN REGARDS TO THEIR INTEGRATED PEST MANAGEMENT PROGRAM. SYNGENTA TECHNICAL SERVICES LEAD, SCOTT MATHEW, EXPLAINS WHY IT'S IMPORTANT TO REMEMBER THE SIGNIFICANT ROLE THAT BENEFICIAL SPECIES PLAY IN VEGETABLE CROPS THROUGHOUT THE COUNTRY.

Many jobs need to happen at once on the farm and there is currently a flurry of activity on most properties, but you should still take a moment to consider what else may be going on in your crops.

There could well be a lot more 'in the balance' than what is immediately obvious, so it is important to think about what impact your insecticide spray program could have on a range of hugely beneficial species.

Responsible use of selective insecticides will effectively control the

pests you are targeting, while minimising disruption to beneficial species.

Examples

Green lacewings are one such beneficial and could be out there attacking a wide range of pests including aphids, moth eggs and small larvae, scales and whiteflies.

Trichogramma carverae – minute wasps that lay their eggs into a range of moth eggs – develop into fully formed wasps inside the moth eggs and emerge instead of caterpillars.

Similar to many other species of ladybirds, *Hippodamia variegata* (otherwise known as Spotted Amber Ladybirds) have a voracious appetite for aphids. They eat at least 12 different species of aphid and a hungry adult or mature larva can eat up to 50 aphids a day. They have a life cycle of three to four weeks, an

ability to fly 20km or more and each female can lay up to 300 eggs.

Stethorus beetles are also very active at this time of year. Renowned for destroying spider mites, these tiny black beetles have a huge appetite and consume twice the amount of spider mites compared to predatory mites. Both the larvae and adult beetles feed on all stages of spider mites and their eggs. They can eat 25-80 mites a day and have a life cycle of about 40 days.

A considered approach to pest control will preserve beneficial species and create a more robust Integrated Pest Management strategy.



Q For more information or to ask a question, please contact your local Syngenta Territory Manager, the Syngenta Advice Line on 1800 067 108, visit www.syngenta.com.au or email Vegetables Australia: info@ausveg.com.au. Please note that your questions may be published.

Veggie Stats: Broccoli

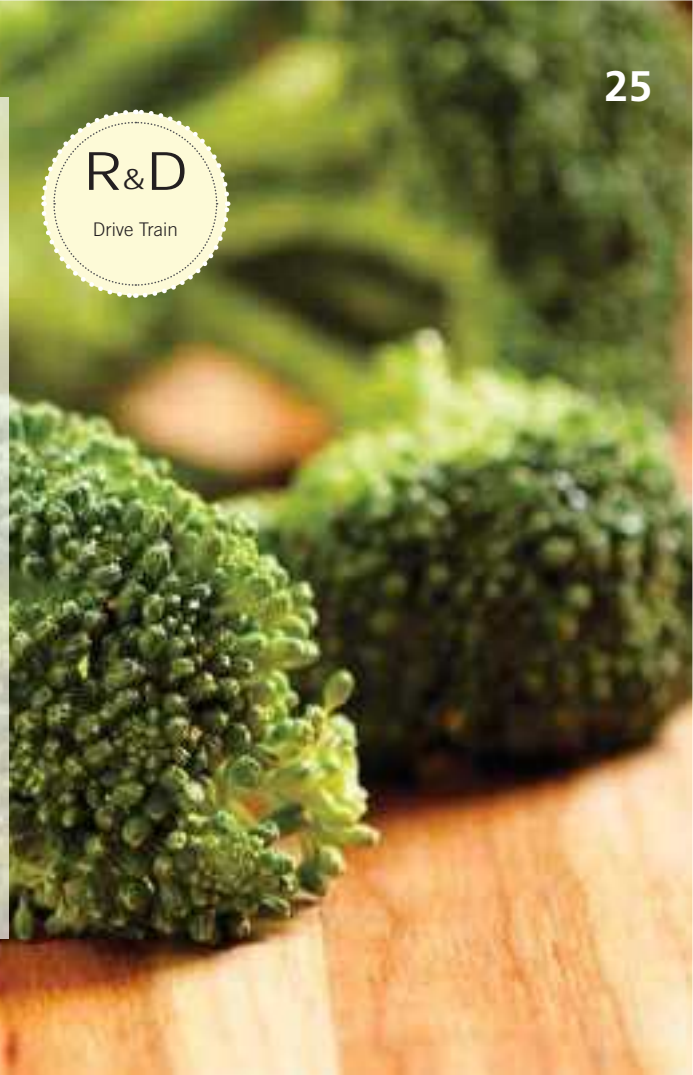
TO ENABLE DEEPER INSIGHTS INTO THE FINANCIAL, PRODUCTION AND EXPORTING PERFORMANCE OF KEY AUSTRALIAN VEGETABLE PRODUCTS, WE HAVE DEVELOPED A SERIES OF SIX CROP-SPECIFIC VEGGIE STATS PROFILES. THE THIRD INSTALMENT OF THIS SERIES WILL FOCUS ON BROCCOLI PRODUCTION.



The following Veggie Stats article has been developed specifically to give readers a detailed snapshot of the key facts and figures on broccoli. Veggie Stats utilises data from the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) and the Global Trade Atlas, funded by Horticulture Australia Limited (HAL) using the National Vegetable Levy and matched funds from the Australian Government.

It is important to note the data itself provides a broad indication of the performance of broccoli growers and should be interpreted carefully. In addition to this, the information provided is not specific to every Australian grower since each enterprise operates differently from one another.

The data is presented at the national level and therefore does not account for differences among jurisdictions.



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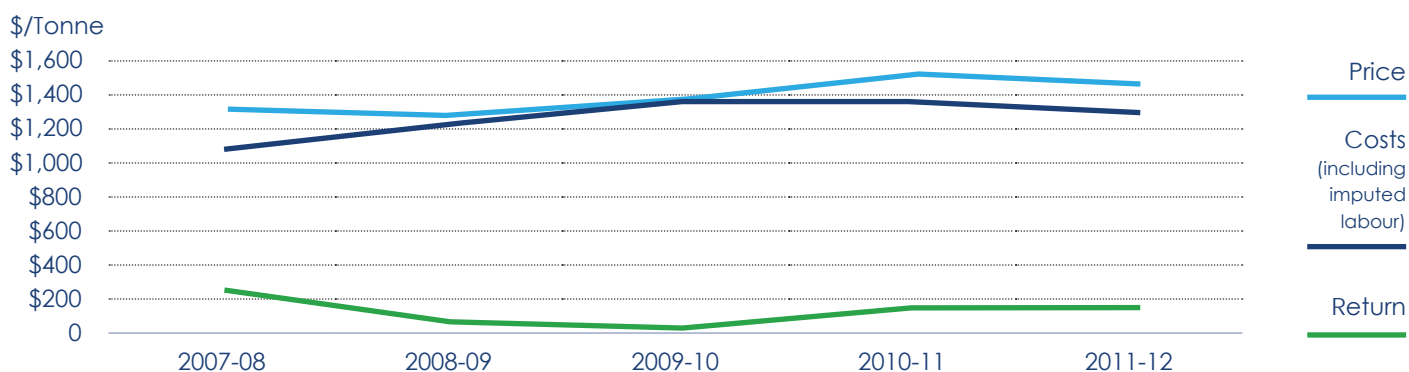
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VEGGIE STATS: BROCCOLI

Broccoli Production – Key facts and figures

- Broccoli growers' returns, on average, fell considerably in 2008-09 and 2009-10 but increased the following two years.
- Since 2007-08, average domestic broccoli prices have increased by 12%, whilst average costs have increased by 21%.
- Broccoli production has been growing on average, with production levels in 2011-12 almost double the amount of broccoli produced in 2006-07.
- Fresh headed broccoli and cauliflower exports totalled around \$6.5 million in value terms in 2013. Australia exported \$4 million worth to Singapore and more than \$2 million to Brunei Darussalam.

Australian Broccoli Growers' Financial Performance (average per farm)



Source: ABARES vegetable farm survey 2011-12 and 2012-13, page 72
Returns: The difference between price and costs (including imputed labour).

Current Financial Performance

Australian broccoli growers' returns on average totalled \$166 per tonne in 2011-12, up 6% on the previous year.

In 2011-12, the average price received per tonne of broccoli was \$1,453, whereas the average cost to produce a tonne of broccoli was \$1,287.

Long Term Trends

Broccoli growers' returns, on average, have varied considerably from year to year, with returns remaining relatively stable in 2010-11 and 2011-12.

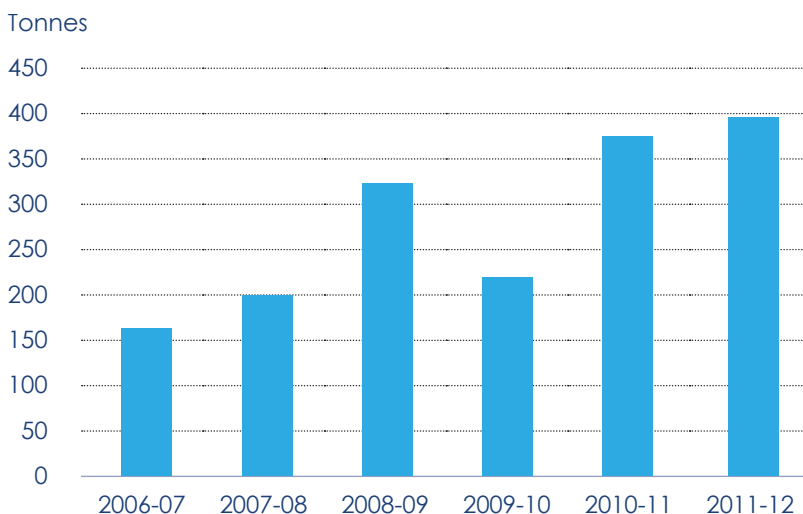
Australian Broccoli Growers' Production (average per farm)

Australian Broccoli Production

Australian broccoli production per farm averaged 396 tonnes in 2011-12, up 6% on the previous year.

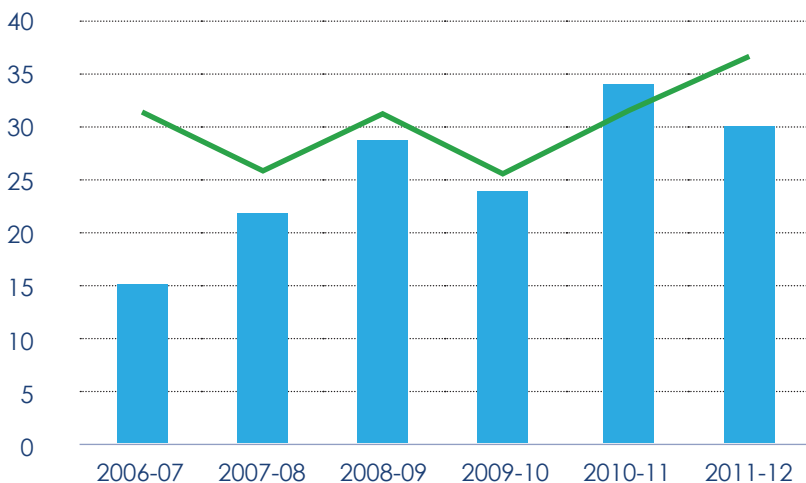
Average farm broccoli production has been increasing over time and has almost doubled since 2005-06.

Source: ABARES vegetable farm survey 2011-12 and 2012-13, page 72



Area Planted v Yield (average per farm)

Hectares



Tonne/Hectare

14
12
10
8
6
4
2
0

Australian Broccoli Production

The average area planted in 2011-12 fell by 12% from the previous year.

Broccoli growers' experienced their highest yields in 2011-12 at 13 tonnes per hectare.

Area Sown
Yield

Source: ABARES vegetable farm survey 2011-12 and 2012-13, page 72

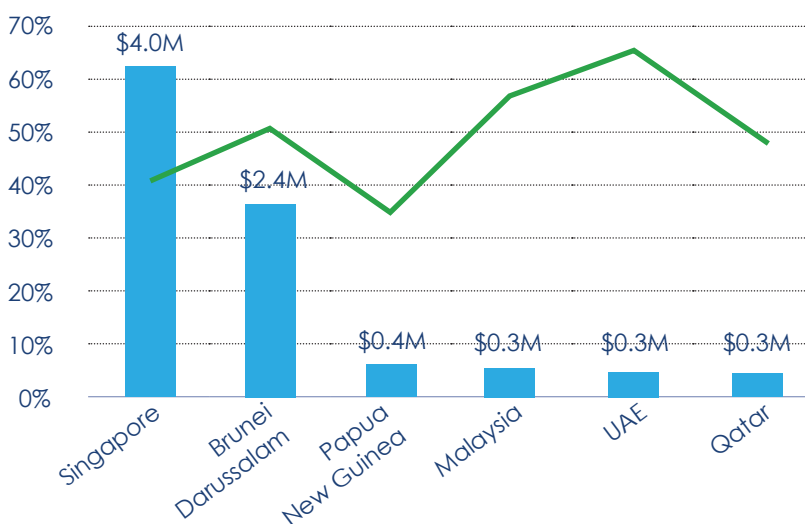
Australian Headed Broccoli and Cauliflower Exports and Export Prices Received

Exports

The majority of Australia's headed broccoli and cauliflower exports were sent to Singapore and Brunei Darussalam.

Australia's broccoli exports received the highest price per kg from the UAE and Malaysia, whilst the lowest export price was Papua New Guinea at \$1.80 per kg.

% of Exports



Unit Price per KG

Source: UN Comtrade, 070410 Cauliflowers and Headed Broccoli

Q&A Young grower profile

Name: Ben Schreurs

Age: 23

Location: Clyde, Victoria

Works: Schreurs & Sons

Grows: Celery, Leeks, Baby Leaf



How did you first become involved in the vegetable industry?

Growing up on the farm it was hard not to have an interest in the family business. My father, uncles and grandparents put a lot of time and effort into establishing a great business. It was through their passion and commitment that I was able to become involved – firstly, as a young fella sitting on the side of the forklift or in the truck with my father helping him load the produce for market on the weekend. As I grew older I was lucky enough to have the opportunity to work part time during school holidays in the packing shed, learning more about the quality of the product

and the processes involved.

At the end of almost 50 years in business, the decision was made by my father and uncles (the Directors of the company up until 2013) that it was time to step aside. It was then that my two business partners (Adam and Chris Schreurs) and myself got together to discuss the idea of continuing on with the family tradition. We all agreed to the business transition and eagerly proceeded to form a succession plan that would equip each of us with the ability to manage our own separate departments for which we had a natural passion. We set up a new entity in which we would establish a new brand for the company and move forward with reinvigorated purpose.



**EMERGING
TECHNOLOGIES**

What is your role in the business?

As a Director, I have a hand in multiple departments but spend most of my time managing sales and logistics.

How would you describe your average day at work?

Every day I co-ordinate the flow of work from harvest to delivery to ensure that we are able to fulfil our customers' orders efficiently and meet a range of specifications. I work closely with our production staff to deliver sufficient throughput across various process lines

and liaise daily with clients to satisfy their requirements and work together on their long-term strategic goals.

What emerging technologies has your farm embraced and how has it benefited the operation?

UNIPOLAR WATER

Since the company transition took place in 2013, much focus has been on reinvestment and innovation. Various technologies have been trialled and implemented to improve our processes and product quality.

One of these has been the implementation of Unipolar

water in washing and sanitising vegetables. Unipolar is a system that generates active anti-microbial compounds directly from water by electrolysis which has allowed us to sanitise our product without the need to add any chemicals.

The benefits of the Unipolar system include automated regulation of wash water and a reduction in total plate counts in wash water by more than 99 per cent (compared to standard sanitisers which only achieve a 90-99 per cent reduction). This has allowed us to control pH and Free Chlorine levels in our wash water without worrying about dosage rates and ongoing chemical costs. More importantly, it has given us improved product shelf life.

WATER JET CUTTING

In our business we have recognised the importance of high-quality, safe and sanitary products, particularly when it comes to pre-packaged goods. It's important in all stages of production that we minimise risks and do everything we can to create a safe product that looks and tastes great.

Cutting our vegetables using water is both a safe and efficient practice that gives us the assurance of a clean cut every time. By cutting vegetables with water we reduce the chance of exposing our product to bacteria and pathogens which can easily enter a cut surface via a dirty knife or another type of blade.



What other technologies is the farm looking to adopt in the future?

Eventually we will be redesigning our packing shed in a way that ▶

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Long-term this will also mean permanent relocation of our packing and processing facilities, our offices and ultimately our business. This type of relocation does not happen easily. Some of the biggest challenges include finding the right soil and water resources for our needs, significant capital investment, sourcing labour from less populated areas and reconfiguring logistical and transport arrangements.

How do you think more young people could become encouraged to take up jobs in the vegetable industry?

Young people should view our industry as being diverse. The vegetable industry provides opportunities for people with different interests and they don't necessarily require the

background in horticulture. Our business employs people with a variety of skills who specialise in different areas; for example, sales and business, food science, admin, management, maintenance and mechanics just to name a few.

Young people also want to know that they have potential to develop and progress in their career so it's important that we provide them with this opportunity and give them a chance to work towards their personal aspirations.

If you weren't working in the vegetable industry, what would you be doing?

I would like to further my business studies. I'd like to be involved in sales, business strategy or management if I was to work somewhere else.

Where do you see yourself in five years?

In the next five years we will see a lot more changes and hopefully continuous growth. It would be hard to imagine myself doing anything else. I hope to see the business grow and look forward to the opportunities we have ahead of us.



will bring greater efficiencies through automation and better process flow. The problem with the current facility is that things have been progressively added on as they were needed.

When we look at a new set up we will need to carefully plan a space that will cater for our needs now and for the future. With labour costs accounting for a huge chunk of our expenses, it will be vital that we invest in systems that allow us to work leaner and smarter.

What do you enjoy most about working in the vegetable industry?

The vegetable industry is exciting and challenging because every day there are so many different variables to contend with. The manufacturing and selling of our products is not as straightforward and monotonous as is the case with some industries. Our production lines and our labour resources need to be flexible to contend with the variables we face and part of my job is to ensure that we remain as consistent as possible with our quality and output.

As much as I enjoy production and logistics, what happens in the field is even better. The vegetable industry, and our business, is unique because we nurture the product from the very beginning to the end: from the seed that is sown in the nursery that is then planted in the paddock and eventually harvested, to the food that we



eat on the plate. Everything that happens in between is so crucial and a lot of time and effort goes into each process. There is a lot involved and plenty to be passionate about.

The exciting thing about being involved in our business is that I am able to see the growth and improvement that is driving the company forward. Our industry has a lot to offer to the growing populations and economies in this part of the world and it's key that we are able to produce and market our products in a way that is going to attract new and sustained interest in quality Australian produce.

The emerging middle class,

particularly throughout south-east Asia, is just one example of why we see great potential for our company to increase in scale and diversity.

What are some of the biggest challenges you face as a grower?

Urban development is our biggest pressure and threat to production. The encroaching urbanisation in our area has forced us to look at other locations to find suitable and affordable land that will enable us to grow our crops and hopefully increase production.

Cucumber green mottle mosaic virus confirmed in NT

CUCUMBER GREEN MOTTLE MOSAIC VIRUS HAS BEEN DETECTED IN WATERMELONS AND PUMPKINS IN THE NORTHERN TERRITORY. IT IS AN IMPORTANT REMINDER FOR VEGETABLE GROWERS TO USE GOOD ON-FARM BIOSECURITY PRACTICES TO PREVENT THE POTENTIAL SPREAD OF THE VIRUS.

The Cucumber green mottle mosaic virus (CGMMV) was first discovered in the United Kingdom and is now widespread in Europe and Asia. CGMMV was first detected in Canada in early 2013, and shortly after, in the United States. However, this is the first instance of a CGMMV incursion in Australia.

The virus is a part of the *Tobamovirus* genus. One well-known member of this genus is Tobacco mosaic virus, which has the dubious honour of being the first virus ever discovered, as well as the first to be purified. Like other members of the *Tobamovirus* genus, CGMMV is a robust virus that is extremely good at surviving outside of the host plant. The virus can survive in soil or on farm equipment for long periods of time and affects cucurbits.

Key facts

Fortunately, there is no known insect vector for CGMMV. The virus is mechanically transferred

through infected farm tools, on hands, or by plant-to-plant contact. Entry of the virus into plant cells occurs through plant wounds and transfer of the virus may be advanced by regular handling of plants, especially in growing systems where plants are regularly pruned, staked or handled.

The symptoms of CGMMV can manifest as:

- Mottling of the leaves on cucurbit species, such as cucumber, melon, watermelon, bitter-gourd, bottle gourd, zucchini and squash;
- Rotting, yellowing or dirty red discolouration of the internal fruit; or
- Malformation of the fruit shape.

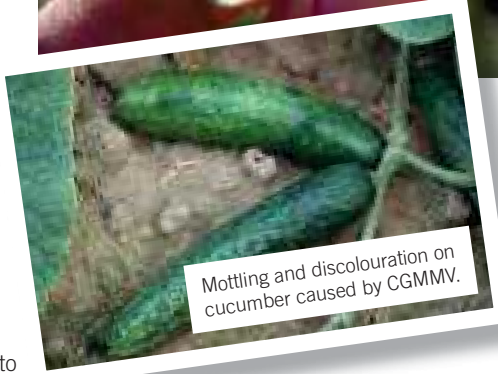
At least five strains of the virus have been found worldwide and host range can vary depending on the strain. Other

mosaic diseases, caused by potyviruses, are known to occur in northern Australia and express similar symptoms. This makes it difficult to visually identify CGMMV. However, the virus can be confirmed by laboratory analysis from seed or plant tissue.

This virus is also very adept at surviving in the seed coat. During the early stages of the CGMMV threat, AUSVEG worked to ensure minimal disruption to cucurbit seed import by providing technical advice on current, validated methods of testing for CGMMV in seed. During this time AUSVEG also worked closely with the Northern Territory Farmers Association to ensure that information regarding the CGMMV incursion was relayed to growers.



Leaf symptoms on field grown melon leaves.



Mottling and discolouration on cucumber caused by CGMMV.

Virus management

The CGMMV incursion has emphasised the importance of good biosecurity practices at the farm gate, as well as the need for early reporting of exotic pest threats. Regular cleaning of equipment, packing materials, and vehicles, as well as regular monitoring of crops for signs of disease are some simple measures that can have a positive impact on biosecurity.

Biosecurity at the border can also be improved by ensuring that imported seed has been tested for known plant pests.

Images courtesy of Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org

i Any unusual plant pest should be reported immediately to the relevant state/territory agriculture agency by contacting the Exotic Plant Pest Hotline on 1800 084 881. Early reporting increases the chance of cost-effective control and eradication.

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Workshops and EnviroVeg Industry Leaders Breakfast

AUSVEG recently ran three successful EnviroVeg and Biosecurity workshops for growers in Virginia, South Australia; Coffs Harbour, New South Wales; and Cranbourne, Victoria. Across the workshops, growers heard from a range of speakers on energy efficiency, on-farm power generation, drip irrigation technologies in greenhouses, resistance management, product stewardship, biosecurity and the EnviroVeg program.

The growers who attended the workshop in Cranbourne were introduced to Scott Kwasny, AUSVEG Minor Use and Agronomy Co-ordinator. Mr Kwasny will be the point of contact for all vegetable growers around the country regarding issues of minor use and emergency permits. Mr

Kwasny is based in the AUSVEG Melbourne office and growers are encouraged to contact him directly about issues related to minor use and chemical resistance matters (see page 44 for more information).

Leaders Breakfast

In addition, AUSVEG hosted an EnviroVeg Industry Leaders Breakfast in Devonport,

Tasmania. The event attracted professionals from agribusiness, including consultants, researchers and regional vegetable growers. The focus of the breakfast was the topic: "Where environmental sustainability meets profitability" and a broad range of agricultural business practices were discussed, from livestock to horticulture.



Attendees were pleased to hear from three informative speakers, Anna Renkin (RM Consulting Group), Jordan Brooke-Barnett (AUSVEG SA) and keynote speaker and former ABC Rural journalist, Eliza Wood (Mt Gnomon Farm). Discussions were held on soil

carbon, nitrogen use efficiency, the EnviroVeg Platinum program and more broadly, environmental accreditation within agriculture.

AUSVEG would like to thank all the speakers and industry members who contributed to making the breakfast a success.

Produce seconds can become number one

As consumers choose the largest, best-looking produce at the point of sale, supermarkets and greengrocers are asking for higher cosmetic standards from growers.

The difficulties faced by the producer to sell lower grade produce also has environmental and social implications. So what other uses are there for the rejected produce?

Solutions

Some of these 'seconds' can be sold at an increasing number of outlets, but this is often not an option for growers who cannot afford the time required to set up their own regular shopfront. Increasingly these seconds are being re-used as organic fertiliser on-farm, or even used to produce methane for on-farm biofuel energy generation. However, another option is to sell lower grade produce to other companies that can use them in

their own processed products.

For example, the Lamattina family grows around 65,000 tonnes of carrots annually and has recently started juicing their seconds produce in a new factory near Mildura. Five tonnes of carrots can become one tonne of concentrate, which is shipped to Japan, diluted and bottled as a popular beverage. With the new factory they can now produce up to 21,000 tonnes of concentrate annually.

Overall, lower grade produce can create returns to the farm in a variety of ways – from creating organic fertiliser to generating on-farm energy. Redirecting seconds into another product line not only minimises waste, but may also create another stream of income. Innovations to secure markets for second-grade produce are important to both securing better environmental incomes and new profits for the Australian vegetable industry.





Left to right: Grain farmer and 2013 delegate Corbin Schuster, Bayer CropScience Australia and New Zealand Managing Director Dr Jacqueline Applegate, Future Farmers Network Chair Georgie Aley and Victorian Nationals MP Andrew Broad.

Youth Summit engages future leaders

OUR NEXT GENERATION OF HORTICULTURALISTS MUST FIND WAYS TO MEET THE FOOD REQUIREMENTS OF AN INCREASING POPULATION, WHILE USING FEWER RESOURCES. BAYER CROPSOURCE CEO FOR AUSTRALIA AND NEW ZEALAND, DR JAQUELINE APPLGATE, BELIEVES THE 2015 YOUTH AG-SUMMIT WILL PROVIDE AN OPPORTUNITY FOR FUTURE GROWERS TO LEAD THE WAY IN UNDERSTANDING, DISCUSSING AND SOLVING THIS GLOBAL ISSUE.

It is not going to be easy to feed nine billion people with less farmland and fewer resources than what is currently available today. The increasing pressures of degraded soils, a less-predictable climate and the need to further conserve water will present new and extensive challenges to the next generation of food producers, and will require a diverse set of innovative, evolving practices in order to solve them.

This is the scenario that the world faces in the year 2050, but with support for the industry through programs like the Youth Ag-Summit, we will also help prepare a new generation of skilled agriculturalists using sustainable farming techniques to meet these challenges.

Next year the global Youth-Ag Summit will take place in Canberra and will attract young leaders passionate about agriculture from around the world to come together to form ideas, share visions and find sustainable agricultural solutions to address the increasing need

for healthy, nutritious food. The event will be hosted by Bayer CropScience and the Future Farmers Network Australia (FFN) and will be held from 24-28 August 2015.

The 2015 Summit was launched at Parliament House, Canberra on 2 October. Previous attendees and federal politicians were present at the launch, including Victorian Nationals MP Andrew Broad, Shadow Agricultural Minister Joel Fitzgibbon and Victorian Independent MP Cathy McGowan.

What to expect

The Summit challenges youth to address what is arguably the biggest issue facing the world today: how do we feed ourselves?

Not only is the Summit a unique forum for youth leaders to bring their fresh and innovative thinking to these monumental tasks, but it also provides a global platform to allow youth to engage with

current and future agricultural leaders. Attendees of the previous Summit had realised that they would only be able to resolve these important issues by working together.

The 2015 Summit follows on from the inaugural 2013 Summit held in Canada, where over 100 participants from around the world shared their ideas in an open dialogue about the future of agriculture. The week of presentations, tours, events and discussions subsequently spurred over 350 localised actions initiated by the participants and their mentors.

The energy and momentum gathered by the first summit motivated Bayer CropScience to continue funding the event globally and it is expected that the 2015 event will generate a similar amount of enthusiasm.

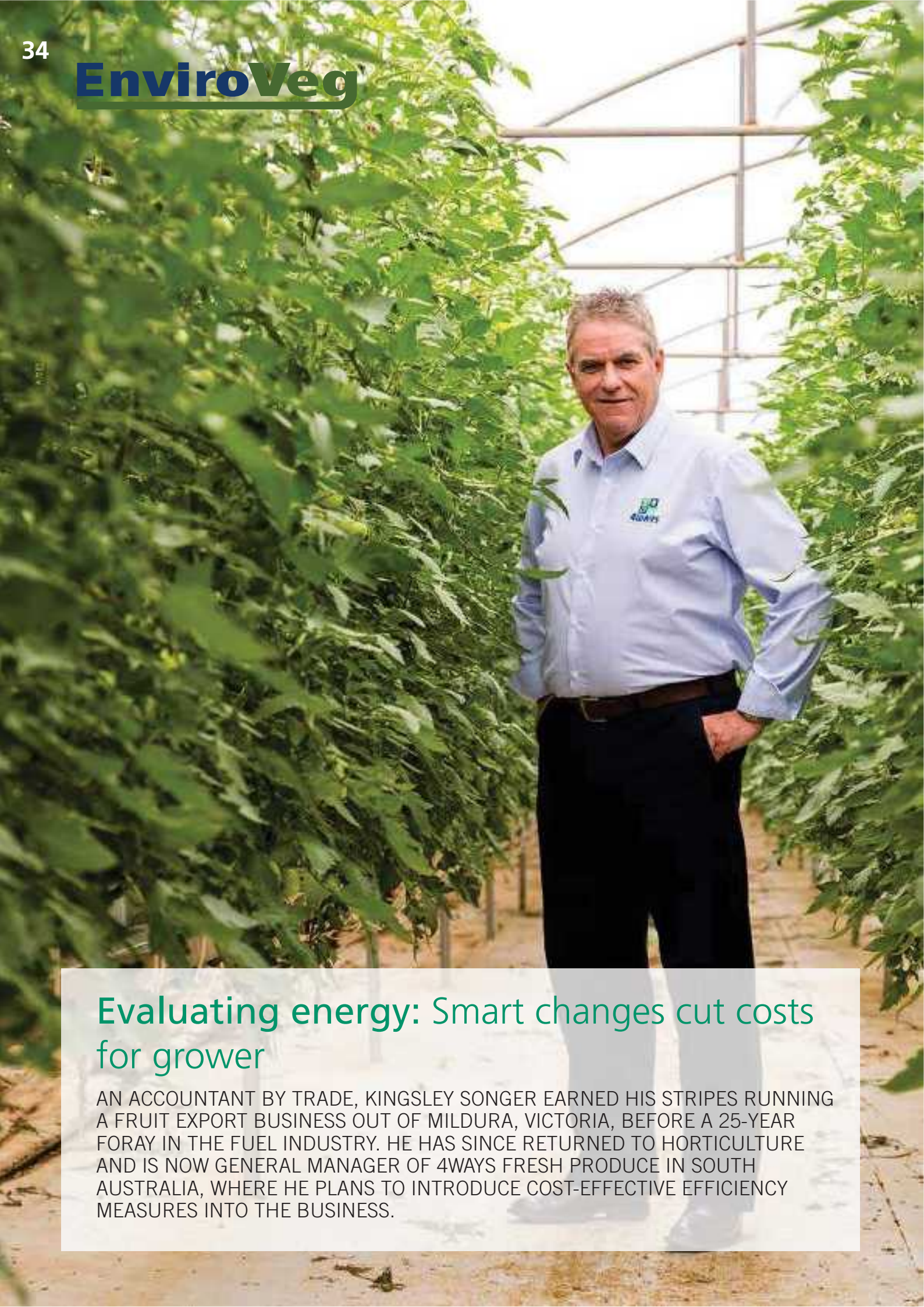
However, new ideas about sustainable production may not be the only benefit to come out of the conference. It is hoped that the excitement around the event will also germinate an influx of new horticulturalists

who have the skills to meet the food requirements of the future.

How to enter

Prospective attendees of the 2015 Summit in Canberra can win their place by writing a 1500-word essay that answers the following questions: 'What are the underlying causes of food insecurity and what local and global effects can it have on a population?' as well as 'What changes to agricultural practices or personal and community behaviours could help solve these issues to create a more sustainable local and global society?'

The conference is open to inspired young people between the ages of 18-25 who are personally, professionally or academically interested in agriculture, food security, environmental and social stewardship. Please visit www.youthagsummit.com for more information and to submit your entry.



Evaluating energy: Smart changes cut costs for grower

AN ACCOUNTANT BY TRADE, KINGSLEY SONGER EARNED HIS STRIPES RUNNING A FRUIT EXPORT BUSINESS OUT OF MILDURA, VICTORIA, BEFORE A 25-YEAR FORAY IN THE FUEL INDUSTRY. HE HAS SINCE RETURNED TO HORTICULTURE AND IS NOW GENERAL MANAGER OF 4WAYS FRESH PRODUCE IN SOUTH AUSTRALIA, WHERE HE PLANS TO INTRODUCE COST-EFFECTIVE EFFICIENCY MEASURES INTO THE BUSINESS.

It took a recent on-farm energy audit trial for Kingsley Songer to tackle the high energy bills at 4Ways Fresh Produce in Virginia, South Australia.

“To be honest it wasn’t really an area we’d given a lot of thought to,” Kingsley says of the audit trial, which was carried out on the 4Ways Fresh property as part of a National Vegetable Levy funded project (VG13054 – *Economic evaluation of farm energy audits and benchmarking of energy use in vegetable farms*).

“We could see the bills (for electricity, LPG and diesel) coming in all the time but it’s not the sort of thing you do until something prompts you.

“The whole process was pretty un-intrusive. (The auditor) had his own equipment and did his own calculations; we provided our accounts and showed him around the business.”

The audit report suggested that 4Ways Fresh could reduce its energy usage by more than 30 per cent. The report divided the farm’s overall energy usage into separate areas of the plant, making it easy to highlight areas in which improvements could be made.

“The few hours of input were well and truly worth the exercise. There are savings to be made from areas where things can be done a little bit better, like working the equipment a bit ‘smarter’ by reducing its capacity when it is not needed.”

Small changes, big differences

After receiving the report, Kingsley was convinced that he could easily begin making improvements without spending tens of thousands of dollars. He recognised that investing a small amount into retrofitting existing equipment could result in further efficiency increases



and quickly pay for themselves by providing significant savings into the future.

“In the cool rooms, for example, you can put automatic opening and closing doors, better insulation on the floor... and improve the efficiency up to 70 per cent. These things are not too expensive and have a relatively short payback,” he says.

Other small changes that Kingsley is looking to make include installing more efficient lighting – changing from the existing heat-radiating globes to smart LEDs that don’t radiate heat – and including sensors to dim or turn themselves off when they are not needed.

Dollars and sense

According to Kingsley, “The amount of energy saved depends on how much money the grower wants to spend.” Looking ahead, he says that even the more expensive options like electric forklifts and solar panels have potential secondary benefits.

“Solar would solve a couple of issues for us – not only would it give us relief from the cost (of electricity), but it would help to relieve our transformer during peak periods and provide us with electricity during power outages,” he adds.

These benefits come alongside potential electricity savings of

44 per cent, as well as 64 tonnes of carbon dioxide being released into the atmosphere every year. Savings can also be found in other areas, including water. “There was talk of putting in a small dam where we could capture water off our tunnels to use alongside the bore water for irrigation in our greenhouses.

This would lead to running our bore pump less and using less town water as well,” Kingsley says.

With such large reductions in energy and use of resources available, the potential economic and environmental benefits are clear. Overall Kingsley was very pleased with the auditing process.

“When I’ve seen the scope of the report produced, for the amount of input, it will be very beneficial in the short and long-term.”



Photographs by Andrew Beveridge.

Developing export opportunities in Asia and the Middle East

A BUSY CALENDAR FOR EXPORT DEVELOPMENT HAS ENCOURAGED VEGETABLE GROWERS FROM ACROSS THE COUNTRY TO ATTEND THREE KEY INTERNATIONAL TRADE SHOWS, WHERE THE QUALITY OF AUSTRALIA'S PRODUCE WAS ON SHOW TO THE WORLD.

Hong Kong

In September, a group of Australian vegetable growers travelled to Hong Kong to display their produce at Asia Fruit Logistica, the continent's leading trade show for the international fresh fruit and vegetable market.

The impressive Australian contingent helped to enhance the fresh, clean and safe

perception of Australian horticultural products, while also providing an opportunity for growers to create business relationships in Hong Kong and south-east Asia. Consumer enquiries in Hong Kong ranged from vegetable production in Australia to supply and product availability.

The Australian Vegetables exhibit also played host to a networking event that – with



A selection of the booths at Agritech Japan.

the assistance of the Australian Trade Commission – saw wholesalers, retailers and buyers from across Asia enjoy some Aussie hospitality. This networking event allowed vegetable growers to informally network with a large range of key industry members from across Asia.

Key messages from consumers in Hong Kong suggest that Australian

carrots, broccoli, celery and leafy vegetables are all in high demand and that innovative and pre-packed options are popular among retailers. Many retailers enquired about any new and innovative products that haven't reached Asia yet – this reinforces the need for innovation and product development in Australia.

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Japan

Hot on the heels of the successful booth at Asia Fruit Logistica, another delegation of growers attended the Agritech trade show in Chiba, Japan. Over 38,000 delegates passed through the doors of Agritech Japan in October, making the show one of the largest in the country.

Being one of the few



The Australian Vegetables exhibit at Asia Fruit Logistica in Hong Kong.

international exhibitors, the Australian Vegetables stand saw plenty of fanfare from Japanese consumers, buyers and growers, with many coming to the exhibition to learn more about vegetable production in Australia.

Dubai

For the final event in the 2014 export calendar, a group of vegetable growers from across Australia departed for Dubai in November. The World of

was attended by Australian industry representatives, as well as a range of wholesalers, importers and retailers based in Dubai, and was a key stepping stone in creating valuable relationships with key industry stakeholders in Dubai.

In a time where the potential



Australian representatives at Agritech Japan.

Perishables trade show was the first foray into trade shows in the Middle East and, pleasingly, was a huge success.

With the assistance of the Australian Trade Commission in Dubai, a networking event was held at the Australian Vegetables exhibit. The event

of exporting to China dominates the headlines, Dubai is clearly an underrated market for Australian vegetables. However, as one of the largest export markets for fresh vegetables by value, there is enormous potential for local vegetable growers to trade in Dubai.



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Knowledge seeps in through school veggie gardens

IN AN EFFORT TO BRING AGRICULTURE INTO THE CLASSROOM IN AN ENGAGING AND PRACTICAL WAY, INDUSTRY REPRESENTATIVES HAVE DEVELOPED THE SCHOOL VEGETABLE GARDEN DRIP KIT FOR AUSTRALIAN STUDENTS. THE KIT AIMS TO EDUCATE YOUNG PEOPLE ON EFFICIENT AGRICULTURAL PRACTICES, PROMOTE HEALTHY EATING AND BETTER THEIR UNDERSTANDING OF WHERE VEGETABLES COME FROM.

A joint initiative between Netafim, Syngenta and AUSVEG, the School Vegetable Garden Drip Kit is a tool that can bridge the knowledge gap between students and Australian vegetable growers. It gives students an opportunity to plant seeds, nurture their crop through irrigation management and finally harvest the produce.

"The ultimate goal is for the kit to be used by schools as a tool to encourage healthier eating habits among the youth and increase their consumption of locally grown vegetables," Netafim Marketing Manager Australia/New Zealand Stuart Upton explained.

"Educating our young on the origin of food and bringing agriculture into the classroom with fun, practical tools like the drip kit will not only better their understanding and encourage healthy eating habits, but it is the only way to ensure the

future success of Australia's primary industry.

"That's why we are engaging with government to raise the profile of agriculture in education and it is so important we all share the same message and get behind initiatives like this."

Inside the kit

A key component of the kit is the irrigation equipment, which mirrors the same technology used to irrigate some of the largest agricultural projects across the globe. The kit includes Netafim's smaller Miniscape dripperline, which is easy for students to install and use.

"The dripperline has highly efficient, integrally welded 2L/Hr drippers spaced every 30 centimetres to ensure the vegetables are getting the exact amount of water they require



without wasting a drop. Of course every vegetable garden is set up differently so we have also included all the accessories and connectors needed to irrigate an area of up to 50 square metres," Mr Upton said.

"There is also a Syngenta seed pack. The packs include five different types of seeds with more than enough of each variety to ensure the students enjoy a well balanced mix of Aussie vegetables."

Domestic users, including growers, can also purchase a retail version of the kit. This version excludes the seeds and also has a shorter coil of the Miniscape dripperline.

"Growers who are unfamiliar with drip irrigation or would like to trial it on a smaller scale before installing it on their

farms are able to do so on this highly scaled down, simplistic version which still demonstrates the importance of sustainable irrigation practices and the ease of operating a highly efficient drip system."

Why drip irrigation?

Drip irrigation is considered to be one of the most efficient forms of irrigating, as a slow and steady release of water at the plant base – around the root zone – can result in improved crop quality and yield. This benefit is clearly demonstrated to students using the kit.

"Plants only need a certain amount of water and nutrients in order to grow. By applying the water directly to the root zone in a uniform and precise manner, we can maximize a plant's potential," Mr Upton explained.

"Drip irrigation uses up to 50 per cent less water and can have up to a 40 per cent increase in yield over other methods which simply cannot deliver the uniformity without the waste. For example, the soil can leach, you get run-off, there's waste through wind drift and you're wetting the foliage which can cause disease.

"Delivering precise amounts of water and nutrients to the root zone without saturating the soil means that the plant is always performing at its peak and is therefore able to produce more and better quality vegetables."

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AUSVEG continues to advocate for the rights of Australian vegetable growers throughout all avenues of the Australian media landscape. AUSVEG has represented the vegetable industry on many issues important to growers, receiving nation-wide media coverage and reaching millions of Australians in recent months.

Wide ranging interview

AUSVEG CEO Richard Mulcahy gave a wide ranging interview on ABC Radio in Tasmania where he discussed a variety of key issues facing Australian vegetable growers. The interview was syndicated across ABC stations nationwide.

Russian sanctions on vegetable imports

Mr Mulcahy expressed concerns that trade upheavals resulting from the Russia/Ukraine crisis could hurt local growers. He said the prices of some commodities in Europe had already dropped dramatically as a result of exporters losing markets, and that Australian consumers must support the local vegetable industry to help Australian vegetable growers.

Senate inquiry into R&D funding

Mr Mulcahy discussed the Senate inquiry into R&D and marketing levies in agriculture, saying that the levy system has been hugely beneficial to growers and their communities. He said that growers see the benefits of the levies and that R&D funding is important for the continued development



of the Australian horticultural industry.

Country of Origin Labelling

AUSVEG Manager – Communications Andrew MacDonald appeared across a range of media discussing recent recommended changes to Country of Origin Labelling laws. He expressed doubts that the proposed changes contained in a report released by the Standing Committee on Agriculture and Industry would provide greater clarity to consumers, as it relied on a system where “mostly local” and “mostly imported” would be used to describe the actual volume of ingredients originating in a particular country. Mr MacDonald said that, in its submission to the Inquiry, AUSVEG supported scrapping the “Made in” label entirely, replacing it with “Manufactured in” to ensure consumers were

not misled as to the origins of a product’s ingredients.

Earlier in October, AUSVEG Spokesperson Michael Bodnarcuk featured in print media backing claims from the Victorian Farmers Federation that enforcement of Country of Origin Labelling laws had been inadequate to date, and that these laws needed to be strong enough to prevent produce of dubious origin being brought into Australia with ambiguous labelling.

Leadership and innovation mission

AUSVEG Spokesperson Stefan Oberman featured on radio discussing an industry leadership and innovation development mission to Japan and South Korea. He said the event was important for the future of the Australian vegetable industry, as the young growers explored new markets in the region and met with

key representatives from Asia’s largest retailers. The contingent also met trade officials in the export space and attended one of the region’s largest agricultural trade shows.

Key topics for September/October:

- Russian sanctions on vegetable imports could affect the local market.
- Agricultural R&D levy system important to continued industry development.
- Country of Origin Labelling laws need to be more strongly enforced.
- Industry leadership and innovation mission visits Japan and South Korea.



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Gold Coast to host 2015 Convention

AUSVEG is pleased to announce that the 2015 National Convention will be held at Jupiters Hotel and Casino on the Gold Coast from 25-27 June.

The 2015 Convention follows on from the tremendous success of the 2014 National Convention in Cairns, which was attended by over 1,100 domestic and international delegates.

"The National Convention, Trade Show and Awards for Excellence attracts more members of the Australian horticultural industry than

any other event, making it a must-attend event for growers, suppliers, wholesalers and agribusinesses alike," AUSVEG Manager - Marketing and Events Lauren Winterbottom said.

"AUSVEG is planning to up the ante in 2015, with the Gold Coast Convention promising to be the most successful yet and a number of exciting developments soon to be announced."

The 2015 National Convention is expected to generate much interest from around Australia and the world.

New horticultural body announced

Horticulture Innovation Australia Limited (HIA) is the new research, development and marketing body that will support the investment of levy and matched government funds in Australia's \$9.5 billion horticulture industry.

The establishment of HIA follows a recent independent report into the performance of Horticulture Australia Limited, which recommended a change to a new, grower-owned research and development corporation.

HIA will be led by Chairman Selwyn Snell and Deputy

Chairman Robert Clark, alongside its Board Members Ridley Bell, David Cliffe, Susan Finger, David Moon, Stephen Morrow, Mark Napper and Peter Wauchope.

AUSVEG CEO Richard Mulcahy welcomed the announcement of the new HIA Board and said it was paramount that the interests of Australian vegetable and potato growers are met within any new structure, particularly in terms of the continuity of important research programs and initiatives.

Updated fungicide registrations

Following collaborative work with the Australian vegetable industry, Syngenta's AMISTAR® label has been updated to include new registrations in brassicas and radishes, while its SWITCH® label has new registrations for lettuce and leafy vegetables.

AMISTAR Australian label extensions include *Alternaria* Leaf Spot in brassica vegetables; White Blister in brassica vegetables, brassica leafy vegetable crops, radish

and horseradish; *Sclerotinia* Rot in brassica vegetables and brassica leafy vegetables; and Downy Mildew in horseradish.

SWITCH is now registered for control of *Sclerotinia* rot in lettuce and leafy vegetables including spinach, silverbeet, kale, endive, mustard, cress, chard, rocket, Asian leafy greens and Chinese cabbage.

For more information visit: www.syngenta.com.au.



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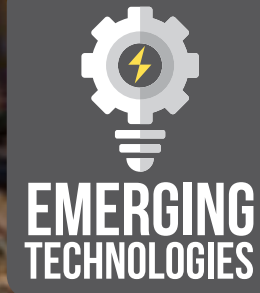
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With increased productivity and efficiency for the entire farm operation in mind, John Deere has released the MyJohnDeere Operations Centre, which allows users to manage their machinery and develop agronomic insights.

“Farm management is extremely complex for producers and requires alignment and co-ordination of people, equipment, inputs and assets,” John Deere Intelligent Solutions Group Product Marketing Manager Chris Batdorf explained.

“That’s why we are collaborating with many manufacturers and service providers so they can integrate with the Operations Centre. This open platform will provide customers with a complete and comprehensive solution for their data management needs.”

Innovative tools such as ‘Field Analyser’ and ‘Difference Maps’ help customers gain insight into their operations for improved decision-making to increase yields, optimise costs and manage risk.

As an increasing amount of production and machinery data is collected, growers ultimately need more efficient ways to transfer this data. In the past, growers had to download the data on a memory card or a USB flash drive and then transfer the data to a computer in the farm office or at home.

To combat this, John Deere has introduced Wireless Data Transfer which enables the wireless transmission of data between the GreenStar™ 3 2630 display, MyJohnDeere.com and the producer’s farm management information system.

In the field

Expanding on the existing John Deere Field Connect soil moisture monitoring system, John Deere has added new environmental sensors and features to provide additional information to producers of all types of agricultural crops.

The new environmental sensors include: weather



station, rain gauge, temperature sensor, pyranometer and leaf wetness sensor.

The new sensors provide data on temperature, wind speed, wind direction, humidity, solar radiation, leaf wetness and rainfall. The sensors are installed in customer fields as part of the Field Connect Gateway.

“With this detailed site-specific information, producers are able to more efficiently utilise water resources, as well as schedule and perform other agronomic practices dependant on soil and environmental conditions,” John Deere Intelligent Solutions Group Product Manager Nicholas Shafer said.

“This results in more efficient use of inputs, fuel and labour saving and additional yield potential from the crop.”

Field-specific soil moisture and environmental data is transmitted to a secure website for viewing, and customers can program the system to receive alerts based on set parameters. Field Connect charts the data from the readings over time, allowing producers to identify trends. The system can also be customised to each field, depending on the objectives of each customer, to more effectively optimise the productivity of each field.



For more information, visit:
www.deere.com.au

CALENDAR



25-27 June 2015

National Convention, Trade Show and Awards for Excellence

Where: Gold Coast, QLD

What: The National Convention is the biggest event in Australian horticulture, providing local and international delegates with an opportunity to forge relationships with members of the industry. In 2015, delegates will travel to Jupiters on the Gold Coast. This is a must-attend event for growers, suppliers, wholesalers, researchers and agribusinesses alike.

Further information: Please contact AUSVEG on (03) 9882 0277, email convention@ausveg.com.au, or visit www.ausveg.com.au/convention

24-28 August 2015

2015 Youth-Ag Summit

Where: Canberra, ACT

What: The 2015 Youth-Ag Summit, which will be hosted by Bayer CropScience and Future Farmers Network Australia, will provide a forum for young agricultural leaders to discuss potential solutions to global issues and act on solutions for sustainable agriculture that will help feed a growing population. Applicants aged 18-25 who are interested in attending the Summit must submit an essay outlining their ideas on the causes, impacts and possible solutions to global food security.

Further information: Please visit www.youthagsummit.com for details on the application process.

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Product	Success™ Neo	Belt®	Coragen®	ViVus® Gold
Active ingredient	Spinetoram	Flubendiamide	Chlorantraniliprole	Polyhedrovirus
Chemical Group	Spinosyns (Group 5)	Diamides (Group 28)		Unspecified
Labelled pests of potatoes:				
Potato moth	✓	✓	✓	✗
Helicoverpa (Heliothis/budworm)	✓	✓	✓	✓
Loopers	✓	✗	✗	✗
Lightbrown apple moth	✓	✗	✗	✗
Approved for other root and tuber crops?	Beetroot, carrots, celeriac, Galangal, parsnips, radishes, daikon, sweet potatoes, swedes and turnips	Sweet potato, beetroot, carrot, radish, swede, turnip, chervil, parsnip, yam, taro, dasheen, daikon, galangal, burdock, cassava and celeriac	None	None



Talk to your CRT Local Bloke and find out how you can benefit from Success Neo.



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Minor Use Awareness Program: Latest news

THERE ARE EXCITING DEVELOPMENTS UNDERWAY IN THE MINOR USE AWARENESS PROGRAM, FOLLOWING THE APPOINTMENT OF A NEW REPRESENTATIVE FOR VEGETABLE GROWERS TO CONTACT DIRECTLY.

The Minor Use Awareness Program is a national campaign designed to educate growers and raise awareness of the issues surrounding minor use permits. Essential to the success of the program will be direct on-farm communication with growers and an education and awareness campaign regarding minor use within the industry.

The first annual Minor Use Education Symposium will be a key part of the program, bringing growers, researchers and industry members together to discuss minor use issues. Work is also underway to organise yearly Prioritisation Workshops, where growers and industry stakeholders will develop a list of priority minor use needs for the coming year.

New representative

Recently appointed AUSVEG Minor Use and Agronomy Co-ordinator Scott Kwasny will run the Minor Use Awareness Program. Mr Kwasny, a trained botanist, previously worked at CSIRO Plant Industry as a plant scientist across several disciplines and assisted with the worldwide initiative of the C4 Rice Project. He has now left the lab behind to join AUSVEG in this program.

Mr Kwasny will act as a much-needed link between growers and the minor use submission process. Given the limited funds the vegetable industry can allocate for minor use permits, generating the required data for priority chemicals is vital for the industry to efficiently prosper.

Mr Kwasny will function as a communication hub for growers, collecting and disseminating essential information. He will be regularly meeting with growers, engaging and consulting on the Minor Use Awareness Program and any pressing issues that are affecting growers.

Upcoming event

The inaugural Minor Use Education Symposium will be held in approximately March/April 2015, and will be the first major event of the Minor Use Awareness Program. The Symposium is for growers and industry stakeholders to meet, form networks and raise



awareness of the benefits of data-sharing opportunities across industry.

Growers and industry stakeholders are encouraged to attend, with limited places available. We will keep you updated on details of the event as they become available.



If you would like to get involved in the program, report a pest or disease issue or stay informed about minor use, please contact AUSVEG Minor Use and Agronomy Co-ordinator Scott Kwasny on (03) 9882 0277 or email scott.kwasny@ausveg.com.au.

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Minor-use permits

Permit Number	Crop	Pesticide Group	Active	Pest	Date Issued	Expiry Date	States
PER14896	Green Peas (processing)	Herbicide	Bentazone-sodium (Basagran)	Broadleaf weeds	1-Oct-14	30-Sep-19	Tas
PER14596	Brassicas	Insecticide	Chlorpyrifos	Vegetable beetle adults	1-Oct-14	30-Sep-19	WA
PER14842	Spring onions & shallots	Fungicide	Copper (Copper Oxychloride/Cuprous Oxide/Cupric Hydroxide)	Downy mildew	1-Oct-14	30-Sep-19	All states (except Vic)
PER14843	Celery	Insecticide	Indoxacarb (Avatar Insecticide)	Heliothis, Lightbrown apple moth, Lucerne leaf roller and Vegetable weevil	1-Oct-14	30-Sep-19	All states (except Vic)
PER14795	Lettuce, chicory, endive, radicchio, spinach, & baby spinach	Herbicide	Phenmedipham (Betanal)	Broadleaf weeds	1-Jul-14	31-Dec-15	All states (except Vic)
PER14493	Rhubarb	Fungicide	Phosphorous acid	Downy mildew	1-Jul-14	31-Jan-19	All states (except Vic)
PER14505	Snow peas and Sugar snap peas	Fungicide (PC)	Pyrimethanil	Grey Mould (Botrytis cinerea)	1-Jul-14	30-Jun-19	All states (except Vic)
PER14494	Celery, Silverbeet, Spinach, Chicory and Endive	Fungicide	trifloxystrobin (Flint 500 WG)	Silberbeet, spinach chicory, endive - Powdery Midew Celery - Cercospora leaf spot, Septoria leaf spot	1-Oct-14	30-Jun-19	All states (except Vic)
PER14906	Chinese onion, chives, shallots, spring onions, welsh onions	Fungicide	Triadimenol (Bayfidan)	White Rot	22-Oct-14	31-Oct-19	All states (except Vic)
PER14045 Version 2	Beetroot, Brassica leafy vegetables, broccoli, brussels sprouts, cauliflower, chicory, endive, radicchio, rocket, carrot, parsnip	Fungicide	Mancozeb + Metalaxyl (Ridomil Gold MZ)	Various fungal diseases	1-Apr-13	31-Mar-18	All states (except Vic)
PER14725	Capsicums, tomatoes, snow peas, sugar snap peas, Cucurbits, Asian Cucurbits	Miticide	Etoxazole (Paramite)	Tomato spider mites	22-Oct-14	30-Jun-18	All states (except Vic)

All efforts have been made to provide the most current, complete and accurate information on these permits, however we recommend that you confirm the details of these permits at the following APVMA website: <http://www.apvma.gov.au/permits/search.php>



Pacific & East Timor Seasonal Worker Program



Need productive, reliable seasonal workers?

MADEC is a not for profit, community based organisation and has been an Approved Employer for the Seasonal Worker Program (SWP) since 2009. The SWP program assists employers in horticulture, accommodation, aquaculture, cotton and cane with reliable, returning workers able to work in their business for between 4 and 6 months. These workers can return year after year, retaining skills and experience.

Countries eligible for recruitment under the program include East Timor, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. Growers and horticulture enterprises are encouraged to contribute to worker selection.

Benefits of using MADEC for recruitment

- ✓ *Team of State Managers to service industries in all locations*
- ✓ *Proven track record as an Approved Employer*
- ✓ *Management & maintenance of travel arrangements, lodgements, payroll and compliance documentation*
- ✓ *MADEC has successfully provided Pacific Seasonal Workers to growers of crops including mangoes, grapes, almonds, tomatoes, citrus, vegetables and berries*
- ✓ *MADEC has over 40 years experience providing workforce solutions for business*

Around the states

New South Wales



NSW Farmers has scrutinised the recent Food and Grocery Code of Conduct which was released in early August, and has been troubled over the growing gap between farm gate value of food and the price paid by consumers. NSW Farmers supports a prescribed code and believes the consultation paper identified many of the concerns within the food and grocery sector.

While the Code is a welcomed

step in addressing the imbalance of market power with regard to cost and risks faced by suppliers, NSW Farmers noted in its submission that, due to the high market concentration in the supermarket sector, the concerns of the behaviour of the major supermarkets are not limited to the aspects to be regulated by the Code. This includes issues such as misuse of market power, unconscionable conduct and the use of unfair contract terms that are not provided for within the Code.

NSW Farmers believes that enforceability of the Code by the ACCC, and a review of its membership to determine if strategic avoidance is occurring, will help to ascertain if the Code is effective or not.

In other news, the Australian

Pesticides and Veterinary Medicines Authority (APVMA) released its final report on fenthion in October. The review of fenthion commenced in the late 1990s based on concerns to the environment, human health and residues in food. After research into these areas, the APVMA has determined that the environmental impact of fenthion on water organisms is well above the recommended level.

The final round of submissions for fenthion received no further data or information to support its continued use. As a result, all horticultural uses have been cancelled, except for post-harvest dipping of tropical and sub-tropical inedible peel fruits.

Finally, NSW Farmers is keen to see New South Wales MP

Troy Grant step into the role of the state's Nationals leader and Deputy Premier. As the local member for Dubbo, Mr Grant is closely attuned to the concerns of the state and the troubles facing the agriculture industry. We congratulate Mr Grant on the election and look forward to his work in the role.

Peter Darley

NSW Farmers' Association
Horticulture Committee
Chairman
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Sydney, NSW 2000
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Fax: (02) 8251 1750

Tasmania



In the food world, we can often predict what is going to happen in the future in Australia by monitoring what is going on in the United Kingdom. Think about the growth of private label brands – it happened in the UK 10 years ago; Australian supermarkets even imported key staff from UK retailers to replicate their programs here. It didn't work there and it won't work here – but that's a story for another day.

In a 2012 UK report, *Catalyst for Change*, the National Farmers' Union (NFU) said Britain's self-sufficiency in vegetable production fell from 73 per cent in 1998 to 60 per cent in 2010. Poor returns were driving vegetable, potato and fruit producers into more lucrative cereal production.

The report blamed "poor supply chain practices and

a short-term approach to relationships between growers, intermediaries and retailers" for removing the financial incentive for the farmers to continue growing high-cost/high-risk fresh produce.

At the time, the NFU said: "Unless action is taken now we could see less home grown fruit and vegetables on supermarket shelves. This will mean more imported produce, less choice and ultimately higher food prices due to a lack of investment on farm.

"British growers want to do business with retailers, yet the sector is being driven to its limits and is evidently not coping with the strain. Against a backdrop of higher costs, lower profits and a falling market share, we desperately need to find better ways of doing business." Sound familiar?

Australian farmers are facing exactly the same pressures. They are being squeezed by a duopoly-dominated retail market, where the prices they receive often don't cover the cost of production, let alone provide them with a margin. Yet the mark-up at checkout still delivers high profits to the retailers and cheap prices to consumers.

So who's the bunny here? No prizes for guessing it is the farmer, at the bottom of the food chain, who is always the price taker. Why?

This is a classic challenge of social marketing: positive attitudes do not necessarily lead to a change of behaviour. People say they want to support local producers, and they say they buy Australian. In many cases, consumers do not realise they are not walking their talk, and their actions don't reflect their words. They buy cheap imported food because they generally don't make the effort to understand where it comes from. A case in point: the average shopper doesn't have a clue that most white garlic comes from China and has been bleached; finding fabulous Tassie-grown garlic takes a lot of effort.

Retailers and processors say they want to support Aussie farmers – it is now even a key theme in marketing programs. They say they only import fresh produce when Australian products are unavailable. But what does 'unavailable' actually mean? Generally, it doesn't mean that there is no Australian product in the marketplace. In normal times, we can

grow pretty much everything somewhere in Australia, pretty much all year round. More often, it means that the retailers and processors are not willing to pay a price that allows farmers to cover the cost of production or – heaven forbid – make a profit.

The British report made a number of recommendations for change, including:

- Long-term supply contracts to inject stability into the supply chain;
- Greater price certainty for growers through price formulae, market trackers and fixed prices agreed in advance for a specified volume of crop or for the season; and
- Supermarket promotions linked to actual production.

We should take note. It is happening here.

Jan Davis

Tasmanian Farmers & Graziers Association
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Launceston, Tas 7250
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Fax: (03) 6331 4344

Queensland



Congratulations to our champion growers, Jade and Craig Buchanan from LMB Farms and Steve Lizzio and his family from Liverpool River Bananas in north Queensland, who were Highly Commended in the Queensland Safe Work Awards 2014. As far as we know, it is the first time farming enterprises have been finalists and acknowledged in these awards.

Both the Buchanans and the Lizzios were recognised in the category of Best Workplace

Health and Wellbeing Initiative. They were the first two farming enterprises to participate in the 'Live Well Farm Well' pilot project and both families have become enthusiastic champions of the program and its goal to help farmers look after their bodies like they look after their crops.

Live Well Farm Well is a pilot project, funded by the Queensland Government, which is being rolled out by Growcom and Diabetes Queensland in the Cassowary Coast region. The project focuses on practical ways rural workplaces can achieve simple health improvements and lifestyle changes to reduce the risk of chronic disease.

The profile of the successful pilot continues to grow with a number of other farms coming

on board including Ag-White Pty Ltd, S Lowe & Sons Pty Ltd and Mackay Estates. Participating farms have been involved in introducing a range of initiatives including the healthy eating program 'Eat It' and the '10,000 Steps' physical activity program.

The management of alcohol and smoking on farm is also being discussed. Interestingly, a number of farm visits in recent months have found that one in five workers smoke on a daily basis. Not only is smoking a key risk factor for type 2 diabetes and a leading cause of preventable death in Australia, it also presents farm owners and managers with a number of legal and compliance challenges.

To register online for a free Live Well Farm Well webinar visit: [www.growcom.com.au/live-](http://www.growcom.com.au/live-well-farm-well/)

www.growcom.com.au/live-well-farm-well/ or call 07 4068 2255 or 0408 789 768, or email mayas@diabetesqld.org.au. Please note recordings of past webinars are now available for you to view at your leisure on the Growcom website link above.

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the crop to vertical elevators that are lowered into the box or bag. Once one elevator has filled the box or bag the crop conveyor is automatically reversed and the elevator on the other side begins.



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Victoria



The Vegetable Growers Association of Victoria held its Annual General Meeting (AGM) and Dinner in September.

During the AGM, David Wallace was re-elected as

President of VGA Vic and Paul Gazzola was elected as Vice President. Frank and Rocky Lamattina, Craig Arnott, Bill Bulmer, Joe Kelly, Peter Cochrane, Anthony Mason and new member Emma Germano were nominated to the Executive Committee.

Luis Gazzola, who has been a long-serving member of the Committee, did not renominate. The meeting expressed its gratitude to Luis and Gloria for their many years of service to the industry and wished them well in their retirement.

Sincere congratulations

were also extended to Alec Berias who was granted a Life Membership. Alec is a past President of VGA Vic and the Life Membership recognised his contribution to the industry over his many years on the Executive Committee.

The AGM and Dinner were well-attended by growers and industry associates alike. Following the AGM, a presentation was made by Jenny Witham and Fiona McKernan of Project Harvest where they outlined many of their findings regarding consumer purchases of

vegetables.

Guest speaker Michael Worthington, CEO of the PMA-ANZ and Chair of the Food Safety Centre, also gave a presentation during the dinner.

Helena Whitman

VGA Victoria
Executive Manager
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Western Australia



vegetablesWA has been very lucky to recruit a new Field Extension Officer in Dominic Jenkin.

Born in Western Australia, Dominic grew up on a citrus orchard in Queensland that exports mandarins to Asia and the Middle East. He has undergraduate and Master's degrees in agricultural engineering from the University of Queensland and University College Dublin respectively.

Dominic has had exposure to the breadth of the horticulture value chain, including production processing,

logistics, storage, conditioning, distribution, export marketing, extension as well as consulting in both Australia and Cambodia. We're looking forward to what Dominic can help achieve for Western Australian growers.

vegetablesWA recently organised a grower meeting in Carabooda with representatives from the Department of Water to discuss the future of the Gnangara Mound. The Department is going to review grower entitlements in forming a new plan, but vegetablesWA will continue to advocate for the ring-fencing and safeguarding of our access to this critical resource.

I also took up an invitation to speak at the Stable Fly Action Group in Gingin. Community members were reminded of the large changes that vegetable growers have made

to improve their practices and the resources provided by vegetablesWA to research new solutions.

In other news, our Export Development Manager, Gavin Foord, recently attended Asiafruit Congress and Asia Fruit Logistica in Hong Kong. These events were not just about Hong Kong but attracted buyers from all over Asia. It was a great opportunity to build on relationships with our friends from Singapore, Malaysia and Indonesia.

Asiafruit Congress provided a range of angles on who might be claiming the title of 'Food Bowl to Asia', and it would seem we have some competition for that title, so we need to do what we do well.

On the other hand, Asia Fruit Logistica was a pretty impressive event and the Australia Fresh

network reception was another highlight. Our sponsorship gave us entry for eight Western Australian participants, plus the ability to invite a number of overseas buyers and fly the flag for the state's produce.

John Shannon

vegetablesWA
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Trust the proven performers

South Australia



South Australian Growers Ltd, trading as AUSVEG SA, has recently been granted formal membership of AUSVEG Ltd. After achieving endorsement from the AUSVEG Board, the move has reinstated South Australian growers' rights within the organisation as well as the opportunity to hear views of the state's growers through the appointment of a South Australian Director, Danny De Ileso, to the AUSVEG Board.

This significant achievement for the organisation will allow for further representation of South Australian growers with the ongoing support of AUSVEG at the national level.

In industry news, AUSVEG SA recently provided a joint industry submission to the Federal Government's 400 Series Visa Review, which called for reforms to allow South Australian businesses greater access to skilled migration programs. Key to the submission were recommendations which would allow for a greater number of occupations, including nurserypersons and market gardeners, to be applicable

under skilled migration programs such as the 457 visa scheme.

With falling tertiary applications for agriculture courses, the South Australian vegetable industry is expected to rely on international labour to fill skilled positions. Currently, farm manager positions can be applied for easily; however, further reform is aimed at expanding availability to certificate-level staff within a business who may be looking after crops or managing packing sheds and on-site nurseries.

Another key reform proposed is to allow growers to pay skilled migrants at market rates, rather than the higher salaries required under the skilled migration visas. South Australia faces challenges attracting skilled visa holders and currently accounts for only three per cent of 457 visa applications, despite representing 7.2 per cent of the national population. It is hoped that by improving access to skilled migration schemes, the South Australian vegetable and potato industries will be better placed to address future shortfalls in skilled workers.

Another issue which is currently heating up is the proposed introduction of a NRM water levy in the Western Mount Lofty Ranges catchment, which aims to bring the area into line with other catchment areas. This involves an increase of the water levy for license holders across the Adelaide and Mount Lofty Ranges NRM region to \$7/ML.

Currently, growers across the NRM region pay \$5/ML based on their water usage.

The Adelaide and Mount Lofty Ranges NRM Board hosted an industry consultation in September to propose a number of reforms, which were met with concern from many horticultural groups. The Board claims that the levy is necessary to meet ongoing costs concerning water allocation management to license holders; however, it has not been made clear to industry exactly what the growers will be funding and whether or not these funds will contribute towards activities or go directly into Department of Environment revenues.

It is also concerning that a levy increase is proposed despite the fact that much of the water allocation planning has already been completed for each of the catchments paying the levy. In addition, the proposed reforms would index future levies to CPI, meaning the levy would increase over coming years and would change to be calculable on the total water allocation rather than usage.

Given the strong concerns from vegetable growers in the area, AUSVEG SA is working with other horticultural industries to voice industry displeasure at the new NRM water levy. At times where farm profitability is at critical lows, new tax increases serve to hurt a \$550 million vegetable industry which offers hope to the state following the

impending closure of Holden.

AUSVEG SA and our counterparts will be advocating with politicians and departmental staff across horticulture to secure either the reduction or abolishment of the proposed levy for growers.

If growers would like to discuss concerns regarding this issue they are welcome to contact me.

Jordan Brooke-Barnett
AUSVEG SA
State Manager
Suite 205, 22 Grenfell St
Adelaide SA 5000
Phone: (08) 8221 5220

CLIFTON
REAL ESTATE



AUCTION 6th December 2014

287 Lorenz Road, Mount Molar - 2 Houses and 50 Megalitre Bore

With 167 acres in total, the bore has 35hp submersible pump delivering 15,000 GPH, 140 acres cultivated with black to chocolate self-mulching fertile soil. 90 acres can be irrigated through extensive underground mains and hydrants. This property has been a dairy in the past and most recently being used for growing market quality produce including production of cabbage, cauliflower, lettuce, onions, shallots and broccoli. There is a 0.5 megalitre dam with irrigation pump and diesel motor (capacity 10,000 gallons per hour) and a 250,000 litre steel water storage tank with a variable speed electric pump with capacity of 5,000/25,000 GPH.

To complete this outstanding property are two houses with a tenant in the 3 bedroom homestead which has a modern kitchen, sun room, open veranda and a chook house, whilst the 2nd is tenanted with 2 bedrooms, a hilltop cottage with new modern kitchen and large veranda. The sheds include an 18m x 9m hay shed (unsealed floor), 24m x 9m Machinery Shed (unsealed floor), and 6m x 5m Dairy Pump Room with concrete floor. A multitude of opportunities with this beauty, inspections prior to Auction are highly recommended.

Eugene Hollis-Neath 0427 170 253 • Gerard Wainwright 0409 346 735

Reader Survey

1. What sector of the industry do you represent? Please tick:

- Grower (seed) Grower (fresh) Grower (processed)
 Processor Supply chain Researcher
 Government Industry official
 Other _____

2. What is your age group? Please tick:

- 18-24 25-34 35-44
 45-54 55+

3. What crops do you grow?

4. Which sections of *Vegetables Australia* are of most interest to you? Please tick:

- News R&D Articles
 International R&D Young Grower Profiles
 Grower Profiles Feature articles
 Industry Columns New products/Advertisements

5. On a scale of 1-5, how useful do you find the R&D articles included in *Vegetables Australia*, with 1 being "Not useful at all" and 5 being "Extremely useful". Please tick:

- 1 2 3 4 5

6. Does R&D content in the magazine influence the way you run your business? Please tick:

- Yes No

7. How many people read your copy of *Vegetables Australia*?

8. Where do you get your information from? Please tick:

- Industry publications Consultants
 Processing company Independent agronomists
 Resellers Government organisations
 Grower groups Other _____

9. Do you have any comments/suggestions regarding the magazine?

10. Are you interested in receiving further information regarding the 2015 National Convention on the Gold Coast from June 25-27 2015? Please tick:

- Yes No

Thank you for your time

Complete the survey for your chance to win!

Please return your leaflet to AUSVEG.

Fax: 03 9882 6722 **Mail:** AUSVEG, PO Box 138 Camberwell, Victoria 3124 **Email:** info@ausveg.com.au

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Provides effective early blight prevention, robust control and perfect potatoes.

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Filan® provides a unique mode of action for the prevention and robust residual control of early blight before the disease can get a foothold on potato crops. **Filan** can be tank mixed with **Polyram® DF** for resistance management of late blight. **Filan** makes it possible for farmers to grow and everybody to enjoy perfect potatoes.

BASF is a global leader in crop protection, partnering with the Australian horticulture industry to support the biggest job on earth, farming.

ALWAYS READ AND FOLLOW LABEL DIRECTIONS.

Available from local crop protection distributors.

For technical advice and product information call 1800 558 399 or visit agro.basf.com.au/crop-solutions/horticulture to download a brochure.

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