vegetables australia

March/April 2013

Emma Germano:

"The industry needs to focus on rebranding itself"

"The pain that's ahead now":

Taking stock of the Queensland Floods

Samantha Cables:

Immersed in the field

Karen Spaulding:

View to the future

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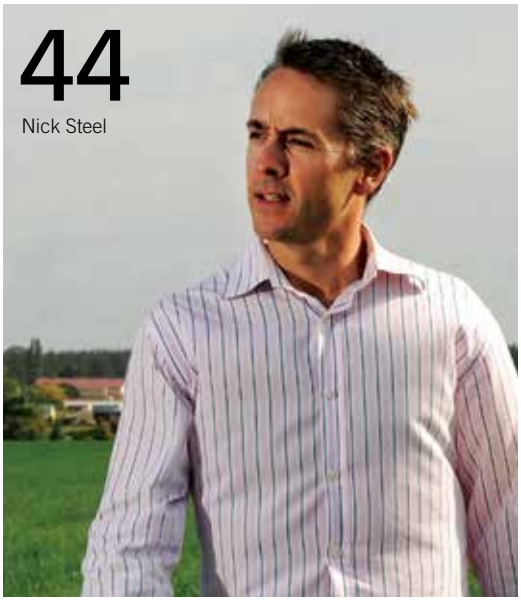

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John Brent

AUSVEG Chairman

As I write this column, much of my home state Queensland still bears the very clear reminder that floods of the most severe nature passed through the region's streets and over its crops. The comparisons to 2011 are real - for a lot of growers, this flooding has caused damage far beyond that of two years ago. My own area has suffered crop and soil loss and as Mayor of the Scenic Rim Regional Council, I have visited and spoken to growers and residents who have been devastatingly affected. There is a firm resilience to rebuild, replant and regrow, but in order to do that, they need adequate support.

As such, it was pleasing to see the Federal Government's response in offering Category C and D assistance for those in affected areas. I met with the Minister Assisting on Queensland Floods Recovery, Senator the Hon. Joe Ludwig on-site at impacted properties in the Scenic Rim region, and it was encouraging to see such an active Government presence at a time when it was desperately needed. I also met separately with the Queensland Minister for Agriculture, the Hon. John McVeigh, to discuss the State Government response.

However, as is discussed within this magazine by well-respected growers Robert Hinrichsen and Ed Windley, the impact of these floods is such that they will be felt for many years to come. In some cases, it will take more than a decade to recover, and that is only in the event of favourable future weather patterns. I will advocate for continued support for those affected over the coming months and years, and I encourage consumers and retailers to play a role in that process.

On the subject of retailers, I have watched with interest the investigation of the Australian Competition and Consumer Commission (ACCC) into the practices of major supermarkets in dealing with their suppliers. AUSVEG has long voiced concern over the conditions under which growers are placed when supplying to supermarkets, who represent such an overwhelming percentage of the national marketplace with regards to vegetable purchasing. In late February, Woolworths Chief Executive Grant O'Brien insisted that the company would always favour customers in negotiations with suppliers. While that may come as little surprise to many in our industry, it is an outmoded attitude that needs review. We are not simply talking about getting a good a deal for the customer, we also need to discuss the livelihoods of Australian growers and the future viability of our industry. AUSVEG will closely monitor the ACCC's investigation as it unfolds.

John Brent
Chairman
AUSVEG

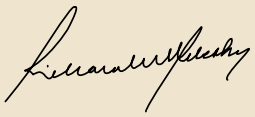
Richard Mulcahy

AUSVEG Chief Executive Officer

Less than a third of the way into the year and already we are starting to see some key developments occur within our industry. In an area of positive progress, the Horticulture Task Force appeared before the Senate on the subject of Country of Origin Labelling legislation proposed by the Australian Greens. It is an issue that readers of this column will no doubt be familiar with, but it is an area that AUSVEG will continue to advocate on until a real solution is achieved. AUSVEG National Marketing Manager, Simon Coburn attended the Senate hearing as part of the Task Force along with Greg Seymour, the General Manager of Mushrooms Australia and Treasurer of the HTF. It is significant that this issue is finally receiving attention at a Federal Government level.

On a related but far more disconcerting note, it was with a heavy heart that I observed the closure of iconic Australian brand Rosella in early March. Having entered into voluntary administration in December last year, the ensuing months saw the company unable to find a buyer and its closure in the following weeks will see the loss of around 70 jobs. Thoughts have to go with those workers and their families, but the loss of an Australian produce-buying processor also represents a damaging blow for our local industry. We need to arrest this alarming trend of local closures and heighten restrictions for those who seek to flood our markets with cheap, imported and subsidised products that in many cases, do not meet our own health and safety standards.

As this magazine goes to print, a series of National Vegetable Levy-payer meetings are being held around the country. AUSVEG has actively encouraged growers to attend the events to listen to some of the work being achieved on their behalf and most importantly, to voice their opinion and provide feedback. This input is crucial to the ongoing development of our industry and maintaining a two-way dialogue between growers and their Peak Industry Body. There are still a host of levy-payer meetings taking place in Tasmania, Western Australia, South Australia and Victoria in the latter part of March, and I hope to see as many growers at those events as possible. More information on these meetings can be found within this magazine (page 47) or by contacting AUSVEG.



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Photograph by Louise Buma.

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Karen Spaulding

It is pleasing to see this edition of *Vegetables Australia* feature a strong female presence from individuals with such a range of experience and expertise. 'Immersed in the field' (page 11) sees young Agricultural Sciences Honours graduate Samantha Cables interviewed about her research and passion to pursue a career in the vegetable industry. In previous editions of this magazine, many have spoken of the need to foster Agricultural Sciences students and encourage more women into the field. Samantha Cables is a welcome example of an industry moving forward on both those fronts.

Emma Germano too, stands as a future leader, and she features in *Vegetables Australia* as this edition's 'Q&A Young grower profile' (page 20). Her forthright nature and enthusiasm for her family's farm is a vibrant example of the opportunities that exist within the industry for young, energetic individuals. Tasmanian grower Karen Spaulding is also profiled as the EnviroVeg Case Study in 'View to the future' (page 38). Over many years, she has engaged with researchers and emerging technologies to ensure her farm is a modern reflection of sustainable horticulture.

Elsewhere, Kalbar-based growers Robert Hinrichsen and Ed Windley take time from the devastation that has hit southern Queensland and other areas to speak about the impact of the recent floods (page 24). Their stories may make for a somewhat sobering read, but it is crucial that the industry, the Federal Government and the Australian public do not move on and forget their plight. Theirs is a hardship that will take years, in some cases more than a decade, to recover from. On the back of flooding two years ago, these growers need continued support from all parties.

R&D updates come this edition in the form of a project that looks to get the best out of *Eretmocerus hayati*, a natural enemy of silverleaf whitefly (page 14) and a consumer research project on the leafy vegetable category (page 36). Industry Advisory Committee Chair, Jeff McSpedden, provides an update on recently approved research projects (page 34) and AUSVEG CEO, Richard Mulcahy, offers his views on the recent Vegetable Future Forum (page 18) held in Germany.

Veggie bites

Facts & figures...

10.6 tonnes

Australia exported 10.6 tonnes of beetroot in 2010/11, reports *The Australian Horticulture Statistics Handbook 2012.*

37%

A Tasmanian study reports that 37% of surveyed participants purchase outside of the supermarkets, reports *The Mercury.*

66,930 tonnes

The amount of broccoli grown in Australia in 2010/11, as recorded in *The Australian Horticulture Statistics Handbook 2012.*

13 %

The price of pumpkins in New Zealand fell 13% in January, reports Statistics New Zealand.

5.7 %

The Australian Bureau of Statistics reports that Australian vegetable prices fell 5.7% in the December quarter of 2012.

405,841 hectares

In January 2012, the total world greenhouse vegetable production area was 405,841 hectares, reports Cuesta Roble Greenhouse Vegetable Consulting.

$20,000,000

The Australian Horticulture Statistics Handbook 2012 book reports that Australian leeks achieved a total farm gate value of $20,000,000 in 2008/09.

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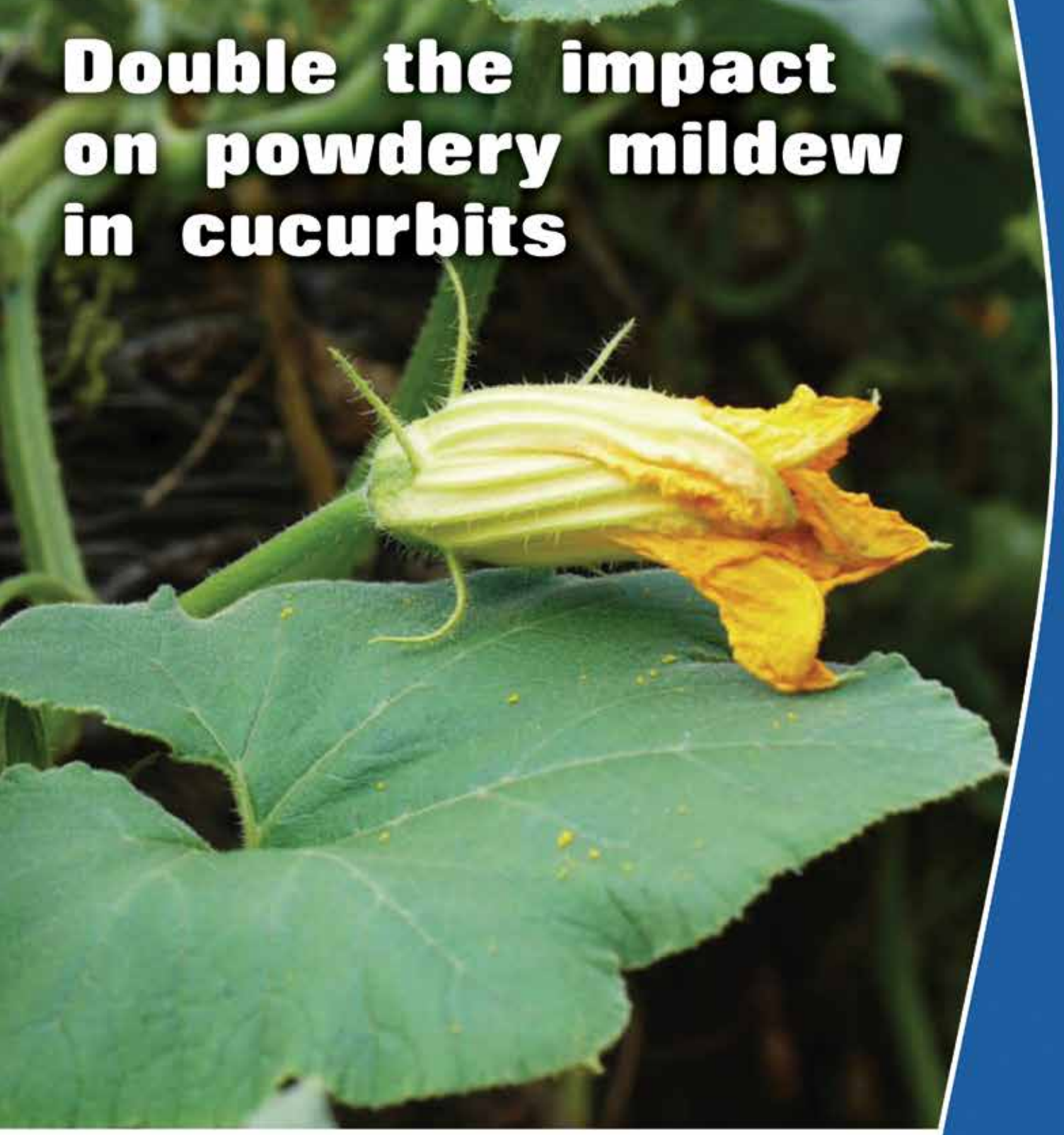

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Immersed in the field

THE VEGETABLE INDUSTRY HAS LONG BEEN CRYING OUT FOR A NEW BREED OF SKILLED WORKERS AND AGRICULTURAL SCIENCES STUDENTS. SAMANTHA CABLES IS ONE WHO HAS ANSWERED THE CALL, WRITES RACHEL WILLIAMS.

A future in farming was inevitable for Samantha Cables, but giving farming a brighter future remains her ultimate aim. The 23 year-old from Devonport on Tasmania's north-west coast, graduated from the University of Tasmania with an honours degree in Agricultural Science last December.

Study in the industry was a natural choice for the daughter of Sheffield farmer Peter. She completed her four-year tertiary education with the assistance of the $2000 Bert Campbell Scholarship, provided by the Agricultural Contractors of Tasmania to honour the memory of the farming pioneer and encourage young people into the industry.

"I grew up on a small farm at Sheffield, which was a dairy and beef farm and we used to grow potatoes and now dad grows poppies," explains Cables.

"That really got me interested in agriculture and my older brother Josh, who is now a field officer at Tasmanian Alkaloids, did a Bachelor of Ag Science, so I followed in his footsteps. I like working outside and was really interested in animals and originally wanted to get into animal nutrition because I have a few cattle of my own. But the degree was more plant-based and I got more exposure to plants working with Simplot between semesters - plus they are a bit easier to handle than animals!"

While her university study was dominated by in-class theory, she relished the chance to complete her honours year with a field trial focusing on the uniformity of maturity in different cauliflower varieties.

"I looked at the meristem diameter at transplant to see if there was a high variability and if that influenced the variability of the curd size at harvest. It didn't, which was interesting, but some varieties were definitely more uniform at harvest," she says.

Her trial was the first of what she hopes will be many investigations to improve yield outcomes for farmers into the future. Since starting her graduate position with Simplot in December, she has been based

Photographs by Seth Buchanan

> "The best thing is there are so many options within the sector and you can go in any direction."

continued over page ▶

in Bathurst learning about corn, cabbage and beetroot production, but hopes to earn a position within the company focusing on research and development.

"Continuous improvement is good. I'm keen to investigate new varieties and management practices, but I don't have a preference in which vegetable I want to study as I am interested in them all," she says, though adding that butternut pumpkin is her favourite to eat. "There are always ways to do things better."

She is not, however, so focused on the unknown that she forgets the past achievements of others.

"I'm most interested in talking to growers, because everyone has a different opinion on growing things. I appreciate the knowledge of growers who have been around for a long time," says Cables.

While Tasmania will always be her home and workplace, Cables says the experience in NSW has been eye-opening, and not just because of the 40 degree days that have been a shock to the system for someone accustomed to the Apple Isle's climate.

> "There are always ways to do things better."

"It's been interesting to see crops that I have never seen before, like corn and cotton and rice; things that don't grow in Tasmania," she says.

"But we grow good veggies in Tasmania and because my whole family is there, I really enjoy being there and that is where I plan to stay."

Encouraging students to pursue a career in agriculture remains a key challenge for the vegetable industry, but Cables recommends the course to anyone with an interest in the outdoors - even "city slickers" who haven't set foot on a farm.

"Don't discount it as an option if you haven't come from a farm," she says. "There were some people in my class from the middle of Hobart who had no farm experience and had only seen a crop while driving past one in the car and really enjoyed it. The best thing is there are so many options within the sector and you can go in any direction. If you study pharmacy you are a pharmacist but with agriculture there are so many things you can do. For example, if I get sick of vegetables I can do something else like agronomy, become a field officer or conduct research, so there are a lot of options."

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Hayati (*Eretmocerus hayati*), is a very small parasitoid wasp that can help control silverleaf whitefly.

Images courtesy of CSIRO

Silverleaf whitefly (*Bemisia tabaci Biotype B*), a serious pest of fruit and vegetable crops.

Meet the natural enemy of SLW - E. hayati

R&D
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A NEW PROJECT HAS OUTLINED METHODS FOR GROWERS TO GET THE BEST OUT OF *ERETMOCERUS HAYATI*, A NATURAL ENEMY OF SILVERLEAF WHITEFLY.

What would you do for free pest control of silverleaf whitefly (SLW) - one of the most globally damaging crop pests? Introducing *Eretmocerus hayati*. By getting the most out of hayati, models predict they can reduce SLW numbers by 99%. Hayati is not your average beneficial insect.

Getting the most out of hayati can prevent crop losses caused by SLW, reduce insecticide use on fruit and vegetable crops, and minimise the chance of resistance developing. Overuse of insecticides can be harmful to human health, create resistance in pest insects and wipe out beneficial insects. Beneficial invertebrates like hayati are estimated to provide pest control to around $400 billion per year globally.

So how can growers get the most out of hayati? This is the question Dr Nancy Schellhorn and Ms Lynita Howie from CSIRO Ecosystem Sciences asked. Their work was recently published as a final report titled *Getting the most out of 'Eretmocerus hayati,' an effective natural enemy of silverleaf whitefly*, which was funded by HAL using the National Vegetable Levy, voluntary contributions from industry and matched funds from the Australian Government. To answer the question, they divided the work into sections by asking: what do we know about the environmental challenges faced by hayati? What can the biology of hayati tell us about their ability to control SLW? And, what can we predict using models of SLW and hayati?

To answer the first question, Ms Lynita Howie, CSIRO, conducted a survey of 68 growers and 22 consultants across three regions in Queensland.

"The survey provided us with an invaluable set of behavioural practices and land uses that we could link to the SLW problems experienced by growers. Collectively, the responses show some interesting patterns," said Ms Howie.

The survey showed that collectively, growers are less likely to have a problem with SLW if they have an orchard or lucerne field nearby or they grow plants for beneficial insects. These land uses all provide refuges for hayati.

"This tells us that boosting beneficial insect numbers provides immediate returns in SLW reduction," said Dr Schellhorn. If cane is grown nearby, however, growers are more likely to have a problem with SLW. This was most likely due to problems with weed

Hayati facts

1	2	3
Hayati can get into crops quickly	**Hayati reproduce really fast**	**Hayati get around**
Within 1-3 days of SLW arriving.	One female can produce 230 offspring.	Moving up to 1 km/day by flying or catching a lift on the wind.

Figure 1. Facts about hayati biology.

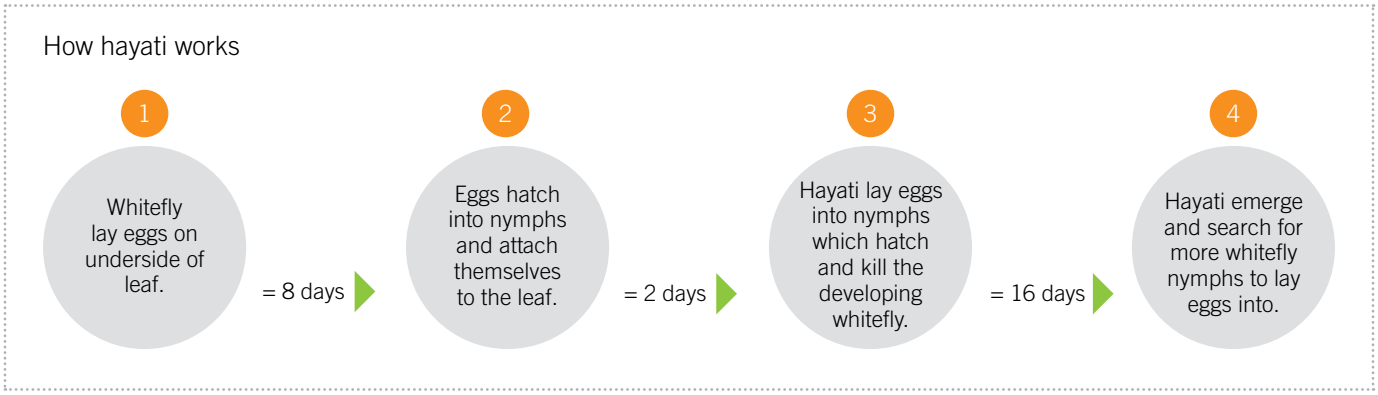

Figure 2. How hayati controls SLW.

control during wet periods or weeds on the crop margins. SLW cannot feed and reproduce on sugar cane. Additionally, the survey showed that using cheaper, broad spectrum insecticides that kill hayati is linked to more problems with whiteflies. If hayati has one Achilles heel, it's this: hayati is very sensitive to certain insecticides. To get the most out of hayati, those insecticides need to be used wisely and only when no other options exist, and when absolutely necessary. Determining when to spray for SLW requires information about numbers of SLW (which is monitoring), crop growth stage, potential for damage, value of the crop, and cost of spray. All of this information can be used to develop spray thresholds. Unfortunately, there doesn't appear to be a standardised method of monitoring, nor does there appear to be standard thresholds for fruit and vegetable growers to use when deciding to control SLW and this information is needed.

To answer the second question, other researchers in the CSIRO team carried out field and laboratory experiments to see how well hayati could reproduce and spread to other fields.

"From our field research, we know that hayati can travel up to 1km/day," says Dr Schellhorn.

Fitting models to the field and weather data shows that hayati use flight and wind to move around. This allows hayati to disperse quickly into SLW infested crops.

"Our laboratory experiments show that hayati live for about 20 days as adults and during that time, one female can produce 230 offspring," says Dr Schellhorn. These exceptional features of hayati's biology mean it is more effective than typical beneficial insects (Figures 1 and 2).

To answer the third question, Dr Schellhorn enlisted the help of Dr Felix Bianchi, a modeller from the Netherlands. Dr Bianchi created a model to simulate crop rotations, the composition of the surrounding landscape, and the changes in hayati and SLW populations (Figure 3).

"The model shows that crop rotations can have a huge impact on how effective hayati can be," said Dr Bianchi.

Dr Bianchi's model predicts that planting a crop that is only slightly susceptible to SLW prior to planting a highly susceptible crop will provide more hayati (and better SLW control) than starting the summer with a highly susceptible crop (Figure 3). The early-season slightly susceptible SLW crop allows hayati to get started, and move into sequentially planted crops before SLW populations can explore.

Armed with answers to their questions, the CSIRO team has listed the key ways that growers can get the most out of hayati:

- Determine if hayati is present on your farm. If not, conduct an inundative release prior to the peak SLW season.
- Plant a crop that is slightly-to-moderately susceptible to SLW prior to the peak SLW season (Figure 4).
- Avoid planting crops that are highly susceptible to SLW near a cane field if possible, or control weeds in cane.
- Plant crops that are highly susceptible to SLW near a refuge such as a small patch of unsprayed crop, an orchard or plants for beneficial insects. Consider releasing hayati into the unsprayed patch.
- Keep broad leaf weeds to a minimum.
- Monitor SLW numbers and spray only when necessary.
- Avoid insecticides that harm hayati.

"Following these actions will mean that SLW populations stay lower for longer and have the additional advantage of supporting other beneficial insects, which can help to keep a variety of pest insect numbers down," says Dr Schellhorn.

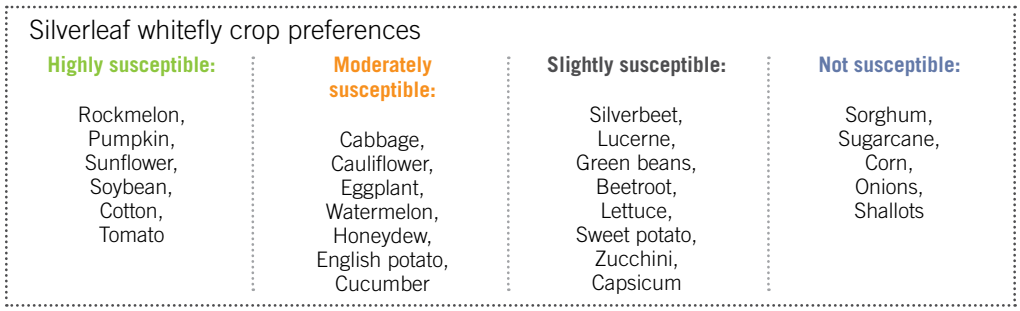

Figure 3. The susceptibility of common commercial crops to SLW. The more susceptible the crop the faster SLW can reproduce.

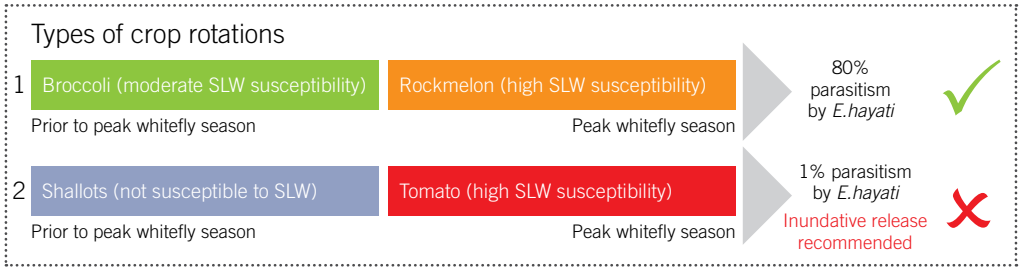

Figure 4: The model predicts that the optimal crop rotation in the absence of broad spectrum insecticides can give very good control of SLW by hayati.

THE BOTTOM LINE

- New research seeks to arm growers with strategies to get the best out of hayati, a natural enemy of the silverleaf whitefly (SLW).
- Among the recommendations, growers are encouraged to avoid planting crops that are highly susceptible to SLW near a cane field where possible.
- Growers should also avoid using insecticides that harm hayati.

Dr Nancy A Schellhorn
CSIRO Ecosystem Sciences
Email: nancy.schellhorn@csiro.au
Project number: VG08051

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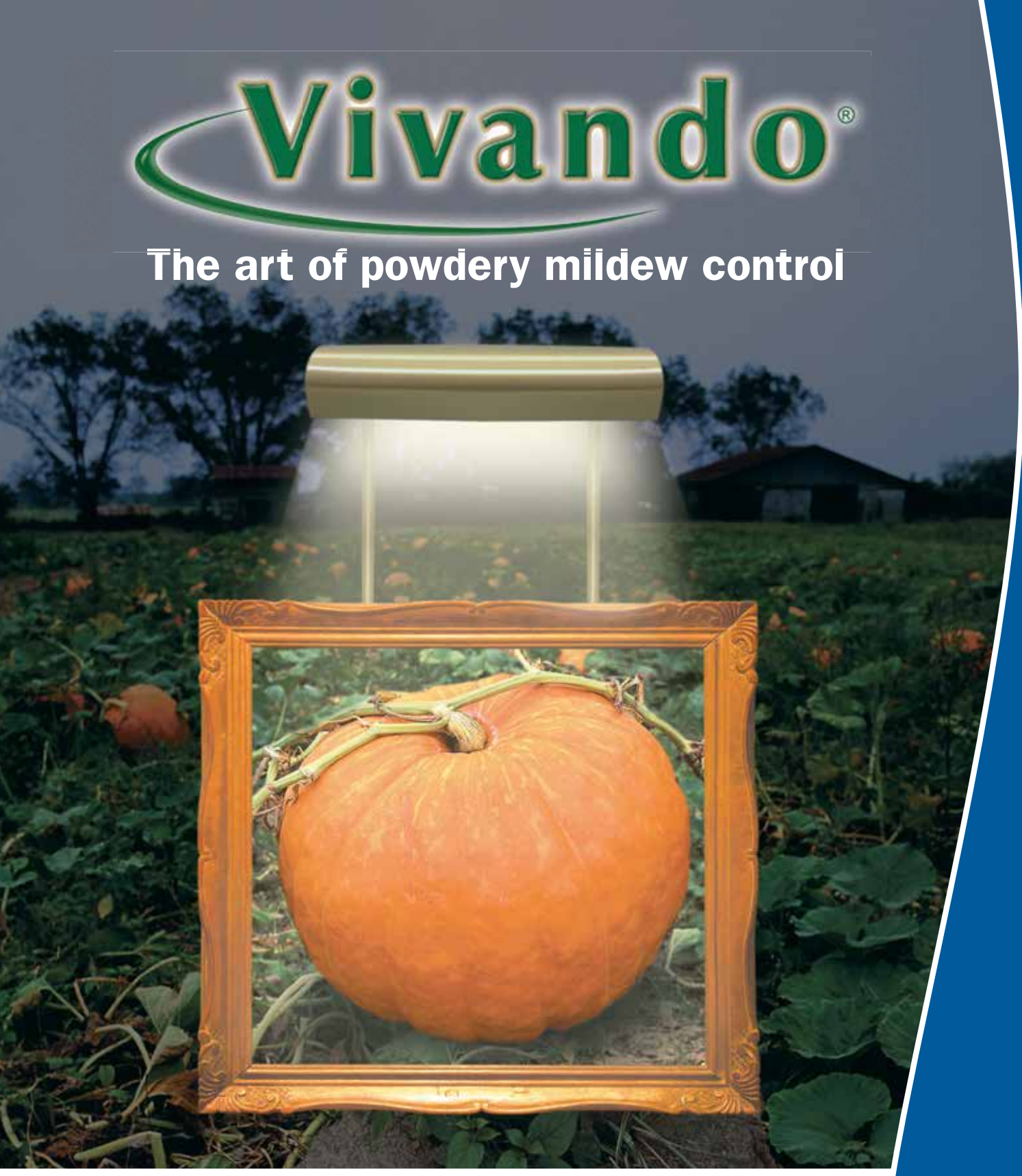

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Biosecurity brief

Dr Kevin Clayton-Greene

In this installment of *Vegetables Australia*'s series on biosecurity, AUSVEG biosecurity advisor, Dr Kevin Clayton-Greene, explains the role of the Cooperative Research Centre for Biosecurity and his involvement with it.

What is a Cooperative Research Centre?

The Government introduced the concept of Cooperative Research Centres (CRCs) as a way of bringing expertise together in specific areas. There have been a number of them in various areas, including biosecurity, where specific issues are being looked at by experts, often with private sector partners as well, to improve our understanding and knowledge of that area through R&D. They are focused on strategic research, but with very much an end-user output in mind.

What is the role of the Cooperative Research Centre for biosecurity?

This particular CRC, which is the second one for biosecurity, has a large number of research providers from a number of countries involved, and there are three end-user advisory panels. One of those is regulatory, comprised of personnel from Government. There is a horticulture advisory panel, which I am on, and there is also a grains advisory panel. Each of those looks at R&D in those particular areas and provides input into formulating projects, R&D and making various recommendations. As part of that process, they have formulated guidelines and areas of research that they think need to be done. Advice from these end user panels together with that from a scientific panel is used to formulate and recommend research areas as well as projects to the CRC Board.

From the horticulture perspective, we are particularly interested in issues that are of major concern to Australia and NZ. There are issues from New Zealand, such as psyllids, which are also of interest to Australia, as well as fruit fly, which is of great concern to Australia, surveillance and so forth; the idea being to generate strategic research that an individual industry probably wouldn't necessarily fund, but that could then piggy-back on to it to develop applications that are particularly relevant to that industry, such as vegetables or fruit. It is somewhat more of a 'blue-sky' approach than you would normally adopt under a traditionally-funded project, which tends to be a lot more applied.

The biosecurity CRC brings together experts from a range of avenues including the grains industry, the Federal Government, HAL, the University of Kansas and Plant and Food New Zealand.

How will this further biosecurity in Australia?

The real important thing here is that, in a lot of aspects of trying to implement biosecurity and even R&D, you are extrapolating data into areas where it may or may not be appropriate. With biosecurity, you are often trying to develop guidelines for analysing risk and risk preparation, based on material or research that has been developed in other areas. In essence, you are often dealing with an unknown risk and attempting to pre-empt it's occurrence. What this CRC is trying to do is provide more background information so that industry has a greater ability to properly manage the often unknown, but also known, risk and surveillance.

If we look at an example - we know there is a lot of research being done on fruit flies, but there still is a lot of work that needs to be done to understand some of their basic biology, their behaviour and why it is changing. That cuts across a lot of industries, including vegetables.

In the case of psyllids - there is a lot of anecdotal evidence, but because they are a relatively new pest, there is a lot of stuff that we don't know or have sufficient information about. There is also quite a bit of contradictory data on biology and behaviour. For instance, with host species, knowing whether a psyllid actually sits and rests on it or whether it feeds and breeds on it.

So what we are trying to do is establish a set of principles that can be more universally applied when it comes to assessing risk and managing these things.

There is also a significant project looking at defining pathogens. These days it is very easy to generate genetic data to show similarities or differences between pathogens. This can have major implications for trade as the boundaries between species and races are now increasingly hard to determine. For trade, this can lead to either unnecessary restrictions or the inverse.

It is the same with surveillance. We are getting less and less money allocated to the area of biosecurity, so we have to do what we do smarter. That involves looking at things like remote surveillance technology; the sort of things that are really important and at the cutting edge of where we need to be going. The CRC can help deliver some of that information.

What will this CRC seek to achieve that the previous one did not?

This CRC is building on the work of the one that preceded it, but one of the things the first one could have done better is to deliver results and outcomes that were taken up and used. I think this one is very much focused on having outcomes from the CRC being utilised by industry generally and by regulators so that they are applied, rather than merely generating interesting information that isn't used. When I say industry, I don't necessarily mean at a grower level - it could be at a peak industry body level, the sort of information that might be useful for AUSVEG and so forth in responding to matters of biosecurity.

What do you hope your input will achieve through this avenue?

HAL is a significant contributor to the CRC and the vegetable and potato industries are substantial contributors to HAL and also very diverse. Cutting across such a wide variety of crops, I would hope that I could bring some sort of expertise and a viewpoint from a practical perspective of the sort of things that industry needs to have when dealing with biosecurity matters. There aren't that many people working in the biosecurity sphere who have got a combination of public, private and university experience that can look at it from all three angles, so I hope that my experience can bring something to the panel.

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Project Number: VG11013

Innovation, collaboration and consumer orientation the focus at Future Forum.

Bayer CropScience CEO Liam Condon welcomes participants at the Vegetable Future Forum.

Some of the world's leading business minds gathered in Germany in mid-December for the inaugural Vegetable Future Forum.

Hosted by Bayer CropScience, the Forum sought to address the challenges of food production and security in the coming years.

A range of key industry thinkers were present at Bayer's Monheim headquarters, including AUSVEG CEO Richard Mulcahy, who was invited to participate in a panel session alongside several leading international growers.

Reflecting on the experience, Mr Mulcahy said the Forum offered an illuminating insight into some of the solutions that ensure the needs of a growing global population are met.

"The Vegetable Future Forum was an exceptionally well-organised collaboration between a diverse range of individuals with varying backgrounds. Each participant offered specific expertise towards what is a very global issue," said Mr Mulcahy.

He stressed that such events were significant to the ongoing sustainability of the industry.

"We are at a critical stage in global food production. The time to collaborate and innovate is now," said Mr Mulcahy. "We need Forums, such as this that Bayer CropScience has facilitated, to ensure that all areas of the supply-chain are speaking and listening to one another and ultimately, developing solutions to meet consumer demand."

Scott Ward (Portfolio Manager Horticulture, Bayer CropScience), Liam Condon (Bayer CropScience CEO) and Richard Mulcahy (AUSVEG CEO).

Speaking at the Forum, recently appointed Bayer CropScience CEO, Liam Condon, echoed his sentiments, arguing that companies such as Bayer are not solely capable of resolving future food production needs.

"The challenges in the industry today are simply too big for any one company to be able to offer the solutions that are needed," said Mr Condon.

> "We are at a critical stage in global food production. The time to collaborate and innovate is now."
>
> AUSVEG CEO Richard Mulcahy

Mr Mulcahy said that among the presentations, an address from Nestlé's Corporate Head of Agriculture, Hans Jöhr, was particularly informative.

"As a company with such a strong grounding in infant and maternal nutrition, Nestlé is probably subject to heightened consumer concerns surrounding issues such as environmental sustainability and the safe and secure sourcing of produce," said Mr Mulcahy. "Mr Jöhr's presentation was insightful as he used the question 'what do we want consumers to say about us?' as a starting point for discussion, and worked backwards from there."

As part of their three-tiered focus on 'nutrition, health and wellness,' 'environmental sustainability' and 'responsible sourcing,' Nestlé conducts thorough and routine audits across its supply-chain. Farmers who produce for the company's selected suppliers are visited by Nestlé agronomists and audited, with improvement plans established and rigorously followed up on to ensure they are being implemented. The company also regularly reviews its own agricultural production systems at a farmer level, in areas such as growing area and field size, crop varieties, fertiliser applications and spray plans.

Across the Forum, there was a continued emphasis on partnerships and collaboration for the future of the vegetable industry. In spite of the different perspectives and priorities of participants, common themes also emerged surrounding innovation and consumer orientation. In particular, the importance of listening to what consumers really want and need and then to pass that information back to growers and R&D providers, so that they are able to deliver what is really needed in the market.

"We need to continue to invest in consumer research and R&D, so that our growers can produce for the burgeoning population," said Mr Mulcahy.

"Bayer CropScience has committed to an R&D spend of €5bn between 2011-2016, but we need others to get involved and follow suit."

Name: Emma Germano
Age: 28
Location: South Gippsland, Victoria
Works: Germano Cauliflowers
Grows: Cauliflowers, cabbage, Chinese cabbage, broad beans.

Q&A Young grower profile

INTELLIGENT AND OPINIONATED WITH A STRONG BUSINESS BACKGROUND, EMMA GERMANO IS EMBLEMATIC OF THE NEW FACE OF THE VEGETABLE INDUSTRY.

Photographs by Louise Buma.

How did you first get involved in the vegetable industry?

Being a farmer's daughter means that I have grown up with exposure to the vegetable industry. After 8 years of studying, owning a restaurant in Melbourne and working as a business and management consultant and trainer, it felt right to apply my skills and knowledge to our family business. For the past 2 years I have become increasingly involved.

What is your role in the business?

My role in the business is primarily sales and logistics, but I also work on all of our business development. I have more recently become 'hands on' with managing our operations. I am also focused on systemising our processes using new technology.

Describe your average day at work.

I start the day by speaking to our agents in the national markets, getting feedback in regards to consignments sent and market prices. This then enables me to direct the harvesting team about what orders we are packing into for the following two days. I organise freight, and write-up consignment notes.

I help Dad to keep an eye on crops, assisting where possible with irrigation and quality control. I collect data in regards to our yields and picking costs, and enter all our planting information into our system.

The best part of my day is managing all of our internal and external customer relationships, though I occasionally get roped into 'catching caulies' and driving tractors.

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

The most enjoyable thing about working in the vegetable industry is that fundamentally, we are producing a commodity that is healthy and nourishing for the population. I really enjoy the ability to be tapped into the creating life force that enables a plant to grow. We do our best to nurture and care for the plants, give them the opportunity to reach their maximum potential, but ultimately, it is nature and creation that does all the work. It is the pleasure of gardening on a massive commercial scale. It is difficult to articulate, but there is something very special about it.

What are the biggest challenges you face as a grower?

Challenges that we face as growers are growing conditions and the elements. The innate ability of the farmer is to take this in his/her stride. The resilience of the Australian farmer never ceases to amaze me.

Our biggest challenge is remaining a commercially viable business. All our expenses continue to increase, and the price of our vegetables doesn't follow suit. There is always a lot of market uncertainty, and despite all the supermarket advertisements showing happy, dancing farmers, I think that reality is a far cry from this. Increased government support and investment in agriculture is imperative to secure the farming future of this country.

How important is good marketing in the vegetable industry in 2013?

I believe that as an industry, we need to band together and advertise our own products. Supermarket-driven advertising is at the mercy of other agendas.

We need to not just advertise the end product but create a real awareness of 'where my food comes from,' 'where would it come from otherwise.'

I find it amusing when I watch a consumer nonchalantly place a cauliflower into a shopping trolley, and I wonder if they realise the number of hours and care that someone puts in so that they can have a product that is safe, nutritious and part of a very important economy in this country.

I spent 15 minutes in a supermarket the other day staring at a wall of jams just trying to find one that I could be certain only contained Australian fruit. I had a choice of two out of about 10 different brands, and they were twice the price of everything else. I think more people would care to pick up the Australian fruit if they were

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> “The resilience of the Australian farmer never ceases to amaze me.”

educated to know exactly how important it is.

You were part of the recent AUSVEG Women in Horticulture Grower Study Tour to Italy and Israel. How was that experience and what did you get out of the tour?

I absolutely loved the trip, in fact it felt like AUSVEG had organised the tour just for me! The most eye-opening part of the experience was seeing how Israel is a net exporter, feeding Europe such a large portion of their fruit and veg. Here I was thinking it was all camels and desert! Their agriculture industry is growing and thriving, young people are enthusiastic and fighting to get into the industry. The government is totally supportive and assists the farmers as much as possible. Agronomists are government funded, shipping is subsidised etc. It was amazing how resourceful they are as a nation, and how they grow much more, with much less. It showed me how much potential Australian agriculture has.

How do you think more young people could be encouraged to take up jobs in horticulture and the vegetable industry in particular?

Again, increased government investment in agricultural education is necessary in traineeships and school curriculums. There needs to be career pathways for young people entering the industry and alternative pathways to farm ownership. If commodity prices were higher, there would be financial incentives too. At the moment, a young person will hardly risk such high start-up costs, where return on investment is low. The industry needs to focus on re-branding itself as sexy and intelligent. We are not all hicks in the country! People should look into our industry from the outside, and be itching to get in.

Where do you see yourself in 5 years?

Hopefully in this business, hopefully with a 300% increase in turnover, more staff employed, with Mum and Dad on a holiday enjoying semi-retirement.

I would like to focus on increasing my networks, and involvement in the industry on a political level.

Blooming strips in front of the Bayer Bee Care Centre.

Bee Centre central to food security

The role of bees has long been recognised as being extremely important within horticulture, with pollination central to growing a large range of food crops and flowering plants. Recent years have, however, seen a concerning decline in bee colonies in North America and Europe, due to a host of factors including disease and parasites, agricultural practices and climate and environmental factors.

One of the greatest threats to honeybees is the parasitic Varroa mite, whose impact on honeybee populations can be seen in significant international incidents spanning the past five decades. Australia has long been free of the Varroa mite, but as recently as late November 2012, the mite was found among thousands of Asian honeybees on a ship docked in Sydney. Many within the science community believe it is a matter of when, not if, the Varroa mite appears among local honeybee populations.

Research has been conducted throughout the world on the Varroa mite and attempting to arrest the population decline of honeybees, but until recently, there has been little centralised, focused work. Enter the Bayer Bee Care Centre in Monheim, Germany. Established in 2012, the Centre employs a team of specialists and beekeepers, dedicated to heightening understanding and awareness of bee-responsible practices and developing solutions that improve bee health.

AUSVEG CEO, Richard Mulcahy, visited the Centre in late 2012 and said he was extremely impressed by the facilities.

"The Bayer Bee Care Centre is a modern example of an organisation leading the field in a vital area of research," said Mr Mulcahy.

"Our own industry is bracing itself for disruptions to local honeybee populations, so research such as is occurring at the Monheim Centre will be vital to future industry sustainability."

The Centre aims to stimulate increased communication and interaction with stakeholders with the ultimate goal of improving bee health.

In December of 2012, it was announced that a second Bee Care Centre will be developed in the south-eastern American State of North Carolina. Scheduled to be opened in July this year, the Centre forms part of Bayer's broader Global Bee Care Program. It will house a full laboratory and research apiary, in addition to workshop space needed to conduct bee health research and to support a practical apiculture.

A bee is attracted to a flower in the blooming strip.

"The pain that's ahead now": taking stock of the Queensland floods

IN THE MIDST OF ASSESSING THE DAMAGE AND POTENTIALLY PREPARING FOR MORE, KALBAR-BASED GROWERS ED WINDLEY AND ROBERT HINRICHSEN TAKE TIME TO SPEAK TO JEREMY STORY CARTER ABOUT THE IMPACT OF THE FLOODS AND THE DECADE-LONG ROAD AHEAD.

Photograph: Rob Williams/APN

In Melbourne, after weeks of overbearing sun and plus-30 degree temperatures, a day of relatively heavy rains hits in late-February. Articles crop-up immediately on the websites of the city's main newspapers, reporting of delays to commuters. They are echoed by the routine overblown social media outrage, bemoaning the road network and public transport service provider's inability to deal with the weather, and the fact people's journeys to work took, in some cases, almost an hour more than usual.

In south-east Queensland, Ed Windley chuckles down the line from his Kalbar farm. He may have suffered over $100,000 in crop damage and tens and tens of thousands more in equipment, lost production time and particularly, lost soil health, but in conversation, he remains impossibly upbeat.

"I don't want it to sound like we're really badly off, because there are a lot of people that are a lot worse off than us," says Windley.

The reality is that Windley and hundreds of others in Queensland and northern New South Wales have experienced flooding at a level that few in the region, if any, can remember.

The floods of late 2010 and early 2011 resulted in 35 deaths and caused untold damage to homes, farms and lives for thousands in Queensland. During the period, the flooding was far more widespread, stretching through suburbs and business districts. Yet for many growers in the state's south-east, this year's floods, induced by ex-Tropical Cyclone Oswald, are far, far worse.

"One thing about this flood, it was very indiscriminate. Every farm got damaged and had loss. Lost soil, lost crops, lost something," says Kalfresh Agricultural Director, Robert Hinrichsen. "For this valley, because of where we were in the cropping cycle and things like that, it was just a whole lot worse than 2011."

When Hinrichsen was featured in the November/December 2012 *Vegetables Australia*, he was pictured among a lush field of crops. In the lead-up to the heavy rains in late January, the region had seen an extended dry period, and the ground at Hinrichsen's Kalbar farm had been worked up right to the point that it was ready for planting.

Robert Hinrichsen at his farm in November 2012. Photograph: Seth Mourra

Robert Hinrichsen's farm following the floods.

"The place was a real picture," says Hinrichsen. "The first few inches of rain just went straight in... Up in the headwaters of our creeks, they had a metre of rain on Sunday night. It was that rainfall from right up the top that brought the creeks down in a real hurry. The water flow and speed of it was ridiculous. That's what carved the farm up as well and did all

> "I really think that when you see something like that happen, you go through a bit of a mourning process. You just have to take a few days, because it's pretty hard on you."
>
> Robert Hinrichsen

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the damage to the creek banks. We live on one of the farms, so we were watching it. 5.30am on Monday we were up and looked out on the valley, and it was just a sea of water."

Reflecting on the damage, Hinrichsen describes one-third of his farm as having experienced "fairly major damage," while another third is "catastrophically degraded."

"There is no soil, there is no topsoil, the underground main has been washed out. That is going to be a very long-term project to get those farms back into production," says Hinrichsen.

Nearby at Ed Windley's sweetcorn farm, things followed a very similar trajectory.

"The water came very fast… everyone had said it was heading our way. Then Sunday afternoon, Sunday night it came very quickly," says Windley. "Probably half of the corn was flattened or washed away. Then any water that went over the top of the cobs has, in time, ruined the rest of the crops as well. We have some blocks on higher ground that survived but a lot of what we had in is gone."

Windley reiterates Hinrichsen's feelings regarding this flood and that of two years ago.

"In 2011, the water came up in the afternoon, but by the next morning it was gone. It was sort of 12-14 hours where we had water over the farm," says Windley. "This time, it was like two days that we had water over the farm. There was just so much - at least half a metre higher at our pump station, and it stayed for longer too. It was just bigger and lasted longer."

> "At the end of the day, the only way you're going to get your way out of it is to grow your way out of it."
>
> Ed Windley

At the time of writing, the threat of more rain, more damage still looms in Queensland and NSW. Primary producers throughout affected areas have been made eligible for Category C and D assistance, allowing access, on proof of damage incurred, to a loan and grant package of up to $650,000 under the Exceptional Disaster Assistance Scheme. That made for welcome news, following lobbying from growers, AUSVEG, local government and other bodies such as Growcom. Robert Hinrichsen says the Federal Government has been "pretty upfront with its support," but stresses that more is needed through a broad range of avenues. Windley is similarly effusive about the need for continued support, particularly at a retail level.

"At the end of the day, the only way you're going to get your way out of it is to grow your way out of it. That sort of requires some assistance from the people you are selling to, in terms of the supermarkets and the markets, to be empathetic to your situation," says Windley. "I was in an IGA near Burleigh and they still have American red onions on their shelf. I mean, you've got to be kidding me? It just blows my mind that this could happen. We have just come out of a beautiful Queensland red onion season. You just need some support from the retail level."

It is telling that in separate conversations on different days, both Windley and Hinrichsen make reference to a period of time that followed the flood where neither felt able to return to work on their damaged farms.

"You go through this stage of - not demoralisation - but you realise what is ahead of you, and you feel a bit unhappy about the situation," says Windley.

"I really think that when you see something like that happen, you go through a bit of a mourning process. You just have to take a few days, because it's pretty hard on you," says Hinrichsen. "I feel like we've been through that, it has sort of dried out and we're able to get on and do some stuff. You feel like you really want to do it."

Windley suggests that of the growers nearby who were also

Ed Windley's farm.

flood-affected, one or two "will be fed up with this" and move on from vegetable growing. What's evident is that these floods, on the back of those two years ago, have caused the sort of pain that can't be quantified in crop or equipment loss. They can't be resolved by loans or grants. Flooding of this nature on a vegetable farm washes away years of work, care, thought and effort. The loss of topsoil, for instance, and all the nutrients and R&D that has gone into it, can't be replaced or replicated, at least not for many years.

"After 2011… the first 18 months were just painful. Nothing grew as well as it did pre-flood. You had to work a lot harder, and it basically cost you a lot more money to grow the same crop. You never quite grew the same thing. That's the pain that's ahead now," says Windley, shrugging off the last sentence with a laugh.

In spite of his radiant positivity, this pain and overwhelming challenge will endure for Windley and so many in the region. Both he and Hinrichsen live and love what they do, and it is that deep connection with their farms that makes it all the more difficult.

"When you have an intensive horticultural farm, it is a very special thing," says Hinrichsen. "It takes you a long time to get your organic matter up to where you are happy with it, have your weeds under control and have farming systems in place that make it very productive and have a very high turnover. To reinstate those things from a clean slate, it'll take at least 10 years to get it back to anywhere near what it was."

In Melbourne, that late-February rain barely lasts the day and by evening, the roads and public transport return to their usual crawl. In Queensland and Northern NSW, the media attention and national gaze will soon move on, but the road to full recovery for some will stretch on for more than a decade.

Putting science into action
for plant health and crop protection

A NEW PROJECT AIMS TO IMPROVE EXTENSION OF R&D AND PRIORITISE INVESTMENT FOR THE VEGETABLE INDUSTRY.

A new Plant Health and Crop Protection Research, Development and Extension Plan is being developed for the vegetable industry. Having begun in January of this year, the wide-ranging project will be based on the economic principles of the Strategic Investment Plan 2012-2017 (SIP) and will be applicable to both outdoor and protected production.

The focus for the work is to ensure that vegetable growers receive good, user-friendly information and support to manage risks, grasp opportunities and make profitable decisions about plant health and crop protection. A central part of the Plan will therefore be to address impediments for R&D adoption, and how to increase the use of new technologies among growers.

Conducted by RM Consulting Group, in cooperation with EconSearch and IPM Technologies, the Plan will build on existing work, practices and research material among other areas. The team believes the Plant Health RD&E Investment Plan needs to take a holistic approach based on understanding all factors that influence pests and diseases, and their successful control (e.g. soil health, crop nutrition and climatic impacts), as well as considering the complex decision-making processes required for integrated crop protection.

The Plan ultimately aims to provide benefit for growers through lower plant health and crop protection costs, more resilient crops, improved marketable yields and quality, more positive responses from consumers and markets and preparedness for future challenges from emerging pests and biosecurity incursions. It will also determine the strengths and opportunities to build upon, and which gaps or shortcomings in RD&E pose the greatest threat to the industry's economic success.

As part of their work, the team will review and analyse previous plant health and crop protection RD&E, current reports and literature and proven pest and disease management approaches and techniques from other industries. The project team will examine some of the barriers that prevent adoption of RD&E in the past, looking at instances where delivery of information has been inappropriate, such as providing large, detailed reports for time-poor growers, or distributing non-practical action plans.

The review will form the basis from which to indentify industry, regional, production system and crop specific issues. Consultation will take place with growers, their advisers and crop protection technology developers to achieve greater understanding on a range of areas.

A final integrated R&DE Investment Plan will describe and prioritise RD&E for future HAL funding on pests and diseases in order of their Mean Economic Impact ($) and crop values, considering industry and regional needs as well as projected cost benefits. The Plan is scheduled for completion at the close of April.

To assist in developing this Plan, RMCG would like to conduct a short phone interview with vegetable producers about the following subjects:

- What are the current and future pest, weed and disease issues?
- How are these managed currently and what support/ information is required?
- What are the new opportunities for protecting crops?
- What should be the priorities for future investment in plant health RD&E?

Interested growers can participate by contacting Dr Doris Blaesing through the below details. We encourage growers to make contact as soon as possible.

Dr Doris Blaesing
RM Consulting Group
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Project number: VG12048

Maximising market opportunities

A TEAM OF RESEARCHERS WILL INVESTIGATE STRATEGIES FOR LOCAL GROWERS TO BETTER ACCESS EXPORT MARKETS.

The vegetable industry has commissioned a new research project to identify and address vegetable industry market access and trade viability issues. The project will deliver a strategy to assist the Australian vegetable industry to open new markets and make existing markets more viable.

The research will be completed by an experienced and commercially-oriented team of Mike Titley, John Baker and Michael Clarke. Titley is a leading vegetable crop agronomist with a worldwide vegetable industry network. He has driven the development of value-added vegetable products including lettuce, babyleaf salad lines, broccoli and carrots into the likes of KFC, McDonalds and Subway. He has first-hand experience developing new export markets for Australian broccoli in Asia.

John Baker is the former head of the Sydney Markets and the Australian Horticultural Corporation. Baker co-authored a landmark 2002 *Export Opportunity Evaluation Study* for the Australian vegetable industry and it is imperative that this new study build on, rather than duplicate, past endeavours.

Michael Clarke is a market analyst who has completed market research and access applications for the apple, citrus and avocado industries along with a major market development and access strategy for the Australian lamb industry. He has completed benefit cost analysis of export/import agent accreditation programs and this experience will be directly applicable to this new HAL project.

The team's approach will be mindful of the success that other high-cost producers have had with vegetable exports. It is grounded in industry knowledge and a firm belief, aligned with the recently released Government White Paper, that Australia has a key place in the Asian Century. Successful market growth for Australian vegetable levy payers will be founded in fresh and value-added products that meet the culinary needs of the world's rapidly emerging middle class.

Examples revealed from recent in-country market research include:

- Developing new and unique varieties to expand the vegetable category.
- Using innovative packaging, especially with products like sweet potatoes and bagged salads, to create points of difference against competitors.
- Collaborating with overseas retailers to market supplier-branded products at store level, supported by innovative merchandising, to provide customers with a much better shopping experience, leading to increased product demand.

The study will bring together current statistics and research and the team will test early ideas for export development with a wide range of Australian vegetable growers, wholesalers, exporters, importers, retailers, food service sector representatives and others.

The project will cover leviable vegetable crops including carrots, pumpkins, sweet corn, peas/beans, lettuce, broccoli, cabbage, cauliflower, sweet potatoes and capsicums, along with a number of other smaller volume vegetables, such as celery and babyleaf lines.

Formally, the new project's terms of reference are to:

1. Prioritise export markets for leviable vegetable products.
2. Identify key impediments at home and in priority export markets.
3. Prepare a trade improvement plan.
4. Explore the potential of an export/import agent program.
5. Document and communicate relevant trade information to vegetable growers.

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Project number: VG12042

Rolling into the Gold Coast

Industry heavyweight John Deere has confirmed their presence at the 2013 AUSVEG National Convention, Trade Show and Awards for Excellence. The on-farm machinery leaders were a highlight of the Trade Show at Hobart in 2012, and will appear once again this year at Jupiters Gold Coast.

As in Hobart, John Deere will bring an array of machinery for delegates to view and interact with. Representatives from the company will also be on hand to discuss any queries.

"AUSVEG is thrilled to have John Deere return to the Trade Show component of the Convention on the Gold Coast," said AUSVEG National Marketing Manager, Simon Coburn. "The feedback we had from last year was that growers really enjoy hands-on, physical displays and John Deere's presence will once again provide that."

Among the display, John Deere will bring their 5100MH Specialty Tractor to the Convention for the very first time. With a front axle clearance of over 23 inches, the 5100MH is capable of clearing tall crops and is available with standard or deluxe cab features.

"As our industry keeps moving forward, so do the on-farm needs of our growers," said Mr Coburn. "John Deere continues to lead the field with cutting-edge technology tailored specifically to these evolving needs."

At the time of publication, the Trade Show component of the 2013 AUSVEG National Convention was all but sold-out. Exhibitors this year span right across the supply-chain, from R&D providers to chemical and fertisliser organisations, irrigation specialists to business and on-farm technical support.

"On the strength of previous years, members of industry have clearly identified the 2013 AUSVEG Convention as the central event to meet and interact with growers and discuss their requirements," said Mr Coburn. "I am really pleased that this year's Trade Show will once more offer delegates the full-range of solutions to improve and further their operations."

The Trade Show is only available to registered delegates of the 2013 AUSVEG National Convention. Contact AUSVEG through the below details for more information.

The 5100MH Speciality Tractor.

> "On the strength of previous years, members of industry have clearly identified the 2013 AUSVEG Convention as the central event to meet and interact with growers and discuss their requirements."
>
> AUSVEG National Marketing Manager, Simon Coburn.

First round of speaker sessions unveiled

The program for the 2013 AUSVEG National Convention, Trade Show and Awards for Excellence continues to grow, following a round of exciting and diverse speaker announcements.

As the commercial landscape changes and evolves in the vegetable industry over the coming years, the major supermarkets will increasingly play a central role in the supply chain. In light of that, Merchandise Director for Coles, John Durkan, will appear at the Convention to deliver an address on 'Helping Australia Grow.' Mr Durkan has been involved with Coles for over four years, after 17 years with UK retailer Safeway Stores. He will discuss the company's continued desire to innovate and improve product quality.

Elsewhere in the program, specialist employment law and industrial relations barrister, Tass Angelopoulos, will deliver a speech on 'Unfair Dismissal - Pitfalls and Process.' With labour hire remaining an ever-challenging area for growers, his discussion is sure to be keenly observed.

Professor of Robotics and Intelligent Systems from the Australian Centre for Field Robotics at the University of Sydney, Dr Salah Sukkarieh, will return to the AUSVEG Convention, this time as part of the speaker program. Dr Sukkarieh was one of the highlights of the Future Technologies Seminar in Hobart, delivering a fascinating presentation on agricultural robotics. With extensive experience working in a research and commercial capacity, Dr Sukkarieh stands as a leader of the field. This year, he will speak on 'Field Robotics,' presenting successful examples of the application of autonomous systems and structures being used in various Australian industries and how they might be applied in the vegetable industry. For any growers interested in robotics and autonomous operations, his talk will be one not to be missed.

Also returning from last year's successful Future Technologies Seminar will be Dr Roger Hellens, Science Group Leader of Genomics - Breeding & Genomics, Plant and Food Research New Zealand. An engaging and articulate speaker, Dr Hellens last year sought to de-clutter the conversation surrounding genomics and instead present examples of end results. Speaking to *Vegetables Australia* at the time, Dr Hellens likened the broader reluctance to accept genomics and genetically modified food to the uptake of electricity.

"There were times when people wouldn't accept electricity in their houses," said Dr Hellens. "It is time that makes people comfortable. There is a lot of GM out there now, so maybe in time people will become more comfortable about it as they learn that some of the food they are eating are genetically modified."

Dr Hellens' address, titled 'The application of Genetics and Genomics to New Cultivar Development,' will no doubt serve as one of the central talking points of the Convention.

National Secretary of The Australian Worker's Union, Paul Howes, speaking at the 2012 AUSVEG National Convention.


John Durkan.


Tass Angelopolous.


Dr Salah Sukkarieh.


Dr Roger Hellens.

For more information on the program for the 2013 AUSVEG National Convention, Trade Show and Awards for Excellence, contact:
AUSVEG
Telephone: (03) 9822 0388
Email: convention@ausveg.com.au

NOMINATIONS

2013 AUSVEG National Awards for Excellence

Closing 13 April

The 2013 AUSVEG National Awards for Excellence will be held on Saturday, 1 June at Jupiters Gold Coast and will highlight the outstanding achievements of our industry's most successful growers, researchers and businesses across the supply chain. This event is set to be a highlight of the highly anticipated 2013 AUSVEG National Convention.

Nominations are being sought in the following categories:

Grower of the Year
Proudly Sponsored by: syngenta

Innovative Marketing Award
Proudly Sponsored by: cmaa central markets association of australia

Young Grower of the Year
Proudly Sponsored by: Dow AgroSciences

Women in Horticulture Award
Proudly Sponsored by: Steritech

Industry Impact Award
Proudly Sponsored by: VISY FOR A BETTER WORLD

Researcher of the Year
Proudly Sponsored by: Bayer CropScience

Industry Recognition Award
Proudly Sponsored by: DUPONT

Environmental Award
Proudly Sponsored by: NETAFIM GROW MORE WITH LESS

Productivity Partner Award
Proudly Sponsored by: Elders

Rising Star of the Year
Proudly Sponsored by: LANDMARK

New Awards

Trade Display of the Year Award (Multi-booth)*

Trade Display of the Year Award (Single-booth)*

There will be two new award categories at the 2013 AUSVEG National Awards for Excellence. Exhibitors will be judged on the appearance, creativity and interactivity of their trade display.

*The Trade Display of the Year Awards are **not open for nomination.**
All exhibitors are deemed entrants for Trade Display of the Year Awards.

For full award nominee criteria or to nominate please contact AUSVEG
Tel: (03) 9822 0388 **Fax:** (03) 9822 0688 **Email:** convention@ausveg.com.au **Website:** www.ausveg.com.au

Soil **solutions**

with Rohan Davies

Keeping cadmium in check

INCITEC PIVOT FERTILISERS' TECHNICAL AGRONOMIST, ROHAN DAVIES, DISCUSSES MANAGEMENT STRATEGIES FOR CADMIUM, A NATURALLY OCCURRING MINERAL FOUND IN SOILS.

Question: How can I prevent high cadmium levels in produce?

The key to identifying and preventing potential breaches in maximum allowable levels of cadmium in root, tuber and leafy vegetables is to know the cadmium levels of your cropping soil and the levels in any manures and fertilisers applied. Cadmium uptake in vegetables is typically via the root system. The mineral is then stored in high concentrations in particular parts of the plant, depending on the species. The highest levels are usually found in the leaves, followed by storage roots and tubers, seeds and fleshy fruits.

So how does cadmium find its way on to the vegetable farm in the first place? Cadmium is a naturally occurring mineral found in soils. Additional cadmium may make its way into the soil as an impurity in manures or phosphorus and trace element fertilisers. Most states in Australia limit the maximum permissible concentration of cadmium for phosphatic fertilisers at 300mg of cadmium per kg of phosphorus. This means if a fertiliser with 5% phosphorus was applied at 1 t/ha, it could result in up to 15grams of cadmium being applied per hectare. To put it another way, that's 0.01mg cadmium/kilogram of soil.

The Maximum Level (ML) of cadmium that is acceptable for root, tuber and leafy vegetables in Australia is less than 0.1 mg of cadmium per kg of fresh weight produce. This can be tested in a laboratory using plant tissue testing.

Marketing vegetables with cadmium concentrations above the ML is not permitted throughout Australia. However, a survey of cadmium levels in vegetables and soils of Greater Sydney in 1997[1] found that approximately 10% of the root and leafy vegetables sold through the Sydney markets exceeded the ML. The investigation also found that cadmium levels in the top 15 cm of soil ranged from 0.11 to 6.37mg/kg of cadmium in cropping paddocks compared with a background non-cropped level of 0.36 mg/kg cadmium (normal range 0.1-0.5mg/kg).

The research concluded that the increased concentration of cadmium found in vegetable crop soils was predominately due to large applications of poultry manure (10 times the sustainable rate of cadmium application). The EPA guideline for appropriate levels of cadmium in clean fill is 3mg of cadmium per kg of soil. However, this is a poor indicator of crop safety, when as little as 0.3mg of cadmium per kg of soil can result in ML breaches in crops such as lettuce and broccoli.

Checklist of at risk situations

The following situations increase the risk of cadmium ML breaches[2]:

- Growing spinach, silverbeet, eggplant, pea, lettuce, garlic, parsnip, carrot, beetroot and some varieties of potato.
- Growing crops on soils with low organic matter content.
- Growing crops on soils with low clay content.
- Growing crops in low pH soils.
- Growing crops in low zinc soils.
- Allowing minimal or no erosion of topsoil.
- High chloride levels in soil, water or fertilisers.
- The use of poor quality irrigation water.
- Growing crops on soils with low phosphorus buffer indices (PBI) - soils that fix phosphorus also fix cadmium making it less available for plant uptake.

Lower risk crops include mushroom, alfalfa, pumpkin, green bean, cucumber and some varieties of potato.

References:
1 Jinadasa, K, Milham, P., Hawkins, C., Cornish, P., Williams, P., Kaldor, C. and Conroy, J. (1997). Survey of Cadmium Levels in Vegetables and Soils of Greater Sydney, Australia. Journal of Environmental Quality 26. No.4 pp 924-933.
2 Vegenotes (2003). Managing Cadmium in Vegetables, Horticulture Australia.

Q Please send your soil nutrition questions to *Vegetables Australia*.
Email: info@ausveg.com.au
Phone: (03) 9822 0388

New projects to propel industry forward


Jeff McSpedden

FOLLOWING A SERIES OF MEETINGS BY THE IAC AND VEGETABLE INDUSTRY DESIGN TEAMS, IAC CHAIR JEFF MCSPEDDEN DISCUSSES SOME OF THE BREAKING NEW PROJECTS SET TO BE UNDERTAKEN.

As the new year begins to unfold with pace, so too does the work of the Industry Advisory Committee (IAC) and Vegetable Industry Design Teams. After a successful round of meetings in January, the IAC has approved tenders for a range of diverse projects, spanning key areas to improve and further the vegetable industry. Over the course of each year, Horticulture Australia Limited (HAL) invests more than $80 million in over 1200 R&D and marketing projects, covering a range of areas within the horticulture sector.

Among the approved projects from the recent meetings, 'Development and Implementation of a Vegetable Industry Crisis Management Plan' looms as an important step-forward for the industry. While there are existing documents relating to crisis and incident response that will be reviewed as part of the project, the industry needs a cohesive and comprehensive plan to rely on in the event of a broader crisis. We have seen the impact that contamination outbreaks have held for other industries, both from a consumer safety and industry perception standpoint, as well as at a farming and retail level. This project will develop clear steps for growers, AUSVEG and other stakeholders to follow when responding to potential hazards. Findings from the project, information and advice will be distributed subsequent to its completion.

Another project that will no doubt be of interest to growers is the topically-titled 'Identifying Market Opportunities for Australian Vegetables in China.' For so long we as an industry have spoken of the need to take advantage of the opportunities that exist in the Asian marketplace, while the Federal Government and others have recently joined this chorus too. Yet we need to move beyond mere discussion and begin to indentify real avenues through which growers can sell their produce to the ever-expanding Chinese marketplace. As part of the project, the approved service provider will conduct international market and consumer research, and seek to identify any barriers and risks associated in dealing with those markets. This research will be augmented by a separate project, entitled 'Exporting to China - A Symposium for Vegetable Growers.' The Symposium will bring together a host of relevant local and international experts, speaking on fields as broad-ranging as freight, legal and trade issues and the preferences of affluent Chinese consumers.

A full list of the approved projects can be found in the table below. Work will begin on these projects immediately, with results, information and material distributed to levy-paying vegetable growers. The IAC and Design Teams will continue to meet throughout the year and provide updates on their progress through *Vegetables Australia* and other avenues.

Recently approved projects:

Consumer Alignment:

- Conveying the Positive Social, Economic, Environmental and other Benefits of Australian Vegetables
- Development and Implementation of a Vegetable Industry Crisis Management Plan
- Exporting to China - A Symposium for Vegetable Growers
- Optimum Vegetable Portion Size to Meet Consumer Needs
- Identifying Market Opportunities for Australian Vegetables in China

Market and Value Chain Development:

- Understanding the Nature, Origins, Volume and Values of Vegetable Imports
- Enhancing Market Attitudes Towards IPM and Sustainable Vegetable Production Practices

Farm Productivity, Resource Use and Management:

- Biosecurity - Benchmarking Study to Assess Vegetable Industry Awareness and Preparedness
- Investigate the Costs Associated with the Production, Sale and Distribution of Vegetables

Drive Train:

- Updating & Republishing Valuable Vegetable Industry Resources

New local head for Bayer

Dr Jaqueline Applegate has been appointed Senior Bayer Representative for Bayer Australia and New Zealand and the Manager Director of Bayer CropScience Pty Ltd.

Based in Melbourne, Dr Applegate assumes the role from Joerg Ellmanns, who returns to Germany to join Bayer CropScience's Strategy and Business Management Team as Head of Soybeans, Corn and Herbicides.

Dr Applegate brings a wealth of experience to the role, having joined Bayer Crop Protection in 1992 as a chemist in Process Development. Working throughout Europe and North America, she has held positions as diverse as Global Project Manager, Head of Global Portfolio Management at Bayer Environmental Science and most recently, President of Bayer Environmental Science North America.

Dr Applegate holds a Ph.D. in Organic Chemistry from Iowa State University with a focus on agricultural and pharmaceutical chemistry, as well as an MBA from Rockhurst College.

AUSVEG congratulates Dr Applegate on her new role and wishes her all the best in furthering the Australian vegetable industry.

Minor-use permits

Permit Number	Permit Description (pesticide/crop/pest)	Date Issued	Expiry Date	Comments	Permit Holder
PER13942	Suscon Maxi Insecticide (imidacloprid) / Nursery stock / Various insects	05-Feb-13	31-May-15	Issued for all states.	NGIA / AgAware
PER13953	Confidor (imidacloprid) / Propagation Nursery Stock / Silverleaf Whitefly	01-Mar-13	31-May-15	Issued for NSW and Qld only.	NGIA / AgAware
PER12506	Dimethoate / Eggplant / Queensland fruit fly & Mediterranean fruit fly	30-Jan-13	05-Oct-13	New permit. Issued for all states. APVMA required residue data from 4 Aust trials.	Growcom
PER13656	Rovral (iprodione) / Carrots - Black rot; Chillies and Paprika - Sclerotinia rot	25-Jan-13	30-Sep-14	Renewal permit. Issued for all states (excl Vic). APVMA requires 3 residue trials in chilli.	Growcom
PER13920	Potassium salts of fatty acids /Glasshouse and hydroponically grown capsicums, lettuce and cucumbers / Glasshouse whitefly and Silverleaf whitefly	01-Mar-13	31-Mar-18	Renewal permit. Issued for all states (excl Vic).	Growcom
PER13936	Applaud (buprofezin) / Celery / Greenhouse whitefly	01-Feb-13	30-Jun-14	Renewal permit. Issued for all states (excl Vic).	Growcom
PER13957	Petroleum Oil (incl. paraffinic and mineral oil) / Rubus and Ribes / Two Spotted Mite and Scale Insects	01-Apr-13	31-Mar-18	Renewal permit. Issued for all states (excl Vic).	RABA / AgAware
PER13860	Lebaycid (fenthion) / Chilli peppers / Fruit Fly	7-Dec-12	30-Oct-13	Issued for all states. APVMA requires residue data from 4 trials to support renewal.	Growcom
PER13899	Paramite (etoxazole) / snow and sugar snap peas / Two-spotted mite	01-Jan-13	31-Mar-15	Issued for all states (excl Vic).	Growcom
PER13900	Pirimicarb / spring onions / aphids	01-Jan-13	31-Mar-14	Issued for all states (excl Vic). APVMA requires residue data to support renewal - in progress.	Growcom
PER13902	Phorate / sweet potato / Aphids, Thrips, Jassids and Organophosphate Susceptible Two Spotted Mite and Wireworm	02-Jan-13	31-Mar-18	Issued for all states (excl Vic). APVMA requires the use to be registered.	Growcom

Assessing attitudes towards the growing green leaf category

R&D Consumer Alignment

THE EVER BURGEONING MARKET OF PRE-PACKED SALAD LEAVES HAS BEEN THE SUBJECT OF NEW CONSUMER-BASED RESEARCH, WRITES KAREN SHAW.

Consumers buy pre-packed salad leaves that are consistently crisp, fresh and fluffy and contained in a full bag, according to major new research. The research also found that while market share for pre-pack salad leaves is already 60 per cent of the value-added product category, it has the potential to experience continued growth of up to 10 per cent per year.

The research, funded by HAL using voluntary contributions from industry and matched funds from the Australian Government, found that there is potential for 85 per cent of Australian households to buy a pre-pack leafy green product every three weeks, but only on the proviso that leaves are consistently fresh and of good quality. Otherwise, consumers switch to buying the market competitor - whole lettuces such as iceberg and cos.

Harvest FreshCuts General Manager, Sales and Marketing, Andrew Francey, said the research highlighted the need for both company and growers to deliver a consistently fresh product that met consumer expectations. Harvest FreshCuts is one of Australia's largest pre-pack salad and vegetable processors, having launched the innovative pre-pack leafy green salad leaves into the Australian marketplace in 1995. The leaves include spinach, mesclun and rocket as well as more niche lettuces such as baby cos, oak leaf, and red and green coral leaf.

The pre-pack range initially attracted consumers willing to try new food concepts, but over time has become a category of high market growth with retail value of more than $300 million a year. In the 15 years since the pre-pack leafy greens were introduced, little consumer research had been undertaken into consumer purchasing patterns and to establish whether there were gaps in the retail market.

"We commissioned the research in 2010. The overarching aim was to quantify just how many households bought our product," said Francey. "To be honest, it came as a surprise to see that pre-pack leafy greens are entrenched in the marketplace, with 65 per cent of households purchasing the product at least once in the past year. We also wanted to know why people buy and eat leafy greens and importantly, what turned them off purchasing to help us develop strategies to boost consumption, and to give this feedback to the growers."

Consumer trends

The research methodology involved talking to focus groups, undertaking specific surveys and analysing Neilsen Homescan data that tracks consumer spending. According to the research results, pre-pack salad leafy greens are considered the new staples for entertaining and everyday eating. Consumers describe these pre-packs as gourmet, trendy, delicious, exciting and believe it brings their food experience into the realm of television program MasterChef. Not surprisingly though, the study also found that the key for any purchase is quality and freshness. Fresh food is always a visual purchase decision and consumers equate freshness to crisp, full, fresh, fluffy bags, the research reported.

Feedback from consumers also listed value for money as important, while others demanded leaves with no browning, pinking or wilting, no excess moisture, bruising or old leaves, no chaff, excess core or insect damage.

"I buy what looks freshest at the time," one interviewee said.

What can growers learn?

The research results have been disseminated to growers Australia-wide who supply Harvest FreshCuts with leafy greens. The farmers are located in areas from Tasmania to Gippsland, NSW Highlands, Queensland's Lockyer Valley and Western Australia.

"While most growers deliver top quality product, there is room for improvement," said Francey. "For example, removal of foreign bodies in leaf needs to be improved significantly, especially during summer when insect pressure is high."

Francey recommended all growers use harvesters with blowers, vacuums or shaker belts that helped remove insects and other foreign bodies on-farm before leaves were sent to the processor.

"New technologies are available on modern harvesters or can be retrofitted to older models," he said. Growers should also be vigilant about pest control around the growing area.

"Good on-farm hygiene is really critical, as are other systems to control insects," said Francey.

Other strategies

As a result of the research, Harvest FreshCuts has already reduced the supply chain delivery time from harvest to customer distribution centre to within 24-48 hours.

"We can harvest leaves in the morning, get them to the processing plant and out to distribution centres within that timeframe," said Francey.

The company has also introduced two new pre-pack sizes: a large 300g family pack and a single-serve pre-pack, already a top 10 product in market category.

"The research identified that singles, up and coming transitionals and couples represented an untapped market, so we introduced the single serve pack to accommodate these groups," he said.

Another important message from the research was the lack of consumer knowledge about specific fancy leaf varieties.

"Consumers don't really understand the varietal differences between fancy leaf lettuces such as coral and oak leaf or baby cos. They simply see red leaf or green leaf packs."

So for consumers, it is all about taste and quality.

"Any new varieties need to pass these tests and not only have a flavour that meets consumer expectation, but that also process well; that are not damaged, wilted or bruised, and that look fresh and fluffy in the bag. Varieties that perform well and provide a good eating experience, that's what we're after," he said.

THE BOTTOM LINE

Major research into consumer-based attitudes to pre-pack leafy salad greens has found that:

- The product is hero. What is paramount is a focus on product freshness through the supply chain.
- Product cleanliness and removal of foreign bodies, such as insects, is vital before packaging.
- Future varietal development and innovation needs to be focused on consumer demand, which hinges on taste and processing quality.
- On-farm and processing methods need to be constantly monitored, with the ultimate aim to increase pre-pack salad leaf consumption.

Andrew Francey
Harvest FreshCuts
Email: Andrew.Francey@oneharvest.com.au
Project number: VG10094

EnviroNews

www.enviroveg.com

Nominations now open for Environmental Award

Nominations are now open for the 2013 AUSVEG Environmental Award, to be presented as part of the Industry Awards for Excellence at this year's National Convention.

The Environmental Award, sponsored by Netafim, recognises innovation in environmental practices in our industry and the commitment of Australian vegetable growers to work proactively within their community and catchment.

If you know of someone who you think deserves a nomination, you can nominate them by downloading and completing the Nomination Form on the AUSVEG website.

The Environment Award is assessed against the following criteria:

1. An individual who has demonstrated a commitment to implement sustainable practices on-farm.
2. An individual who has developed an innovative solution to meet an environmental challenge on-farm.
3. An individual who has shown leadership in promoting environmental issues in the local and wider community.

Award nominations can be sent to AUSVEG.
Email: convention@ausveg.com.au
Fax: (03) 9822 0688

The 2012 AUSVEG Enviromental Award presented by Netafim's Stuart Upton (left) accepted on behalf of Steve Newman by Adelade Produce Markets CEO Angelo Demasi (right).

EnviroVeg at the 2013 AUSVEG National Convention

EnviroVeg growers are reminded to sign-up for this year's AUSVEG National Convention, Trade Show and Awards for Excellence. As was the case last year, EnviroVeg will have a booth in the Trade Show pavilion, so we hope to see many of our Program members there.

A competition will be run, similar to last year, for growers providing either a registration form or self assessment at the booth. Additionally, the booth will incorporate a display of environmentally-friendly options for growers as well as a display of the program's website and reporting features.

Accommodation on-site for this year's convention is fast running out, so growers are encouraged to book early to secure a place for the premier event on the Australian horticultural calendar. Registration forms can be access and completed online at: www.ausveg.com.au.

Research in the spotlight: Project VG11034 - Benchmarking uptake of soil health practices

In 2006/07, Horticulture Australia Limited (HAL) identified soil health as a priority for the vegetable industry. Concerns about poor management of soil health leading to large losses in productivity, increased disease and damage to catchments heightened the significance of the issue for the industry. In response, a vegetable industry soil health program was implemented, comprising three separate projects to build capacity in the industry. Two of these projects were funded through the National Vegetable Levy, focussing on tropical and temperate vegetable production respectively. The final project, a ute guide on soil management, was funded by the Australian Government.

The current project, to benchmark uptake of soil health practices, was commissioned to evaluate the success of these projects in encouraging greater uptake of soil management best-practice in the Australian vegetable industry. Applied Horticultural Research recently completed the benchmarking project, which incorporated a survey of vegetable growers to evaluate the uptake of the previous project outputs and to provide guidance on future directions for soil health research in the Australian vegetable industry.

Key findings from the project reviews and vegetable grower survey include:

- Strong support for the soil health program among growers.
- Preference for smaller, regional projects, which effectively communicate outcomes relating to soil health, productivity and economics that fit specific local production systems.
- National coordination of soil research, soil assessment protocols and a repository of soil research information is needed.
- There is a need for closer linkages with broader soil research, development and extension (RD&E).
- Traditional soil cultivation methods are still widely used.
- There are high adoption rates of: green manure crops (incorporated); composted manures and biological activators; and soil testing.
- Adequate general reference information on vegetable soil management is available but a lack of specific information is hindering improvement.
- Skills deficiencies were identified among consultants and growers, including in the areas of: soil biology and microorganisms; soil-borne disease control; interpretation of soil test results; biofumigation and alternatives to Metham sodium; and fertilizers and nutrition.
- RD&E priority issues were identified as: soil-borne diseases; biofumigation; nutrition; soil biology; and controlled traffic/minimum tillage to reduce input costs and improve soils.

AUSVEG provides Australian vegetable growers with access to the latest industry research and development through the R&D database at www.ausveg.com.au. If you are not already registered, sign-up today through our website.

To receive copies of the final report relating to this project you can contact:
Jordan Brooke-Barnett
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Email: Jordan.brooke-barnett@ausveg.com.au

EnviroVeg

VIEW TO THE FUTURE

ON THE NORTH-WEST COAST OF TASMANIA, LOCAL GROWER KAREN SPAULDING IS WORKING WITH RESEARCHERS TO CONTINUOUSLY INNOVATE HER PRODUCTION PRACTICES FOR THE BETTERMENT OF HER BUSINESS AND THE BROADER ENVIRONMENT.

Photographs by Belle Young.

From starting out on the family farm to her own operation, Karen Spaulding has an intimate knowledge of the land on Tasmania's North West Coast. Like many of her counterparts, she has benefited from the rich local soils, practices and crop rotations, which give the land appropriate resting time and assist to build-up resistance to pests and diseases. Separated from mainland Australia, Tasmania is insulated from many of the pressures faced by other Australian growers, and locals are keen to keep it that way.

Spaulding's willingness to experiment with crop production practices has seen her work with local Department of Agriculture researchers, offering her land for a number of trials including pesticide, herbicide and soil compaction trials. While this requires an investment of her time, the soil compaction trial was beneficial in improving her soil structure.

"Basically, the ground was worked in line with our controlled-traffic program and then the soil was tested before, during and after our spray regime to compare the levels of compaction on the spray equipment tracks to the plant beds and on the headlands," says Spaulding. "Once we got the results from the tests after harvest, it was amazing to see the different results between areas. We also saw improvements in crop nutrition from the controlled-traffic program, as the soil was more friable assisting with nutrient uptake."

While Spaulding is willing to experiment with new ideas on property, she also has fundamental practices in place to ensure ongoing management of soil and crop nutrition. Annual tests throughout the crop cycle help to determine plant needs and nutrient budgets for each crop, developed in consultation with a local agronomist. Use of soil and plant tests help to determine needs throughout the crop cycle and testing ensures that nutrients can be delivered accurately with nothing left to chance. In between crops, Spaulding is experimenting with certain blocks by adding organic matter such as pyrethrum or milk product waste to the soil.

"The different applications all

continued over page ▶

led to varying levels of insect and microbial activity in the soil," she says. While at the experimental stage Spaulding has not incorporated these practices into main production. If ongoing experiments prove successful, they will be adopted into broader practices.

A striking feature of Tasmanian growers is their adherence to crop rotation measures, allowing for resting and recovery of land and build up of disease resistance.

"We rotate every crop and try to break up all the cycles. A brassica will never be planted in the same place twice, nor will spuds or carrots. We then use plants like poppies, pyrethrum and wheat to alternate or green manure crops."

Operating on larger acreages and with access to high-quality land, Tasmanian growers have the ability to let some of their land lie fallow. This ensures that crop rotations can be implemented, which help improve soil structure and for organic matter to be added and broken down into the soil.

Considerable work has gone into replanting of native vegetation on the property in recent times, as well as the fencing off of remnant vegetation and removal of invasive species.

"Where possible, we have planted windbreaks around crops using native vegetation."

These areas are used as habitats for beneficial insects to assist in dealing with pest and disease pressures on-farm. While Spaulding does not run a full IPM program on the property, it is an area of future research and experiment to see if practices can be successfully adopted into farm practices.

"To assist in working out what works, we allocated some paddocks to trial, using some with soft chemicals and some with no chemicals to see how they compared. We are working with a local etymologist and our agronomist to trial these new techniques and see what works best," says Spaulding. All changes on-property are managed using external experts to determine the best approach.

Other on-site activities include works to concrete run-off channels and the establishment of grassed holding dams to manage site run-off.

"We get our water tested through our QA system and we have come out clear for the past five years. They think we should bottle and sell it," says Spaulding

An enthusiasm to experiment with new techniques is a hallmark of the growing philosophy of Karen Spaulding, while her work with researchers and other experts will ensure that the land can be sustainably managed and that the latest practices are adopted on-farm.

> "We rotate every crop and try to break up all the cycles. A brassica will never be planted in the same place twice."

Ask the industry

with Scott Mathew

SCOTT MATHEW, TECHNICAL SERVICES LEAD AT SYNGENTA, OFFERS UP SEVERAL PRACTICAL CONVERSION RATES FOR USE ON-FARM.

Growing any sort of crop, you are often relying on your mathematical abilities. With this in mind, I have provided below a list of common formulas and conversions that you might need to use on a regular basis. Here are some of the ones that I regularly use in my role with Syngenta:

Conversions

1 ppm	= 0.00099 g/L
1 ppm	= 1 mg/kg
1 UK pint	= 0.568 L
1 UK gallon	= 4.55 L
1 US pint	= 0.473 L
1 US gallon	= 3.79 L
1 Chain	= 20.117 m
1 Bar	= 14.5 PSI / 100 KPA
1 mm of rainfall	= 1L per square metre
or	= 10,000 L
or	= 0.01 megalitres/ha
1 acre	= 0.41 ha

Calculating seeding rate

Using lettuce as an example:

1) Target plant population (plants/ha) ÷ Germination % ÷ Expected field establishment % = Seeds/ha

e.g. 45,000 ÷ 0.87 ÷ 0.95
= 54,446 seeds/ha

2) Seeds/ha ÷ Seeds/kg = Planting Rate (kg/ha)

e.g. 54,446 ÷ 800,000
= 0.068 kg/ha

Calculating plants per hectare

Using potatoes as an example:

1) Plants/ha = 100 ÷ Plant spacing in row (m) x 100 ÷ row width (m)

$$\frac{100}{0.3} \times \frac{100}{0.85}$$

= 330 x 117
= 38,610 plants/ha

Calibrating the application equipment

The accuracy of spraying will be determined by ground speed, nozzle flow rate and nozzle spacing. Although many sprayers are fitted with rate-compensating systems that can be monitored in the cab, it is vital that their accuracy is regularly checked. The basic calibration procedure should be known by all sprayer operators. A couple of handy formulas include:

1) To calculate the forward speed, time the sprayer over 100 metres.
If it takes 36 seconds to travel 100m then:

$$\text{Speed (km/h)} = \frac{100\text{m} \times 3.6}{\text{Time (seconds)}} = \frac{360}{36} = 10 \text{ km/h}$$

2) To calculate application volume in L/ha:
Measure nozzle output over 1 minute
eg 1.58 L/min
Nozzle spacing is 0.5m
Speed is 10 km/h

$$\frac{600 \times \text{nozzle output (L/min)}}{\text{Nozzle spacing (m)} \times \text{speed(km/h)}}$$

$$= \frac{600 \times 1.58}{0.5 \times 10}$$

= 190 L/ha

3) To calculate required nozzle output:

$$\frac{\text{Nozzle spacing (m)} \times \text{application rate (L/ha)} \times \text{speed (km/h)}}{600}$$

$$= \frac{0.5 \times 190 \times 10}{600}$$

= 1.58 L/min

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.

Steel's resolve

HAVING GROWN UP ON A FARM IN TASMANIA, A CAREER IN AGRICULTURE ALWAYS LOOMED FOR NICK STEEL. YET AFTER STUDYING FARM MANAGEMENT AT THE UNIVERSITY OF SYDNEY, CIRCUMSTANCES PREVENTED HIM FROM RETURNING TO THE FAMILY FARM AND HE BEGAN WORKING IN BANKING AND FINANCE. A THREE-MONTH TEMPORARY POSITION AT THE TASMANIAN FARMERS & GRAZIERS ASSOCIATION (TFGA) OFFERED HIM A ROUTE BACK INTO THE INDUSTRY AND NOW, OVER SEVEN YEARS LATER, HE IS EMPLOYED AS THE TFGA'S POLICY & ADVOCACY MANAGER. SPEAKING TO *VEGETABLES AUSTRALIA*, STEEL DISCUSSES THE CHALLENGES AND OPPORTUNITIES AFFORDED TO TASMANIAN FARMERS AND TFGA'S COMMITMENT TO SUPPORTING THEM.

What role does the TFGA hold for growers and farmers in 2013?

I think our core will always, as a group, be a collective to lobby government. That will always be our core, to provide that voice for farmers. I suppose in 2013, we can only hope the Australian Dollar is going to drop, especially for our export market. We can hope that it is a good year for farmers but [secondly], we can work with the Government to actually help our farmers. Help our farmers with things like energy pricing and freight. Freight is one of our biggest issues at the moment - trying to get an equitable system in place across Bass Straight.

Water is such an important issue here in Tasmania. We have been very fortunate to have our irrigation schemes going ahead at the moment, which is going to make a huge difference medium to long-term.

We have 80 or 90 different meetings just internally - that is across our councils and also our standing committees and committees in environment. It is an ongoing process to consult, but you can always do it better. That is what we are going to look for in 2013 - to try and consult better and provide farmers, who don't get the chance to come into the office or committee rooms that often, to get the chance to put their views forward. I think that's really important. You are a member, you are paying member fees - you want input.

So consultation very much informs the work that you do?

It does. We have our core, which is commodities, which is I suppose where our levies come from. So we are a levy organisation - people voluntary tick a box or pay us levies. That is through the traditional meat, wool, dairy, vegetables and grain. We've added to that with poppies and pyrethrum. That is where our core revenue comes from for TFGA. It would be great if it was compulsory, but it is voluntary. So we have to show a benefit to people. That is where we have moved into the area of NRM a number of years ago; climate change, water, wildlife and invasive species like weeds, foxes and cats.

Then you move into the other area, which is cross-commodities - general agriculture - which is around increasing farm-competitiveness. Then you have existing resources - education and training, land-use planning, property rights, RD&E - that sort of area.

Also, you move into market access - biosecurity, food security and trade. Then you've got other ones that are coming through at the moment - Aboriginal heritage, fire that sort of stuff.

Do you see any of these challenges as being specific to Tasmania, its environment and being detached from the mainland?

Obviously freight is a huge one, with Bass Strait in between. It was set-up, the Tasmanian Freight Equalisation Scheme, to assist trade; so that is our national highway basically. It sort of hasn't really gone that way. It does assist, but it does not to the point that it is equitable. We need to move to a system whereby if you have to freight a container from Tasmania to the mainland, it is on par as if you were freighting something from Melbourne to Ballarat, or Melbourne to Adelaide, so it is a similar sort of costing. At the moment, it's not and we need to try and look at a system [and] look at solutions whereby we can get that.

What are some of the benefits afforded to growers through living in Tasmania?

I suppose it's the natural things - the climate, the soils, the water - what we've got here. Then I suppose we have the long-term stable land ownership. A lot of farms are staying here and have been there for generations. On the back of that is their environmental stewardship. They produce, they want to be very good at it and they will actually stamp it with that.

The other one is that we have an established processing infrastructure here. Big processors in vegetables and in other areas too [such as] dairy, poppies and others, so that's fantastic. We have good government support; that was shown in irrigation expansion. That is a tick for government, very much so. We have a skilled workforce, that's fantastic. Then you look at the [fact that it is] largely disease free, and that's a big tick for Tasmania - there's a lot of pests we don't have.

Photographs by Chris Crerar.

You have been involved with the TFGA for over 7 years. How has the surrounding environment and industry within which you work changed during that time?

That is a good question. I think what I have seen is that it is a cycle. It is up and down, it is supply and demand. That is so much a part of farming. Farmers have to rely on the weather, which makes it very hard. They get on with the job, even with three years of drought, even with flooding - they seem to get back on their feet, I think I've seen that time and time again over the years.

I suppose throughout the years it has been fairly stable with membership. So people are supporting their lobbying group, and I think it is going to grow even more.

You are an office that has to deal with a lot of different industries and areas. Is it challenging for you and your staff to stay abreast of all the different fields?

We have key staff doing different areas, but in saying that, we are like that because our farmers are like that. They call themselves a vegetable farmer, but they are still doing lambs, they are still doing poppies, growing grain and these other things as well. So we need to be abreast of those issues too. You are right, there are a lot of areas and they are varied. In saying that, from a vegetable grower, there are certainly cross-issues with other farmers as well.

Well, things like water, freight, skilled labour all apply..

Exactly. Or taxation, chemicals, basic species - it can be very similar.

Coming from an agriculture background, what are you most passionate about in your role? Having been at TFGA for 7 years - why does it matter to you?

It does help coming from a farm. You have worked on a farm, you know some of the issues and you know how hard people work. I suppose the good thing about it is having a collective voice where you can actually get results. When you get a result, it lifts you even further. It is the challenge too - so challenging to actually set-up a policy, and then lobby that policy.

You also work with some great people. There are some amazing farmers out there and they put a lot of time into it. Not only to their business on-farm, but also to go into the TFGA to do the same thing as well.

Industry in the media

For many Australian families, December through to early February often means a period of extended holidays and rest. Not so for those in the vegetable industry and the team at AUSVEG. Throughout the past two months, AUSVEG and its Communication and Public Affairs team has been extremely active in the national media, providing comment and advocacy on a range of issues.

Within that period, a scorching heatwave saw markets overstocked with ripe produce. Speaking predominately on radio at the time, AUSVEG encouraged consumers to take advantage of cheap prices and ignore any minor aesthetic imperfections locally-grown vegetables may have incurred due to the heat.

Around the same time, the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) released a disheartening set of statistics. The rise in vegetable imports - up an alarming AUD$122 million to a total value of AUD$908 million - is a source of great concern for AUSVEG, and an area that the peak industry body commented heavily on. The industry is capable of servicing both local and international markets, but growers need support from the consumer and retail level.

The figures also served to prompt discussion on the subject of Country of Origin Labelling. AUSVEG and other parties have supported and promoted the issue, and it remains an area that receives frequent and recurring media attention.

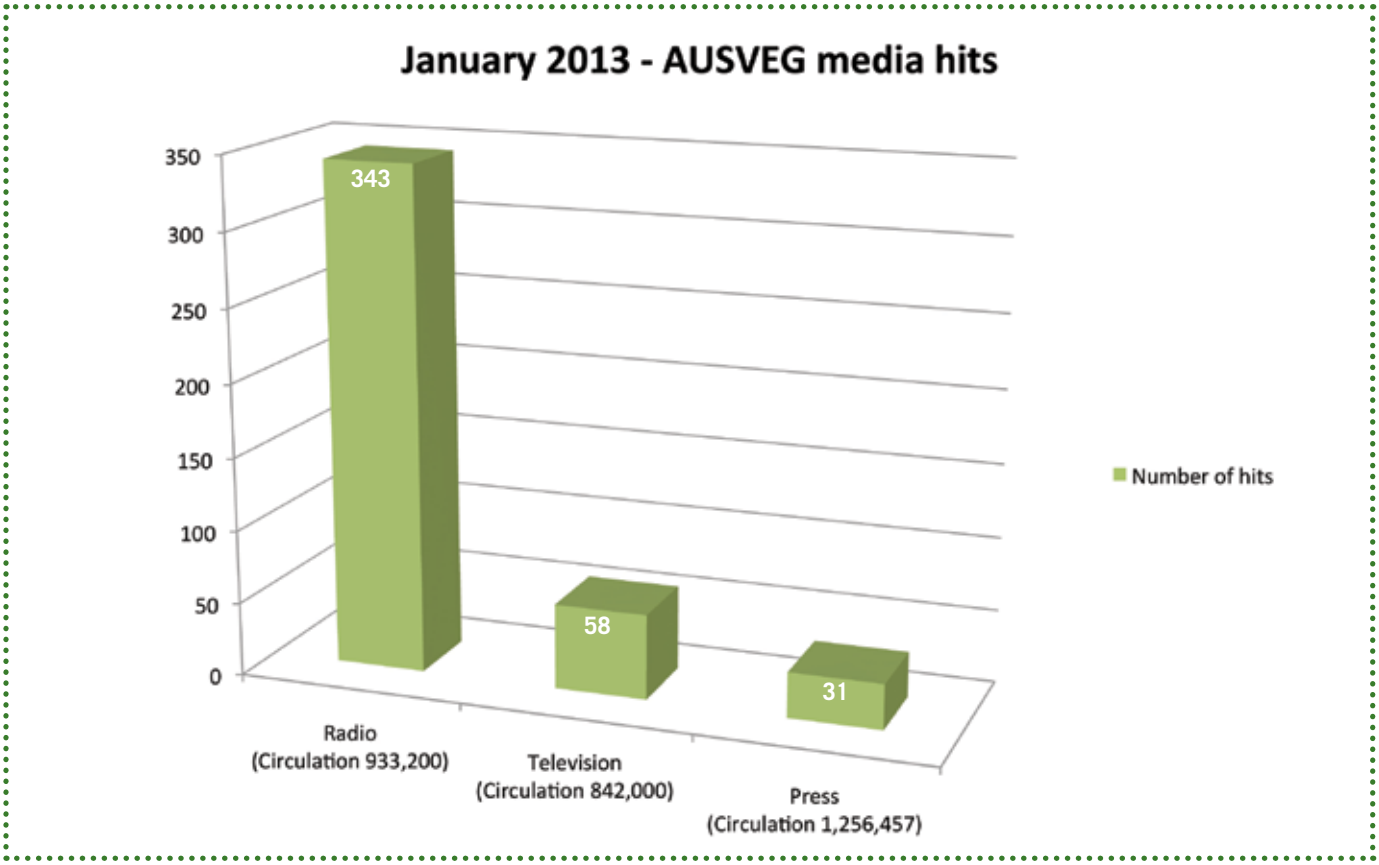
The closing stage of January and particularly throughout February saw AUSVEG receive a high volume of media mentions in Queensland, owing largely to the floods that have crippled southern parts of the state and are discussed within this edition of *Vegetables Australia*. 45% of all of the organisation's mentions were recorded in the state, as AUSVEG expressed its dismay at the impact to growers and the need for them to be made eligible for Category D Federal Government assistance. The Federal Government responded to these calls and granted affected areas with that listing. However, AUSVEG has also stated that growers in the region require continued, long-term support through a range of avenues.

The January/February 2013 edition of *Vegetables Australia* featured an article on an innovative sweetcorn project that sought to aid the fight against age-related macular degeneration. Following its release, the story received widespread attention from a host of national media outlets. Regional and national newspapers and radio networks in Western Australia, NSW and Victoria reported on the National Vegetable Levy-funded project, which has seen researchers develop a variety of sweetcorn with high levels of zeaxanthin, a naturally-occurring pigment that is important for eye-health.

In total, AUSVEG reached a potential cumulative audience of 3,031,657 during January. This high figure is consistent with others achieved in past months, and is an indication of the significant work that has been performed to ensure that there is an appreciation of the issues facing growers and the industry.

Key issues in January/ February:

- Heatwave leads to rapidly overstocked markets; consumers urged to buy local produce and disregard minor blemishes.
- High Australian dollar sees rise in vegetable imports.
- Country of Origin Labelling Senate Inquiry renews interest in issue.
- Scientists map the genome of the Diamondback moth, a major pest of brassicas in Australia.
- CPI figures indicate fall in price of fruit and vegetables.
- ACCC investigates supermarket-supplier relationship.
- Flooding in Queensland and NSW.



GROW YOUR INDUSTRY!

Notice of Vegetable Levy Payers' Meetings

AUSVEG is hosting a number of Vegetable Levy Payers' meetings around Australia, to provide growers with an opportunity to see where and how R&D levy funds are being invested on their behalf and receive an update on the activities of AUSVEG. Details for the meetings are below. Food and refreshments will be provided. These meetings are free for all Vegetable Levy Payers to attend. To RSVP, please email AUSVEG: info@ausveg.com.au

Wednesday 20 March 6:00pm - 8:00pm TAS Levy Payers' Meeting - Gateway Hotel, 16 Fenton Street, Devonport TAS 7310
This meeting will include an EnviroVeg Workshop

Monday 25 March 6:00pm - 8:00pm WA Levy Payers' Meeting - Joondalup Resort, Country Club Boulevard, Connolly, WA 6027

Tuesday 26 March 6:00pm - 8:00pm SA Levy Payers' Meeting - GrowSA Headquarters, Old Port Wakefield Road, Virginia SA 5120

Wednesday 27 March 6:00pm - 8:00pm VIC Levy Payers' Meeting - Italian Sports Club, Werribee, 601 Heaths Rd, Werribee VIC 3030

Thursday 28 March 4:00pm - 6:00pm VIC Levy Payer's Meeting - Cranbourne Golf Club, South Gippsland Hwy, Cranbourne North VIC 3977

Notice of Annual Vegetable Levy Payers Meeting 2013

This is an official notice to all levy paying vegetable growers advising that the Annual Levy Payers Meeting for 2013 will be held on 1 June on the Gold Coast, Queensland.

This is an important opportunity for vegetable levy payers to hear about the collection of the National Vegetable Levy, strategic priorities for the industry, and receive updates on current industry issues. It also allows growers to provide feedback on the levy process and R&D levy investment.

To RSVP, please email AUSVEG: info@ausveg.com.au

Where: Jupiters Gold Coast, Surfers Paradise, Queensland
When: Saturday 1 June, 2013 from 2.00-2.30pm

Around the states

Queensland

Growcom has welcomed the relief assistance announced by the Federal and State Governments to help Queensland horticulture growers recovering from the severe weather and floods of the Australia Day long weekend. The organisation was one of the first industry bodies to call for a fast-tracked declaration of Category C assistance in the hardest hit areas. After surveying growers across the state about damage to their crops and infrastructure, we provided additional detailed supporting data to government to justify Natural Disaster Relief and Recovery Arrangements (NDRRA) support.

The organisation welcomed the Prime Minister's announcement that clean-up and recovery grants of up to $25,000 are now available for farmers. We also welcomed news of the Disaster Income Recovery Subsidy (DIRS), which will provide help to farmers who can demonstrate they have experienced a loss of income as a direct result of the natural disaster. This will provide fortnightly payments equivalent to the maximum rate of the Newstart Allowance depending on the person's circumstances. This is on top of payments for one-off emergency financial assistance. This assistance is critical in the areas of Bundaberg, North Burnett, Fraser Coast, Gympie and Lockyer Valley.

The availability of these recovery grants and other assistance will provide an important injection of confidence and allow growers to get on with urgent rebuilding and replanting. However, by the time this column appears in print, we hope that Category C, DIRS and one-off emergency financial assistance arrangements will have been extended to growers in regions outside the five so far announced.

Regions such as Scenic Rim, Fassifern Valley, Sunshine Coast and Logan and Albert were also hard hit by the flooding and severe weather. Kalbar had the worst flooding seen in 60 years, while the Sunshine Coast lost tree crops to severe wind. It is only logical that these areas should be included in access to assistance measures.

In total, we estimate that the natural disaster will cost Queensland growers more than $100 million in lost production and infrastructure. In many districts, the damage was worse than in the 2010/11 floods and Cyclone Yasi.

We calculate at least 65 per cent of growers in the Lockyer Valley, 55 per cent in the Fassifern Valley, 50 per cent in the Bundaberg region and 30 per cent in the Gayndah/Mundubbera region have been severely impacted. Ongoing challenges include the loss of farm labour and fertile soil washed away by floodwaters.

We urge the government to introduce wage subsidies to help growers to keep existing staff and appoint Industry Recovery Officers (IROs) to help growers access assistance as quickly and as efficiently as possible. In the 2010/11 natural disasters, growers who were unable to fill out their paperwork correctly were faced with long and frustrating delays in assistance. Growcom would like to see the process streamlined this time around and having IROs in place would definitely help.

An up-to-date list of assistance available to horticulture growers is on the Growcom website (www.growcom.com.au). Information is also regularly updated via social media on www.twitter.com/growcom and www.facebook.com/growcom.

Growers who have not yet been contacted by Growcom due to communication difficulties with telephone lines down are welcome to provide information on the damage to their properties by ringing us on 1800 654 222.

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Growcom
Chief Executive Officer
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New South Wales

With only seven sitting weeks of Federal Parliament before the election on 14 September, NSW Farmers has been focusing on the Federal Government's proposals to amend important legislation for biosecurity and agricultural chemicals before the election.

NSW Farmers is concerned the largest reforms to quarantine and biosecurity in Australia's history are compromised due to limited consultation on the legislation prior to its introduction to Parliament. NSW Farmers is particularly concerned the proposal will move the focus of Australia's biosecurity system away from science-based analysis and decision-making to one susceptible to political interference.

It is essential the body charged with protecting Australia's biosecurity has the capacity to act independently of the political pressures of the day. To do this, NSW Farmers is calling for amendments to the bill, which establishes an independent body to administer Australia's quarantine standards. A panel of eminent scientists must have oversight of this body's decisions to ensure appropriate deliberation on biosecurity risks and implementation of protocols necessary to manage these risks.

NSW Farmers is also strongly opposed to the government's proposal to increase the regulatory burden faced by suppliers of agricultural chemicals. As a small market for agricultural chemicals, any unnecessary regulatory burden is likely to see delays in the introduction of new chemicals and the withdrawal of effective safe chemicals. This would impact the competitiveness of Australian growers.

We believe the government's policy should seek to develop a regulatory framework that will deliver the productivity needs of Australia's agricultural and horticulture industries. The first step to such a framework is the development and funding of a minor use registration program. This would enable the safe expansion of the number of chemicals available to smaller industries and other uses where it has not been economical for the supplier to register the product.

To conclude, I am pleased to announce the NSW Farmers' Horticulture Conference and AGM will be held at the Chatswood Concourse on 16 July 2013. As part of the conference, a forum on developing a 'Brand Australia' will be held. I am delighted the Leader of the Australian Greens, Senator Christine Milne, Deputy Chair of the ACCC, Dr Michael Schaper and AusBuy CEO, Lynne Wilkinson have already confirmed they will be among the guest speakers at the forum. I look forward to meeting with NSW Farmers' horticulture members at the conference in July.

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Horticulture Committee
Chairman
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Victoria

"Do vegetable growers contact their local politicians regarding the many issues facing the vegetable industry?" This recent question from my West Australian colleague, Jim Turley, reflected what vegetable growers in all states should be doing in maintaining close contact with their local members and requesting support for the vegetable industry, not only at State but also Federal Government levels. This is particularly relevant with both Federal and Victorian elections taking place this year.

Vegetable growers are 'price takers,' involved in a supply and demand marketing operation and have great difficulty passing on steep rises in production costs that constantly arrive for payment before vegetables are harvested and sold. It is obvious from dealings with the Victorian State Government regarding a new market facility at Epping that the business operation of vegetable growers or the fresh produce industry is not understood by either Government. While supermarket operators and the general population are crying out for cheaper vegetable prices, the vegetable grower is not receiving an equivalent return to cover the current production costs. Now is the time for all vegetable growers to make politicians understand that if the current trend continues, there will be no vegetable industry in Victoria or Australia because the current and future generations will not remain in an industry that cannot maintain and support a normal lifestyle for their families.

2013 National Vegetable Expo is all ready to go on 2 and 3 May 2013 at the Expo Site in Sneydes Road, Werribee. All seed plots for new vegetable varieties have been planted and the trade exhibitor section is filling fast. The National Vegetable Expo Organising Committee consists of representatives from Vegetable Growers Association of Victoria (VGA Vic), Seed Companies and two stalwarts of the vegetable industry, Chairman Les Giroud and Site Supervisor David Milburn. Once again, we are delighted with a major contribution from the National Horticultural Publication, *Good Fruit and Vegetables*. There has been a long tradition attached to this event over the past 50 years, originally initiated by VGA Vic as Grower Field Days in 1963. We welcome all vegetable growers and industry associates to attend, including those from interstate and overseas.

'Technology and Training' - the two T's appear to be prominent across the vegetable industry. Growers are now encouraged to increase their technological skills and knowledge to be used in assisting their day-to-day work on the farm. In addition to PCs and Notebooks, iPads and iPhones, with their variety of software packages and applications, are now seen as valuable tools for more efficient business management practices. For information on technological training, visit the AUSVEG website (www.ausveg.com.au) or Vegetables Victoria (www.vegetablesvictoria.com.au). Training organisations are desperate to overcome the loss of students from the vegetable industry and may have finally received the message that 'on the farm' training is more beneficial to growers and their farm workers than attending TAFE courses away from the farm. For information on farm worker training, visit TAFE websites or contact registered training organisations.

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Western Australia

As we go to print, Western Australia is in the lead up to an election on the 9th of March. vegetablesWA has been active in getting the political support for our most pressing state issues, using input from our members and the Committee of Management. Government needs to recognise that as well as the significant economic contribution our industry makes, vegetable production now and into the future provides a key means of providing food security and mitigating the spiralling health budget costs associated with chronic disease. Some of the issues vegetablesWA have raised include:

- A renewed dedication to opening export markets to unlock the potential in the context of an overcrowded domestic market by engaging a horticulture export development officer amongst other strategies.
- Scope and provide the infrastructure required to develop Horticulture Precincts at Myalup, Manjimup-Pemberton and Gingin-Dandarigan, all of which offer efficient access to markets and productive topography and-climates.
- Lift the payroll tax threshold to $1.5 million and index it to future wage increases so small businesses are not liable and remain viable. The tax rate of 5.5% is also significantly higher than the national average of 4.9%. In a competitive national labour market, the tax rate should be reduced.
- Scope the potential of new technology to eradicate or achieve significant suppression of the Mediterranean fruit fly and Diamondback moth in West Australia.
- Review the failed Horticulture Code of Conduct as it relates to the commercial relationships between growers and wholesalers in West Australia, with a view to introducing state-based legislation where appropriate to address the ongoing failings of the Commonwealth government Code.
- Develop and mandate usage of curriculum materials across primary and high school focussed on healthy eating as an entry point to other educational outcomes and improve the eating habits and health costs of West Australians.
- Support the Buy West Eat Best initiative as well as assisting the development of regional brands such as the Carnarvon Food Council and the Southern Forests Food Council. Take strong action on Truth In Labelling to ensure that Australian-grown products are clearly labelled as such through Council of Australian Governments.
- The government not refer their industrial relations powers to the federal government Fair Work Act 2009; and that development of the state Labour Relations Legislation Amendment and Repeal Bill 2012 and associated Modern Awards reflect the needs of the vegetable industry.
- Commit to maintaining a critical mass of productivity-focussed specialists within the Department of Agriculture and Food and continue partnering with vegetablesWA to leverage resources, returning the department to the 2009-10 funding levels of the previous government.
- Introduce leadership and entrepreneurial skills courses for the professional and personal development of young people in the horticulture sector.
- Initiate a simulated response to a potential Varroa mite incursion into West Australia in collaboration with industry as a means of preparing for the future.
- Form a regulatory audit committee which includes local government to cut red tape and unify legislative interpretation for land development.

At this stage The Nationals have committed to a number of our key priorities, including an Export Development Officer and the further development of Horticulture Precincts. At the time of writing, the Labor and Liberal parties are yet to release any agriculture policies.

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vegetablesWA
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South Australia

Grow SA's *Horticulture Master Class* has received a fantastic reception from growers all over the state. The first stage in the process commences this month with a business-based industry plan being formulated to underpin the Master Class program. Numerous plans have been formalised in the past based on production and marketing aspects of horticulture, but we believe that this will be the first time planning has focused on the 'business of horticulture.'

A reminder to all growers that plain packaging that fails to indicate growers name, address etc. is not permitted in South Australia. There have been reports of produce being sold in plain packaging and at reduced prices, which is in contravention to a number of state regulations and is counterproductive for industry. Remember these rules are in place to protect the industry and all its growers and impact on important issues such as biosecurity and fair trading.

FarmCard spreads its wings with over 12 courses held and a number of larger packers stipulating FarmCard as a condition of employment within labour hire contracts. FarmCard provides the industry side of induction, which shares some risk with growers and ensures that participants have an understanding of important industry issues such as QA, HACCP and OH&S. Additionally, FarmCard provides portable training records and validates Visa details for overseas workers, which again reduces the risk to the employer.

Mike Redmond
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Tasmania

In 2013, Australian farmers have to sell ourselves and our products better. We hide our light under a bushel, a bushel of imported food - when ours is so much better. Mick Keogh of the Australian Farm Institute has been looking at the reasons that US farmers talk themselves up all the time, while we sit quietly by. He notes that most US citizens believe that their farmers produce the cheapest and the best food in the world, "and for that reason US consumers should be grateful and the US government should maintain current farm support policies." Of course, it's a myth. American farmers just happen to sell themselves better and American consumers believe their spin.

Keogh recently made a quick comparison of US and Australian food prices. After making adjustments for the exchange rate, local taxes etc, he concluded that our food was 14 per cent cheaper than similar American products. In his view, the quality of trim, packaging and products (particularly dairy and meat products) was generally better in Australia, too.

The problem we have in Australia is that we don't believe in ourselves enough. Australian farmers are underselling themselves. Our farmers tend to be reticent about how well and efficiently they produce food. We want people to buy Australian, but we are not very good at giving them reasons to do just that.

So here is why Australian consumers should buy Australian produce.

- In Europe, the US and Asia, Australian agricultural products are prized for their quality. If they know what's good for them, why don't we?
- Our food is consistently safe to eat: just check the National Agricultural Residue Survey and the National Antibiotic Monitoring Program.
- Our national livestock identification system (NLIS) is the best in the world. Meat can be tracked from paddock to plate so you can be sure of its provenance. There is no such foolproof system in the US or Brazil.
- Australian agriculture has the lowest level of taxpayer support of any agriculture sector in the world, according to the OECD. It means we operate efficiently despite having one of the harshest growing climates on earth.
- We are the only sector of the Australian economy to have reduced our greenhouse gas emissions over the last two decades. Keogh calculates that, without the 30 per cent reduction in emissions achieved by the agriculture sector over this period, Australia would have exceeded its Kyoto Protocol national emission target by a considerable margin.
- We operate under one of the strictest environmental regimes in the world. Australian farmers use much lower rates of chemicals and fertilisers than farmers in virtually any other farming nation.
- Our farm animal welfare standards are some of the highest in the world, with many practices and production systems banned in Australia that are still utilised overseas. Buying Australian meat is the best way to ensure high standards of animal welfare.
- Finally, Australian farms are largely family-owned, which runs against international trends.

With just a little help, this is a story that can sell itself - so make sure you share this information with everyone you know in 2013.

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Fax: (03) 6331 4344

CALENDAR

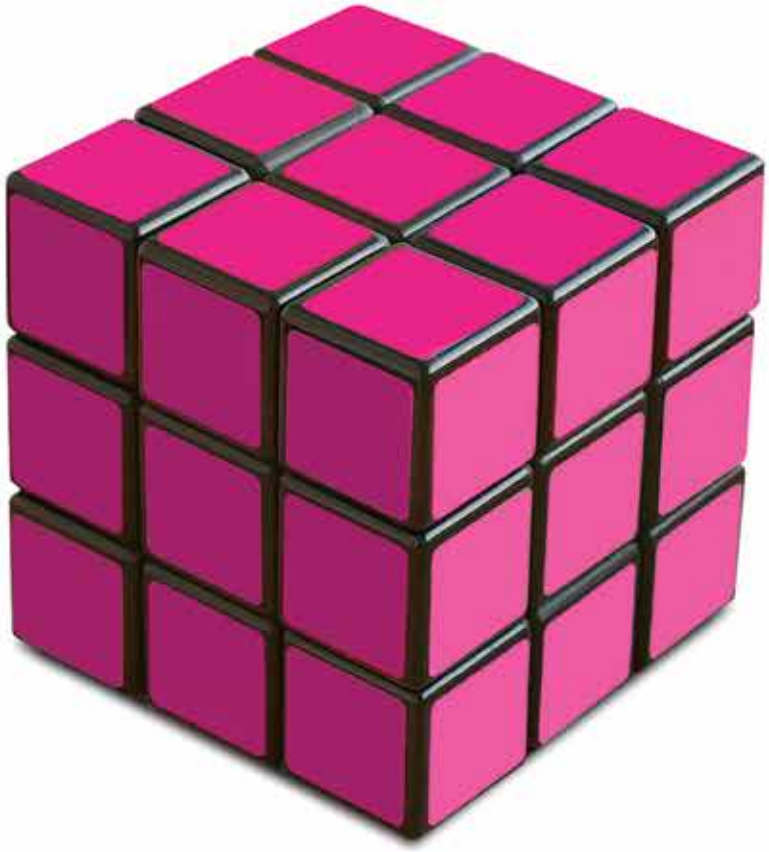


30 May - 1 June 2013

AUSVEG National Convention, Trade Show and Awards for Excellence 2013
Where: Jupiters Gold Coast, Queensland
Further information: AUSVEG (03) 9822 0388 or convention@ausveg.com.au

1 June 2013

Annual Levy Payers Meeting
Where: Jupiters Gold Coast, Queensland
When: Saturday 1 June, 2013 from 2.00-2.30pm
Further information: info@ausveg.com.au



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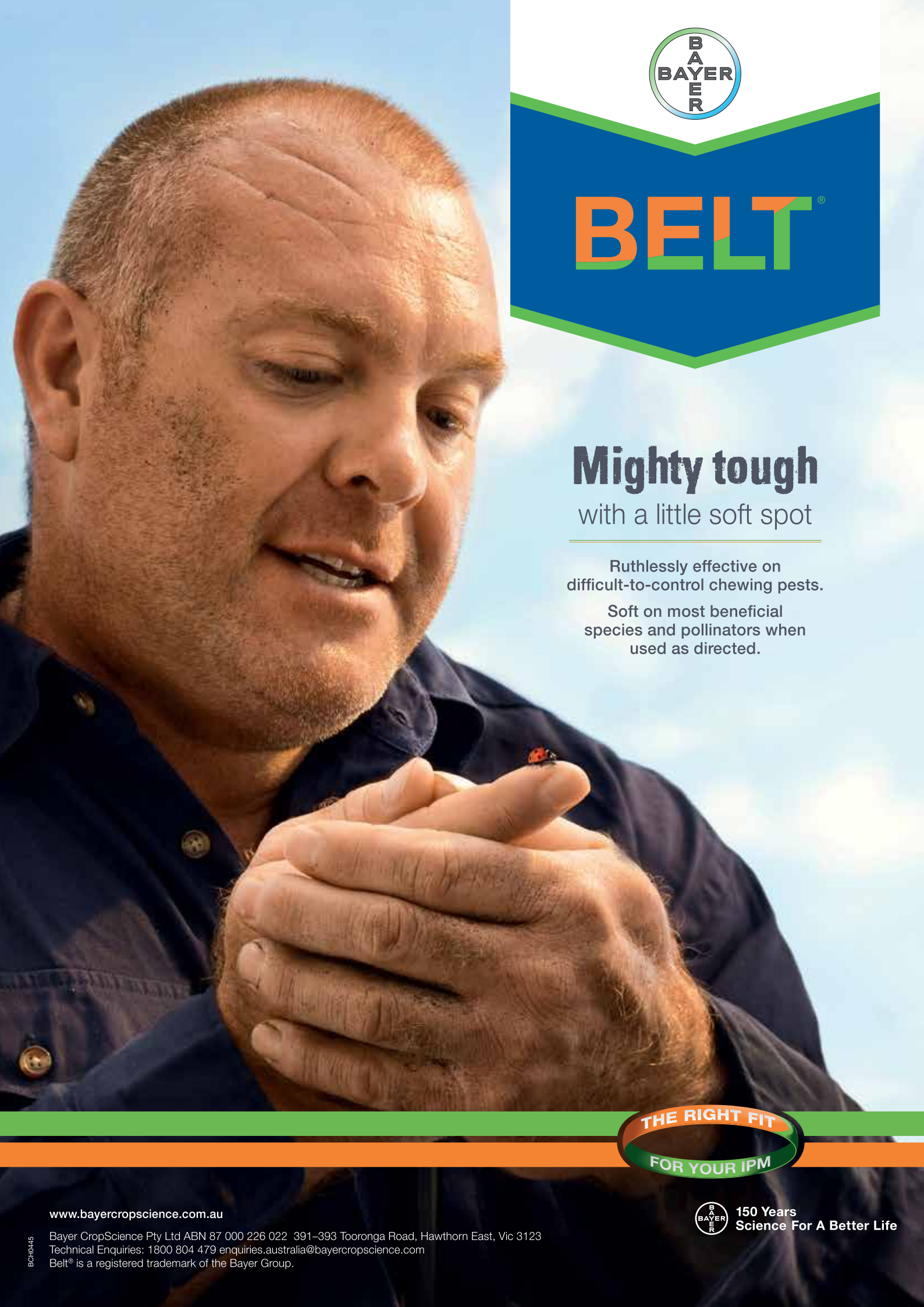

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