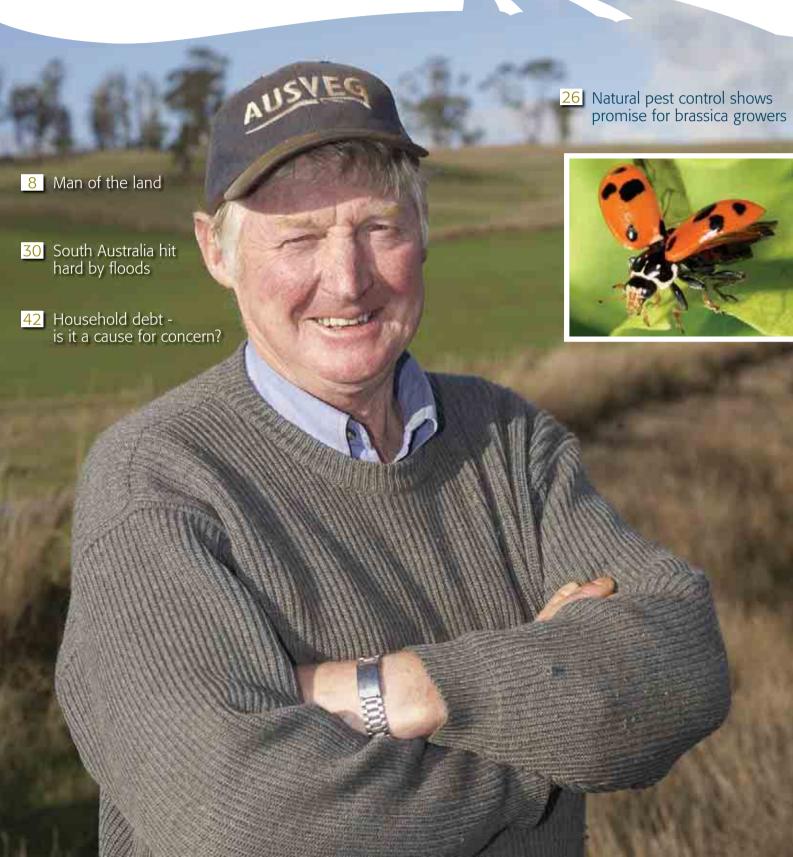
RRP: \$6.00 + GST

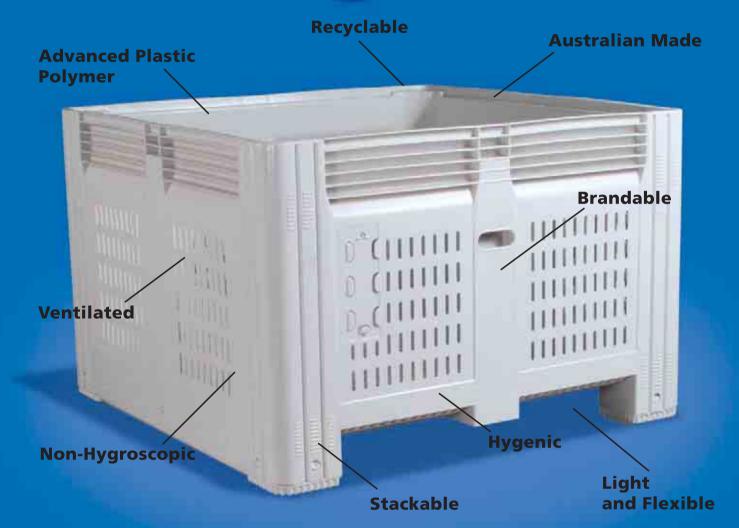
ISSN: 1832-3340

# vegetables australia





# MegaBin



# Nally. Designed to last longer.

- Solid and Vented Available
- Single Piece Construction
- Self-Palletising Design
- Easy to Clean

- Non-Porous Surface
- Rounded Corners
- No HACCP Issues
- Durable and Sturdy

Tipping Bars, Lids and Bungs are available

Free Call Australia Wide

1800 659 075



# vegetables australia



### **AUSVEG Chairman**

Michael Badcock

## Editor

Youna Angevin-Castro

Tel: (03) 9544 8098 Fax: (03) 9558 6199 Mobile: 0407 242 788

Email: editor@ausveg.com.au

### **Editorial Committee**

Anthony Brandsema
Tasmanian vegetable grower

John Mundy

South Australian vegetable grower

Figaro Natoli

Western Australian vegetable grower

Glenn Abbot

Queensland vegetable grower

Thérèse Schreurs

Victorian vegetable grower

David Chung

New South Wales vegetable grower

Alison Anderson

**News South Wales** 

Industry Development Officer

Jonathan Eccles

Industry Development Manager, AUSVEG

Lisa Maguire

Communications Manager, AUSVEG

## Advertising

Max Hyde

Hyde Media Pty Ltd

Tel: (03) 9870 4161

Email: max@hydemedia.com.au

## Contributors

Simon Adams, Joe Castro, Greg Ford, Melissa Di Ciero, Ric Frearson, Graham Gosper, Jodie Guest, Tim Richards, Barbara Hall, David Jarwood, Megan Lewis, Jodie Powell, Tom Rafferty, Stephen Zelez

### Design

Flying Dog Designs www.fddesigns.com.au

### Printer

Erwins Printing Pty Ltd

### Distribution

**Dynamic Direct** 

READERSHIP: 9500

Thank you to all growers and researchers for your participation in the interviews.

Published by:





All research and development projects are facilitated by HAL in partnership with AUSVEG and are funded by the National Vegetable Levy. The Australian Government provides matched funding for all HAL's R&D activities.

For more information visit www.ausveg.com.au

Vegetables Australia is produced by AUSVEG and is free for all National Vegetable Levy payers.

## Industry Development Officers (IDOs)

New South Wales

Alison Anderson Phone: 0409 383 003

Queensland

Jack Milbank Phone: 0408 135 042

South Australia

Craig Feutrill Phone: 0418 831 089

Tasmania

Stephen Welsh Phone: 0400 006 095

Victoria

Patrick Ulloa Phone: 0429 990 553

Western Australia

David Ellement Phone: 0408 941 318

## Disclaimer

AUSVEG makes this magazine available on the understanding that users exercise their own skill and care with respect to its use. Before relying on or altering any business practices users should carefully evaluate the accuracy, completeness and relevance of the information for their purpose and should obtain appropriate professional advice relevant to their particular circumstances. This magazine contains views and recommendations that do not necessarily reflect those views of AUSVEG.

Special care should be taken with agriculture chemicals which may have been used experimentally but are not yet registered for commercial usage. Clarification should be sought from the researchers or the chemical manufacturers.

### © Copyright AUSVEG 2006

This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process without prior permission from AUSVEG. Requests and inquiries concerning reproduction and rights should be addressed to The Editor, Vegetables Australia, PO Box 563, Mulgrave VIC 3170.

ISSN 1832-3340

AUSVEG PO Box 563 Mulgrave VIC 3170





AUSVEG welcomes new CEO

Queensland nursery nurtures more than just seedlings

# Contents

- 6 Chairman's Message
   Michael Badcock
- 6 Editor's Message
- 8 Ian Young: Man of the Land
- 11 AUSVEG welcomes new CEO

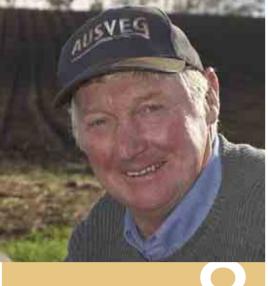


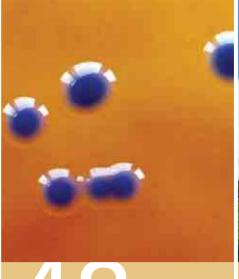
- 16 Packaging a partnership for the future
- 18 Embracing diversity in the vegetable industry
- 20 Chinese community holds firm roots in Sydney Basin



- Bilingual support a success for Vietnamese growers
- 22 National fruit and veg campaign looks to bearing fruit for producers
- 23 Solution found for parsley root
- 24 New booklet answers grower questions on biotechnology
- 25 Major research breakthroughs for vegetable brassicas
- 26 Mosaic virus solutions look to the future
- 28 Queensland nursery nurtures more than just seedlings









lan Young: Man of the Land

News — AQIS survey shock on imported food

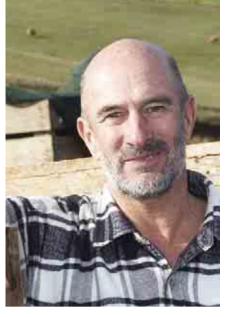
Chinese community holds firm roots in Sydney Basin



- 30 South Australian food basket area hit hard by floods
- 32 Asian vegetables getting the name right
- 34 New on-farm diagnostic test set to battle clubroot
- 36 Natural pest control shows promise for brassica growers
- 38 Keeping it fresh
- 39 Pest Watch Rutherglen bug
- 40 Producing a crop of abundance for the future
- 41 Improving soil the organic way



- 42 Household debt --is it a cause for concern?
- **44** Researcher profile Tom Rafferty
- 47 News —
  National security attacks
  Aussie farmers' pockets
- 48 News AQIS survey shock on imported food
- 49 News
- 50 News
- 51 Around the States
- 54 Calendar of Events



# A word from the AUSVEG Chairman

Welcome to the fourth edition of Vegetables Australia - the official magazine of the Australian vegetable industry.

مرحبًا بكم في الطبعة الرابعة من فيجتابلز أستراليا- المجلة الرسمية لصناعة الخضراوات الأسترالية.

歡迎閱讀第四期的<澳洲蔬菜>- 澳洲蔬菜業的官方雜誌。

Chào mừng ấn bản thứ tư Vegetables Australia – tạp chí chính thức của Thương nghiệp Rau xanh Úc. សូមស្វាគមន៍ចំពោះការបោះពុម្ពផ្សាយលើកទី៤នៃ Vegetables Australia - ទស្សនាវដ្តីជាផ្លូវការសំរាប់ឧស្សាហកម្មបន្លែអូស្រ្តាលី។

2006 will be a year of great change for the Australian vegetable industry. Following a period of immense challenges and hardships, the industry has had an opportunity to reflect on its position, and consider where it sees itself in the future. With the conclusions now reached from the industry stocktake, we now have the opportunity to build the framework for a bright and sustainable future.

All great achievements depend on teamwork, and it is through unity and cohesiveness throughout the whole industry that we will forge a strong and steady path to success. Over the coming months, the AUSVEG Board will consider the many alternatives, and deliberate the most effective and appropriate way forward.

These strategic decisions, and the New Vision, will be revealed to the industry at the

Australian Vegetable Industry Conference in Brisbane. I hope many of you will join us as we commence the long journey to unity and sustainability.

It is also with great pleasure that I welcome John Roach as the new CEO of AUSVEG. John joins us from the seafood industry, and brings with him a wealth of experience and insight, which will be invalu-

able as he helps guide AUSVEG, and the Australian vegetable industry into the future.

MS Bodcock
Michael Badcock

AUSVEG Chairman





When I started working on Vegetables Australia nine months ago, the guiding principles behind all decision making was – "What do growers want and need to read about?"

With this in mind, and with the help of a committed group of growers on our Editorial Committee, over the last four issues we have tried to compile a range of stories and issues which offer as much information to as many different people as possible.

Anecdotal evidence, through conversations with growers and letters, has suggested that there is general acceptance of the role Vegetables Australia plays in keeping you informed of new research and practices which may contribute to your business.

Now it is your chance to actually tell us what you want!

In this issue of Vegetables Australia you will find a short readership survey. By taking the time to fill out the survey, and sending it back to us, you not only have an opportunity to help shape the future of the magazine, but if you return it to us by 24 February, you will also go in the running for a couple of fantastic prizes.

I look forward to receiving your comments, and over the next few months will endeavour to continue to shape the publication into what YOU want it to be.

Youna Angevin-Castro
Editor, Vegetables Australia

eminis Vegetable Seeds is the largest developer, grower and marketer of vegetable and fruit seeds in the world. As a worldwide company, Seminis offers growers in 150 countries more than 4,000 distinct seed varieties representing nearly 60 species. Seminis has full-time breeders working to offer you the best genetics for the future. In Australia, Seminis offers a range of products with excellent performance. Here are some examples of products to plant now.



Donner is export quality with firm, white curd. Best-suited to late autumn and spring harvesting in cool areas. Can go into winter harvest in milder areas. Tall, erect frame with good curd cover. Medium maturity.



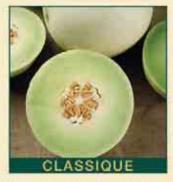
Tajera is a new improved Donner type. It has a hardier plant & excellent wrap. Seed is available for tray trials.



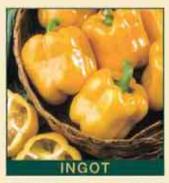
Veno is a unique type with very dark colour, erect habit and thick leaves. Slightly savoyed at later stages of growth. Very robust and adaptable. Good resistance to downy mildew, Excellent shelf life.



Nighthawk New cool season spinach with leaf quality equal to our "Veno". Nighthawk in comparison has a more vigorous and erect habit, pf1-7.



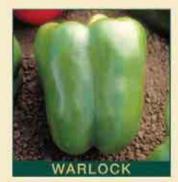
Classique produces a very firm, crisp, green-fleshed melon with exceptional skin qualities and high sugars. Classique has consistently produced good yields of high quality fruits under a wide range of conditions.



Ingot is the current market leader in terms of yellow capsicums. Ingot produces consistently high yields of medium sized, thick walled, firm fruit. It also offers resistance to BLS 1, 2 & 3.



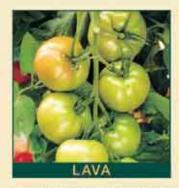
Tycoon offers excellent yielding capacity for warm season production periods, with the ability to set high numbers of marketable fruit on a compact bush. On full maturity Tycoon offers deep red colour with excellent wall thickness. It has an extensive disease package.



Warlock is the market leading blocky capsicum, providing growers with exceptional wall firmness and fruit weight. The excellent fruit colour at red stage is demanded in all markets. Good quality Warlock seed is available now and will remain in good supply.



Pinnacle has become the benchmark variety for tomato production in northern & central Queensland. Excellent quality fruit renowned for maintaining It's firmness & internal colour under difficult growing conditions.



Lava is an excellent complement to any growing program currently using Pinnacle. Growers requiring Fusarium Race 3 tolerance should definitely consider growing Lava or Pinnacle.



Ovation has a late spring, summer and autumn harvest in cool and mild areas. Versatile with medium maturity. Vigorous, medium height plants with fine-beaded, domed heads. Blue-green colour with excellent holding ability in the field.



Congo is a very dark green zucchini. The fruits are short (15-18cm) and cylindrical. Congo has a small, compact plant which is very open and easy to harvest. Congo is one of the most popular varieties selling in Australia today.





# Man of the land

Getting caught in a wildfire almost 40 years ago hasn't slowed down Tasmania grower and AUSVEG Board member lan Young.

Tasmanian grower and AUSVEG Board member lan Young is a busy man.

He's been an AUSVEG Board member for three years, along with President of the Tasmanian Farmers and Graziers Association (TFGA) and Chairman of a McCain growers' commodity group for the same timeframe.

And if that, along with running his property and growing, didn't take up enough time, lan and his wife are busy planning their son's wedding in January. The garden wedding will take place on lan's 550 acre property at East Sassafras, on Tasmania's north west coast. "It's bedlam – I've got lots of instructions." he said.

lan, now 64, and his family moved to East Sassafras in 1980, re-locating from Bruny Island, on the south east coast.

"Our family had been there for 150 years, so it was a fair old wrench to come here. My father wanted to retire and it was more of a lifestyle enterprise down there. If we wanted a better future, we had to diversify.

You can grow just about any crop you can think of on the north-west coast and it's close to the processing plants. In hindsight, it was one of the best day's work I ever did in my life to come here."

Currently, lan grows peas, beans, potatoes, carrots and medicinal poppies. He used to grow sweetcorn and sometimes "throws in" wheat and barley. Livestock runs on the property as well.

Our family had been there for 150 years, so it was a fair old wrench to come here.

Aside from the property, lan said he's been particularly busy lately, working on challenges facing growers nation-wide. He said it's been an especially tough 12 months for growers.

In the current tough environment, highlights of the year included AUSVEG and the

TFGA raising awareness about the "crisis in labelling" over the country of origin issue and the Fair Dinkum Food campaign, calling for a reduction of imported produce, he said.

But, lan said, perhaps the greatest challenge facing growers these days is finding a position in the global marketplace.

"Globalisation has had the most impact. We've got flattened domestic markets and we're in a transitional period.

"With technology today, supermarkets can get on the internet and call for tenders from anywhere. It's much, much more competitive."

Wage parity and its impact on imported produce prices is also a major issue, particularly with Chinese goods flooding the market, he said.

But with AUSVEG, state bodies and state and the Australian governments working hard together to confront issues facing growers, lan said the future is becoming more secure. Continued on next page







# Man of the land (continued)

"We have to change direction and manage how we work better. High-labour crops, such as brassicas, are probably under threat. The solution is to move forward and find niche markets in affluent countries. It's certainly a major challenge and I'm just one of a number of committed people. It's about a combination of efforts and keeping up the pressure."

Not only is lan a busy man, it's remarkable he's here at all. That's because, almost 40 years ago, he was caught in a bushfire on his then-property at Bruny Island.

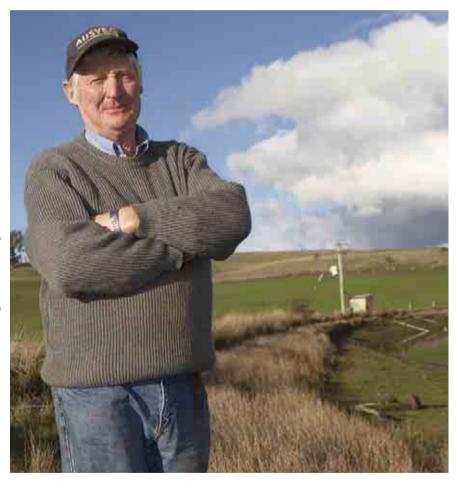
lan sustained burns to 25 per cent of his body, on his arms, hands and face.

In 1967, in what came to be known as Black Tuesday, lan was working a crawler tractor and with only sketchy communications available in those days, thought the fires were on the Tasmanian mainland.

"We thought with a mile and a half of water between us, we were safe. But we knew something was up because it was pitch-dark in the middle of the afternoon. I thought I'd do some back-burning in case we got a fire on the property.

"There was a fire and it got behind me. When I saw it, it was too late to run – and if I had run, I wouldn't be talking to you today.

"It wasn't pleasant. There were 20-foot flames. I had a big woollen jumper I was sitting on, a hat on, and I'd cut the sleeves out of my shirt because it was so hot. The fire got in a grass paddock and went over me and I thought 'Well, I'm burnt, and I'm a mile and a half from anywhere'. It happened that fast, I just kept driving."



lan sustained burns to 25 per cent of his body, on his arms, hands and face. He spent six weeks in hospital – but took about six hours to get there, partly because he detoured on the way home to get medical aid, checking first if a cousin working nearby was okay.

As a result of his experiences, lan felt great empathy for victims of the Bali bombings: when his sister visited him in hospital, his face was so swollen a "grape the size of a pea" could barely fit in his mouth.

He also ardently admires Dr Fiona Wood, a burns specialist named Australian of the Year for her work with 'spray on skin' and burns victims.

Despite setbacks, lan has continued to work hard, and it looks like he's not the only busy one in the family. His wife is the State President of the Country Women's Association (CWA) and his son is the State President of Rural Youth. "It must be the air," Ian joked.



# AUSVEG welcomes new CEO

AUSVEG welcomes the appointment of the new Chief Executive Officer, John Roach.

"I have great pleasure in welcoming John Roach to head up the national peak body for the vegetable industry. John brings to the position a wealth of experience from the seafood industry and rural industries", said AUSVEG Chairman Michael Badcock.

In making the announcement, Michael highlighted the synergies between John's experience in the production of fresh seafood and the vegetable industry.

John is recognised as an innovative and progressive leader, with outstanding knowledge of government and industry strategic planning. He joins AUSVEG at a critical time. The industry is currently working with the Australian Government through the Industry Partnerships Program to set directions for long term sustainability.

In accepting the position John highlighted the recent difficulties both the seafood and vegetable industries in Australia have been experiencing. Rising costs, labour shortages, lower returns, globalisation, declining exports, flow of products into Australia and labelling are just a few common issues across both industries.

However, John underlined the industry's potential in stating that "vegetables and salads" are the foods that meals are built around.

"Consumers add seafood or meat or chicken or pasta to vegetables. It is the one food constant in everyones diet," John said.

"And given Australia's rising obesity levels, particularly in our children, vegetables needs to assume a greater role in the well being of our population," he added.

John grew up in the NSW southern highlands "picking up potatoes" and completed Agricultural College at Yanco in the late 1970s. He moved into the seafood industry in the mid 1980s in various businesses and roles. In 2000, John completed the Australian Rural Leadership Program and has been undertaking studies for an MBA

"I welcome the opportunity the AUSVEG Board has given me in taking up the CEO's role and to meeting with growers and industry leaders across Australia, to hear first hand their concerns and ideas to shape the future direction of the industry," John concluded.

# RZ Seeds & Services













# Adviser - Heated Greenhouse Crops

Australia and New Zealand

Rijk Zwaan is an internationally respected vegetable seed company with a long tradition of breeding top quality vegetable varieties for professional growers. We require an experienced and dynamic person, for this newly created position, to service the heated greenhouse industry in Australia & New Zealand. In New Zealand you will be working with our distributor.

You will be responsible for promoting varieties with proven added value by liaising with all involved in variety choice within the greenhouse vegetable supply chain.

Ideally you will have a tertiary qualification in horticulture or equivalent and a background in greenhouse crop production and marketing. We prefer a candidate with established national and international networks in the greenhouse industry.

We offer an opportunity to work within an expanding company, which focuses on technical support and quality. Ideally you will be based in the Melbourne area.

Remuneration and conditions to be negotiated, including relocation expenses if applicable.

# **Application**

Including your CV before 6 February 2006 to:

Personnel Manager, Rijk Zwaan Australia Pty Ltd. PO Box 284, Daylesford, Vic, 3460. Email:smillar@rijkzwaan.com.au

**Inquiries** email or phone Sue Millar on 03 5348 9004





# A fresh approach for the Australian

The Australian vegetable industry recently released its bold blueprint for a prosperous and more united future.

The strategy, titled — *Vegetables* — *Growing the Future Together* — follows extensive consultation across industry through the Australian Government's Industry Partnerships Program.

"Significant change will need to take place," said AUSVEG Chairman Michael Badcock. "We must unify, and form stronger relationships across the entire supply chain. That's the only way we can deliver a strategic focus for the entire vegetable industry — regardless of organisational or levy boundaries".

# Currently, many claims about Australian competitiveness are based on anecdotal evidence.

The Taking Stock project which was the first step in the Industry Partnerships Program suggested 20 key areas the industry needed to consider if it was to boost its competitiveness, profitability, sustainability, self reliance and resilience.

"It was also a good starting point for industry consultation to identify key strategies and actions, and develop eight major foundation projects that the industry will kick start shortly to improve our competitiveness," Michael said.

## The 'foundation' projects involve:

- · an industry-wide strategic plan
- an international comparison study to enhance our market intelligence
- boosting the industry's information base, particularly in important areas such as

- consumer purchasing habits and packaging trends
- identifying points of difference to help improve our competitive advantage
- building more cohesive leadership and industry structures
- benchmarking to make better use of what other industries have learned
- developing individual business skills to enable producers to maximise their opportunities
- a communication strategy to raise awareness of project outcomes and encourage industry involvement.

Michael Badcock said that, to ensure the projects meet the expectations of all industry members, a Vegetable Industry Development Group will be set up. Members of this group will be announced shortly by Minister for Agriculture, Fisheries and Forestry Peter McGauran.

Peter McGauran said the projects would receive \$3 million in funding from the Australian government, as well as on-going support from other vegetable crop levies.

"I congratulate the industry for its dedication and hard work, and I'm confident it is well on the way to a stronger, more self reliant and resilient future," he said.

## **Foundation Projects**

# Development of a vegetable industry strategic plan

The Taking Stock report identified the need for improved communication and collaboration across the entire industry

supply chain. The development of a strategic plan will outline shared benefits across the supply chain, and act as a focal point for jointly strengthening the Australian vegetable industry.

Expected outcomes of the strategic plan will include identifying shared aspirations for the future of the industry, agreed priorities for future investments, identification of specific targets, milestones and responsibilities, and alignment of activities across industry organisations.

The preparation of the strategic plan will involve two phases – drafting and validation – with both phases underpinned by an industry communications/engagement plan. The new strategy will be launched at the Australian Vegetable Industry Conference 2006.

## Global comparison study

Good market knowledge of competitors' practices are fundamental to improving Australian production systems and competitiveness. The industry currently lacks good data and feedback mechanisms to make comparisons of Australian and overseas market and production situations. Currently, many claims about Australian competitiveness are based on anecdotal evidence.

This foundation project is expected to achieve a number of objectives, including wide industry awareness and understanding about successful attributes, such as strategy, structure, programs and costs of key competitor countries, application of commercially valuable global information at industry and enterprise levels, and the capacity to adapt to changing global markets.





# vegetable industry

The study will involve contracting consultants to collect information, the participation of supply chain firms in study design and overseas data collection, collection of commercially valuable information (as opposed to international trade statistics) for benchmarking, and the establishment of ongoing mechanisms for collecting data that can be used for Australian production, research and development, and marketing investments.

# Industry information and decision support framework

The industry needs access to reliable and timely industry and market data for appropriate decision-making by industry bodies, government and individual businesses.

This foundation project is aimed at developing a decision support framework to allow informed decisions for investment by industry and commercial players in the supply chain to develop growing profitable markets for Australian vegetables.

Sustainable growth of the industry is currently held back by, among other things, a lack of cohesion and communication across the supply chain.

By developing open and constructive communication between industry participants, the industry will develop a deep understanding of domestic consumer demographics and vegetable purchasing habits, gain knowledge of product packaging specifications and trends, and improve matching of supply and demand.

This will be achieved by developing terms of reference for the overall project with supply chain participants who can supply and use the information generated to make business decisions. By reviewing existing information needs and prioritising specific knowledge gaps, mechanisms will be developed for ongoing data collection and delivery.

### Market development

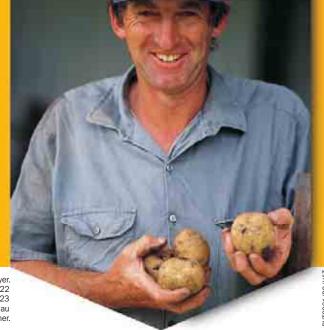
The Australian vegetable industry needs to expand its domestic and international markets by identifying points of difference continued on next page

# That's Confidor confidence.





Confidor\* is a registered trademark of Bayer.
Bayer CropScience Pty Ltd, ABN 87 000 226 022
391–393 Tooronga Road East Hawthorn, Vic 3123
Ph (03) 9248 6888 www.bayercropscience.com.au
Always read and adhere to label directions on the product container.





and capturing competitive advantages wherever possible.

An intensive investigation is expected to reveal the identification of points of difference for Australian products, with plans to maximise these points of differentiation in the domestic market, and support niche marketing opportunities overseas. The project will also look overseas to gather strategic insights on opportunities to capture unrealised value of Australian products, which will be used to target export markets, and prepare plans for market penetration in those countries.

By developing an Australian export culture, the industry aims to expand domestic and export markets for Australian vegetable products.

# Industry leadership and structures

Sustainable growth of the industry is currently held back by, among other things, a lack of cohesion and communication across the supply chain, and by inefficient structures reflecting internal fragmentation and factionalism. These factors reduce the capacity of the industry to jointly identify, create, co-invest in and capture opportunities in a way that successful industries take for granted.

Outcomes of this project are aimed at growing markets, and include creating a cohesive and purposeful industry which seeks to engage stakeholders. Inherent in this is recognition of the vegetable industry as professional and credible, and industry structures that are efficient and responsible for delivering services that meet investor needs.

Identification of priority areas for structural changes is key to successful outcomes in this project, followed by developing a process for implementing the change. The identification of these priority areas is one of the first issues to be tackled over the coming months by the AUSVEG Board, Executive and HAL.

Leadership is also integral to moving forward, and this project will ensure that the development of leadership skills becomes an ongoing industry investment priority.

The Australian vegetable industry needs to expand its domestic and international markets by identifying points of difference.

## Industry benchmarking

Industry discussions throughout the Industry Partnerships process have highlighted the lack of a continuous learning culture throughout all levels of industry. Industries that have undergone significant market shocks, such as deregulation, have shown that industry-wide benchmarking can work effectively to increase the performance of individual businesses and business alliances. One such example is the dairy industry.

Benchmarking vegetable production practices, information sharing and peer analysis, under this foundation project, should lead to improved production performance, improved strategic decision-making, improved cooperation, and greater alignment between supply and demand requirements, based on

the facilitation of relationships between all members of the supply chain.

## Business skills development

Business culture development is an important way to empower individual producers to build on and identify new opportunities. By providing key players with more skills and confidence, industry will improve its practices and negotiating power in meeting market specifications.

Outcomes of this project will place emphasis on business and entrepreneurial skills training as a means of increasing the capacity of industry participants to build on strengths and redress weakness in their businesses and to identify opportunities to meet market and consumer demands. By adopting or adapting business models, the industry can work towards strengthening relationships between the grower, the supply chain and the market, as well as capture opportunities from science and innovation.

The project will work towards this by developing a range of tools which will assist in identifying and addressing the priorities, both business and personal, and aspirations of industry participants.

## **Communications**

One of the overarching principles of each foundation project is the means to effectively communicate objectives and outcomes. Therefore, supporting the Industry Partnerships Program is a strategic plan for communicating key messages to all industry participants, and developing the most appropriate mode of delivery for outcomes.





Securing the future of the vegetable industry through the Industry Partnerships Program (IPP) has been a period of extensive consultation with all key partners of the Australian vegetable industry and supply chain.

The most common issue for concern was NOT industry efficiency, profitability or sustainability.

The research underpinning the project, conducted by Kiri-ganai Research, urged the vegetable industry to invest in its leadership, build trust across industry organisations and work together to increase markets and market demand.

The process involved a number of steps, including an initial stock take of the industry.

This was compiled in the 'Taking Stock Report' which was released in August 2005.

An early draft of the 'Taking Stock Report' was considered by a workshop of 70 industry representatives and ten government officials in early September. The most common issue for concern was NOT industry efficiency, profitability or sustainability, but the lack of ongoing, constructive communication between all sectors along the supply chain.

The 'Taking Stock Report' suggested 20 key areas the industry must consider in the areas of competitiveness, profitability, sustainability, self reliance and resilience. The report also highlighted the limited time growers, processors, retailers and others in the supply chain have to reflect on their performance as an important ongoing part of managing successful businesses.

Following the release of the 'Taking Stock Report', key strategic areas for industry action, the challenges relating to these areas and suggested industry responses and options for action were developed in the 'Setting Directions Report'. This report was workshopped at a joint industry-government meeting on 31 October 2005.

The Vegetable Industry Partnership Program culminated in a final project report in November which outlined recommendations for action by the industry and government. These recommendations have formed the basis for the development of *Vegetables – Growing a Future Together –* the overarching strategy for the industry, and the accompanying foundation projects.

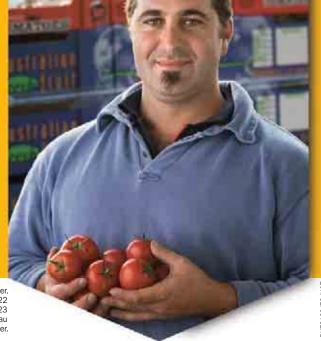
For copies of the 'Taking Stock Report' and the 'Setting Directions Report' visit www.ausveg.com.au

# That's Confidor confidence.





Confidor\* is a registered trademark of Bayer.
Bayer CropScience Pty Ltd, ABN 87 000 226 022
391–393 Tooronga Road East Hawthorn, Vic 3123
Ph (03) 9248 6888 www.bayercropscience.com.au
Always read and adhere to label directions on the product container.







# Packaging a partnership for the future

Good business is about sound customer management and establishing direct business linkages with your customer. Working together to improve the end product in consumers' shopping trolleys has benefits for both producers and retailers.

Peter Sillcock, Fresh Produce National Procurement Manager for Coles supermarkets recognises the value of working with growers to enhance the quality of produce, and has been working directly with producers to trial the use of returnable plastic crates (RPC) as an alternative to growers using their own packaging.

In an effort to get fresh produce on the shelves more quickly, Coles supplies the reusable crates to growers, who then pack the crates with their produce. The crates are distributed directly to Coles stores, and the product placed on display with a minimum of handling. Once used, the crates are hygienically prepared for re-use.

"It's nothing revolutionary, but it's a simple improvement to our existing processes, resulting in better quality products for consumers — a win-win situation," Peter said.

"Disposable packaging is becoming a real issue. Returnable plastic crates eliminate this issue allowing us to loop the freight

through a constant cycle via our networks. This results in a quicker turnaround, less handling and an improved operational efficiency.

"We're encouraging our suppliers to replace disposable cartons with reusable crates. It's simply far more efficient, and the feedback from our producers has been very positive," he said.

Returnable plastic crates allow the grower to present their produce to the end consumer how they would like it to be presented. Although the trial is not yet at the stage where the crates are being used to present produce in-store, Peter eventually sees this as the final stage of the concept.

"Growers take a lot of pride in how they pack their fruit and vegetables, and the returnable plastic crates give growers the ability to have their product presented to the end consumer. The additional benefit for growers is that their produce will reach our shelves in better condition," he said.

Peter attributes the success of this trial to the close working relationships and dialogue that Coles have established with growers such as with John Said of Fresh Select in Victoria.

"It's taken 10 years of hard work in establishing our relationship with Coles."

"Growers who are open to trying new things to improve our end product allow us to plan for the future. Our relationship with producers such as Fresh Select have enabled us to trial concepts such as RPC."

Fresh Select Director John Said believes that the returnable plastic crate trial he has undertaken with Coles has brought the two businesses closer together.

"The real benefactor is the consumer. However there are also benefits for the grower," said John. "For our business we've found benefits in the weekly billing cycle on





the crates that we've established with Coles — it's much easier to manage rather than the monthly cost associated with carton bills.

"I've also found it to be better for our product. It's is a little more work for us, but that extra work is outweighed by the benefits to the consumer.

"I like the fact that we can now influence what the consumer sees in the shop. Potentially, they will be the first to handle our product after it leaves the farm."

John believes that it's essential for growers to establish the right partnerships that work for their business.

"Relationship management is not easy. Sometimes you've got to go backwards to move forward, but it's definitely worth the extra work to find one that works," he said.

Fresh Select has been supplying Coles for the last ten years and has been able to facilitate direct feedback from consumers

into their product through their partnership with Coles.

"It's taken ten years of hard work in establishing our relationship with Coles. It has grown and emerged over that time. We now understand each other's businesses, and that understanding has resulted in good business and in growth in the market," John said.

# SOUTH PACIFIC SEEDS PTY I



New generation zucchini with intermediate resistance to ZYMV, WMV2, & PRSV.

Now commercially available.

# Kens Special Hybrid 864

Still the best, earliest maturing Jap pumpkin on the market.

Vigorous vine sets sooner with a concentrated harvest.



Large easy to grow seedless melon yields large volumes of oblong shaped fruit.

Firm crisp deep red flesh.

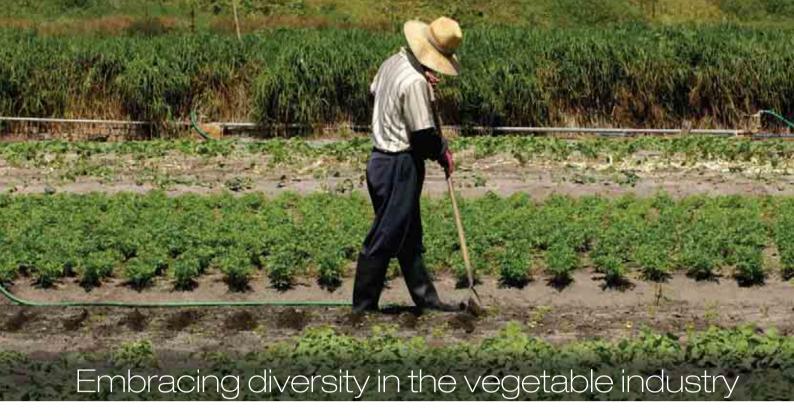
Varieties you can rely on from a team you can trust!

For further information on our wide range of vegetable seeds, please contact your nearest Branch Office.

Head Office (02) 6962 7333 · Melbourne (03) 9799 9004

Brisbane (07) 3393 3766 · Adelaide (08) 8364 3310

Perth (08) 9331 6356 · Sydney 0418 674 471



A recent research study has revealed that as many as 40 per cent of Australian vegetable growers originate from migrant backgrounds, and speak a language other than English (LOTE) at home.

The snap shot study, conducted by Sydneybased Step Communication, sought to profile LOTE growers in the industry, with a view to improving communication to these groups.

Australia's migrant history has contributed to enormous diversity across the Australian vegetable industry. After World War II, many Greek, Italian, Maltese and Macedonian migrants entered the horticulture industry, establishing themselves within strong communities in Melbourne, Shepparton and the Burdekin.

From the late 1970's, Australia's migrant intake shifted to include more Asian and Middle Eastern communities, with refugees from Vietnam, Cambodia and Lebanon.

Step Communication gathered the best available data about LOTE vegetable growers in regards to language groups and numbers, geographic locations, crops grown and suitable communication channels. The steps taken in this process included an initial workshop with all State Vegetable Industry Development Officers and almost 40 in-depth interviews with growers, grower association representatives, agronomic consultants, government, resellers, researchers and trainers. These interviews were either conducted by phone or, in the case of LOTE grower communities in both the Sydney Basin and in Virginia, South Australia, by face-to-face visits.

"The research was limited by the data available to us and in some cases, access to up-to-date databases was difficult," said Brooke Summers of Step Communication. "This was overcome through data collection from primary sources such as grower associations and resellers as well as cross checking industry databases with Farmer Association membership numbers and government databases where they exist."

"We came across doctors, biomechanics, and even a Cambodian rock star."

The research revealed that over 2000 growers, representing almost 40 per cent of vegetable growers in Australia, spoke a language other than English at home.

"The sheer number of LOTE growers was a surprise to us," Brooke said.

It was also found that LOTE growers made a significant contribution to the Australian vegetable industry in regards to diversity of crops produced, volumes sold to consumers, and monies paid through the National Vegetable Levy.

There are a number of reasons why migrants enter the horticulture industry, including low English language proficiency, friends or relatives already working in the industry, and familiarity with rural lifestyles

in their home country. However, Brooke said one of the more surprising conclusions related to the diversity of backgrounds of LOTE growers.

"The backgrounds of many of the growers we interviewed were a surprise. We expected more growers to have experience growing vegetables in their country of origin. But we came across doctors, biomechanics, and even a Cambodian rock star," she said.

With such a large proportion of growers speaking a language other than English, Brooke believes there is a strong need to integrate communications to LOTE growers into the industry's existing plans and activities, and this is the next stage for the project.

"A communication plan is currently being developed that will encompass broader industry strategies, as well as a tailored approach to meet the specific needs of these groups," she said.

## The bottom line:

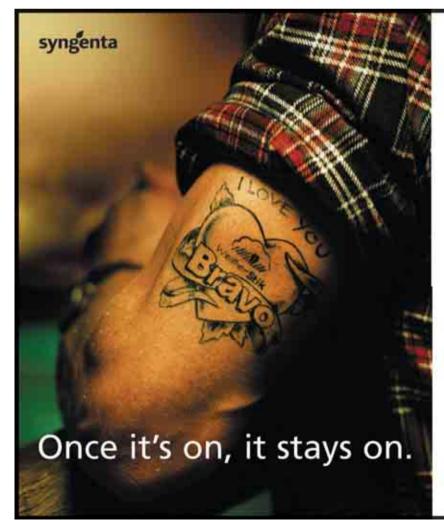
- Over 2000 growers (40 per cent) speak a language other than English (LOTE).
- Industry communications strategies need to account for the diverse needs of LOTE growers.
- LOTE growers make an important contribution to the vegetable industry.

For more information visit www.ausveg.com.au and search under 'LOTE' or 'VG03094', or contact your local Industry Development Officer.

# Major findings of the research include:

- The largest number of LOTE growers are located in the Sydney Basin, The Northern Adelaide Plains and Brisbane.
- The states and territories with the largest percentage of LOTE growers are the Nothern Territory (83%), New South Wales (81%) and South Australia (53%). Few LOTE grower groups were identified in Tasmania and the Australian Capital Territory.
- The main language groups are Vietnamese, Cantonese, Arabic and Cambodian.
- LOTE groups are generally clustered geographically, however this
  is not necessarily reflected by a socially cohesive or united group.
- Most farms are family businesses employing other family members.
- Many LOTE growers can understand and speak simple English, however most cannot read or write in English.
- There is no single factor that will influence future communication with LOTE communities given the diversity in language, culture, religion and literacy levels, however it is essential to work through established communication networks, including extension staff, resellers, community leaders and grower associations where approporiate.





Now BRAVO\* is even better with new BRAVO WEATHERSTIK\*. The advanced surfactant technology in BRAVO WEATHERSTIK maximises its ability to stick to the plant surface, even after heavy rainfall or irrigation. So you can be confident irrespective of the weather, that BRAVO WEATHERSTIK will stick better and protect longer than all other brands of chlorothalonil. For more information please visit www.syngenta.com.au or call the Syngenta Technical Product Advice line on 1800 067 108.



® Registered trademark of a Syngenta Group Company ™Trademark of a Syngenta Group Company ABN 33 002 933 717 SYN017 HF VA 05/149





# Chinese community holds firm roots in Sydney Basin

The vegetable farming community in the Sydney Basin is a tight-knit group of growers who rely on each other for support and shared knowledge.

Terry Ha, who, together with brother Gordon, aunts and uncles, has grown in the area for about 15 years, said little had changed in that time. While crops such as celery were grown in the region about 20 years ago, since he and Gordon began working in the area they have grown baby bok choy, shallots, radish, coriander and Australian and Italian parsleys.

The crops are rotated through the five acre property, with about four acres used at any one time, but Terry said growing practices had changed little in the past 15 years.

"The demand is there from the market and we meet it," Terry said.

The basin is home to a large community of Asian growers, including people from China and Vietnam.

Terry said the community worked together to get the best from its land and more than 200 growers were members of the Australian Chinese Growers' Association of New South Wales.

Terry, who is on the association's committee, said the organisation was an efficient way for governments to disseminate information among Chinese growers who did not speak or read English.

But he said while the association acted as a conduit for information, there were

still inroads to be made for it to operate efficiently as a lobby group.

"I wish they would print the labels on our chemicals in Chinese – a lot of Chinese people don't understand how much chemicals to use, so they have to ask the wholesalers," Terry said.

# "Life's changed now – once the children get bigger they go out and work for somebody else."

He said crops in the region had never been better despite the fact that very few of the industry research and development projects about disease control and reducing the need for chemical use had filtered through.

But he said a bilingual officer in the region might be able to provide help for growers and would reduce pressure on the Chinese Growers' Association, which currently translates documents for its members.

"All the information that comes from the government gets faxed to the president and we organise days out to get the information out to members.

"We write it into Chinese so the members can understand it."

Terry's brother, Gordon Ha, said the growing community had a proud tradition of shared knowledge.

"Expertise is more about how you work and learn – every place is different," Gordon said.

"Mine has sandy soil, up west has clay soil.

"You work and learn in your own fields."

Terry and his family live at Matraville,

Terry and his family live at Matraville, a south eastern suburb of Sydney, about 15km from the CBD.

The family's farm, which is rented from the NSW state government, lies under the Sydney flight path and was heritage-listed about three years ago in recognition of the large community of Chinese farmers who settled in and around Sydney during the gold rush.

"Some people in the government decided to heritage list the farm because we're in the Chinese community," Terry said.

"To us it hasn't made much difference because we rent the land from the government."

While farms in the region have traditionally passed through generations, Terry said this was less likely to happen in future.

"Life's changed now – once the children get bigger they go out and work for somebody else," he said.

# Bilingual support a success for Vietnamese growers

Early results from a communication project involving Vietnamese vegetable growers in the Sydney Basin have established it as a model for helping grower groups with a non-English speaking background in Australia.

A project involving Vietnamese vegetable growers in the Sydney Basin is using a professional bilingual officer to improve communication with the growers to help them boost the economic and environmental viability of their businesses.

Project officer, Dr Ho Dang, says many growers involved have already significantly boosted produce quality and yield and because of their success they are confident of expanding their operations.

Ho's brief was to communicate with the growers to facilitate training and assistance, to foster co-operation among growers and industry shareholders and to help with the adoption of best practices for more sustainable production.

There are 50 Vietnamese vegetable growers in the Sydney region, many of them aged in their 50s and 60s. Their crops are mainly Asian herbs (perilla, Thai coriander, hot mint, lizard tail) and vegetable fruits (hairy

melon, bitter melon, lufa, egg plant and snake bean.) The average farm is about two hectares and most are leased without a definite tenure.

Ho said that the growers are keen to learn and be responsive to modern farming techniques, and all 50 growers had been involved with the project in some way.

During the past two years Ho has helped to organise 24 training/workshop sessions for them. The courses included water use, fertiliser and soil management, pests and diseases management, integrated pest management (IPM) technique, greenhouse production and hydroponics, farm management plan, farm financial record keeping, farm machinery, occupational health and safety and computer courses.

Ho has also organised pilot groups and follow-up programs at individual farms to promote changes in farming practices.

Ho says another encouraging spin-off from the project has been that 18 of the growers have recently undertaken a horticulture training program and have qualified to receive the Horticulture Certificate III.

He said the grower project will run until September 2006 and most of the remaining time will involve assessing the results of the practices already put in place.

"The results already show that the project is a successful communication model." he said. "It is not only a most effective way of helping growers to improve their skill and knowledge now, but it is also laying the foundation for future development of the vegetable industry as a whole."

## The bottom line:

- Bilingual support is shown to facilitate training and assistance of non-English speaking growers.
- Improved communication assists future development of the vegetable industry.

For more information visit www.ausveg.com.au and search under 'Bilingual' or 'VG03085', or contact your local Industry Development Officer.

# Thinking capsicums? Think **Terranova** seeds.



# NEW Fuego

- Long, thin Cavenne style fruit in the Diablo class
- Upright bush
- Dark green to glossy red.



## **NEW Dorito**

- High yield potential
- BLS 1.2.3 resistant Bull Horn Red type
- High quality
- Good flavour.



# **NEW Denison**

- Large, firm fruit
  - Good wall thickness and blocky shape
- Dark green to intense red at maturity
- Excellent canopy cover
- Multi-disease resistant.



## NEW Bendigo

- Open field type and therefore quite rugged
- BLS 1,2,3 resistant
- Fruit are dark green turning deep golden-orange
- Fruit are thick walled, firm and have a good shelf life.



# **Broadbeach**

- Open field type and therefore quite rugged
- BLS 1,2,3 resistant
- Large, long-blocky fruits, dark green turning yellow
- Fruit are thick walled. firm and good shelf life.



# **NEW Alice**

- Large firm fruit with good wall thickness
- Blocky shape
- Dark green to intense red at maturity
- Suitable for fresh
- market or processing
- Excellent canopy cover Multi-disease resistant.



# **NEW Olga**

- Multi-disease resistant
- Large, firm fruit with good wall thickness
- Blocky shape fruit, dark green to intense red at maturity
- Excellent canopy cover
- Suitable for fresh market or processing.

Sales Orders: Phone: (02) 9725 1088 Fax: (02) 9725 1066. For production guides and cultural notes visit: www.tnseeds.com

David Campbell Mobile: 0437 890 920 Wide Bay. **Burnett Regions** 

Mobile: 0417 780 683

Graeme Judd Mobile: 0418 532 650 Greg Hall Mobile: 0417 227 873 Charlie Vella Mobile: 0419 286 370

South East QLD Michael Sippel Mobile: 0418 479 062

**Coastal SE QLD/Northern NSW** 

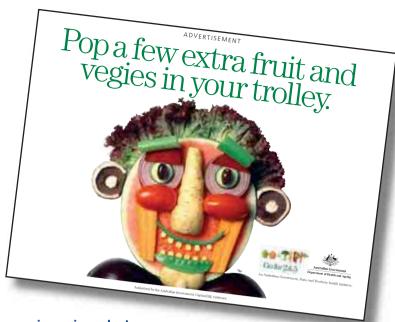
Mobile: 0407 256 521

Greg Bragg Mobile: 0419 635 548

WA/NT Graham Adams Mobile: 0417 930 233



# National fruit and veg campaign looks to bearing fruit for producers



Early reports suggest that a national campaign aimed at tackling Australia's growing health problems appears to have led to increased consumption of fresh fruit and vegetables.

In June last year the Australian government launched the *Building a Healthy, Active Australia* initiative to tackle Australia's growing problem of declining physical activity and poor eating habits of Australian children.

The ongoing program recognised that a balanced approach towards nutrition and physical activity was needed to promote healthy habits for life and put in place a number of strategies to increase the intake of healthy fresh food.

As well as offering a solution to Australia's health problems, it also offers a great opportunity to boost the domestic sales

Horticulture Australia Limited (HAL) jumped on board the campaign and developed its own health initiative project, directed toward the development and implementation of a national campaign to promote the consumption of fruit and vegetables.

The project is resourced from across industry funds and uses the Western Australian Department of Health campaign – 'Go for 2&5' as the model for use throughout Australia.

A strong level of awareness has been achieved.

'Go for 2&5' calls on consumers to have two pieces of fruit and five serves of vegetables each day to maintain a healthy lifestyle.

State and Territory health departments are already integrating the 'Go for 2&5' campaign into a range of health related activities and programs. Western Australia and Queensland will spend \$1 million each per year over the next five years in promoting the campaign in those states.

Analysis of the 'Go for 2&5' campaign in Western Australia has shown that the materials have high recognition among consumers. The evidence also suggests that consumers understand the message and are starting to take appropriate action to achieve a balanced diet. While

Australian government research on the impact of the 2005 campaign has not yet been finalised, preliminary results indicate that a strong level of awareness has been achieved. The campaign represents a great opportunity for industry to work with government to deliver a strong health message. While industry understands the linkage between fruit and vegetables and health, there is also a need for industry to show a commercial return in line with its support for the program.

HAL has instigated a research project to examine the potential impact of the Australian government campaign, examining a range of sales and supply data, with the objective of capturing the economic benefit arising from the campaign.

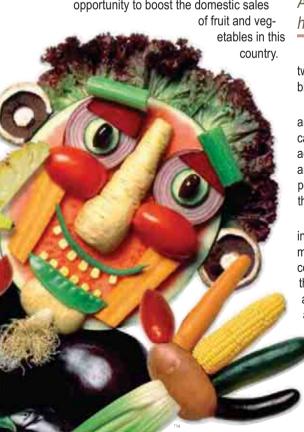
While the findings of the report have not been finalised, the early indication is that the 'Go for 2&5' campaign presents a real economic benefit to fruit and vegetable producers.

So far, the results show that in 2005 the total amount of money spent and the volume of fruit and vegetables increased.

## The bottom line:

- 'Go for 2&5' campaign was launched nationally in 2005 in response to poor eating habits and decline in physical fitness of Australian children.
- Early results indicate that consumer spending on fruit and vegetables increased throughout the duration of the campaign.

For more information visit www.ausveg.com.au and search under 'Go for 2&5' or 'HG04006', or contact your local Industry Development Officer.







# Solution found for parsley root rot

An investigation currently underway into managing root rot diseases in parsley has identified the cause as a fungus known as 'water mould'.

The study, conducted over a 12 month period and due to finish in January 2006, has attempted to identify the specific cause of root rot and find ways to combat the effects, which include leaves wilting and collapsing above ground as roots rot below ground.

Research conducted in Victoria found a lot of fungi on diseased plants, and a trial was set up to target control of each fungi, according to project leader Dr Elizabeth Minchinton from Victoria Department of Primary Industries.

"The trial identified which types of fungi were responsible for the root rot and at the same time identified two fungicides for its control. The trial showed that water mould type fungi were causing the root rot," Elizabeth said.

The successful fungicides (which targeted *Phytophthora* and *Pythium*) were able to reduce the root rot in test crops by up to 92 per cent, however these fungicides are not currently registered for parsley.

Working in collaboration with scientists in New South Wales and Queensland, Elizabeth found root rot could affect Queensland and Victorian in-ground crops by as much as 100 per cent. But all three states surveyed reported an increase of root rot in wet seasons, suggesting water mould could be causing the root rot. Therefore rainy seasons would be the best time for farmers to use fungicides.

"A lot of hydroponic parsley is grown in Queensland, which involves crops being planted in polystyrene boxes on benches, removing them from the soil where water mould fungi are found, as opposed to Victorian crops for example, which are grown in ground where root rot fungi are found and where drainage may be an issue," she said.

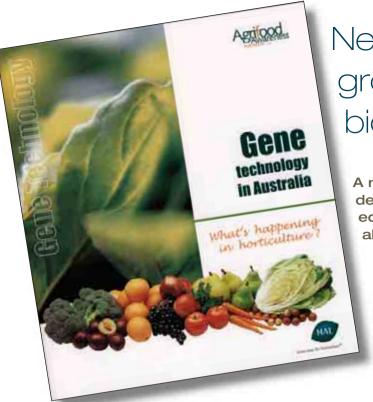
Elizabeth also discovered Queensland and New South Wales crops were suffering from nematode infections. Victorian growers did not suffer the same problem. "Nematodes were found predominantly in New South Wales and Queensland, but not in Victoria. Victorian growers use chicken manure incorporated into the ground to keep sand from blowing around and damaging plants. The chicken manure deters the nematodes so there is little problem with them in Victoria and little need for nematicides," she said.

# The bottom line:

- Root rot diseases in parsley is caused by a fungus known as 'water mould'.
- Root rot is found to be more damaging in wet weather.
- Two fungicides have been trialled, and have been submitted for registration as minor use permits.

For more information visit www.ausveg.com.au and search under 'Parsley' or 'VG04025', or contact your local Industry Development Officer.





New booklet answers grower questions on biotechnology

A new resource booklet aims to demystify gene technology and educate Australian growers about its role in horticulture.

Current research projects into gene technology (genetic engineering) have the potential to provide growers with crops that can protect themselves from pests, diseases and viruses while requiring less maintenance, according to a recently released information booklet for growers.

Titled 'Gene Technology in Australia', the booklet is the result of a three-year project undertaken by Agrifood Awareness Ltd which involved research scientists holding regional forums with growers around Australia, and gene technology workshops in Canberra to educate growers about the science, potential risks, benefits and markets from biotechnology in horticulture.

Public perceptions of genetically modified food products is a major issue, causing a number of organisations to adopt a GM-free or GM-neutral position.

Despite genetically modified (GM) crops being grown in 17 countries around the world, project leader, Ms Paula Fitzgerald of Agrifood Awareness found some areas of vegetable growers' knowledge of gene technology to be limited.

"We felt that compared with other industries such as the grain industry, dairy industry and meat industry, the horticultural industry wasn't as engaged on this issue." she said.

Results of a consumer opinion survey conducted in 2001 and 2003 which have been included in the booklet highlight public perceptions of genetically modified food products as a major issue, causing a number of organisations to adopt a GM-free or GM-neutral position.

This, coupled with the long period of time required to develop the GM crops, is believed to be discouraging industry groups from pursuing a more active involvement in developing GM products.

'I think it's probably more a reflection of agriculture as a whole," Paula said.

"Often I find growers are so busy dealing with the pressure of today that they haven't thought one year, five years, ten years down the track," she said.

"At the moment, the individual commodity sectors aren't investing themselves. A lot of them are really just saying they want to monitor developments in the market, both research and consumer opinion," she said.

Having completed the communication project and booklet, Agrifood Awareness is continuing to publish a bi-monthly newsletter titled GMOs (Guiding Meaningful Opinion) which also aims to advise growers on developments in gene technology.

"I think that it is important that growers are informed and understand about the technology," Paula said.

"I think that the project we completed was the tip of the iceberg. Some horticulture

growers have good knowledge on the subject and some growers have next to none, which I think needs to be addressed. They need to understand where the investment is and why it's there and what the outcomes might look like so they can make informed decisions."

## The bottom line:

- Grower awareness of gene technology can be limited in some areas of horticulture.
- A new booklet titled 'Gene Technology in Australia' has been created to inform growers about genetically engineered crop technology.

For more information visit www.ausveg.com.au and search under 'Gene Technology' or 'AH01028', or contact your local Industry Development Officer.

# **AUSVEG's Policy on GM**

The vegetable industry, as represented by the peak industry body AUSVEG, supports continued investment in genetic modification (GM) research and technology as it is a valuable tool.

It does not however currently support the commercial planting of GM vegetable crops.

This position recognises both the wishes of consumers to maintain a local food supply which is GM-free and the need for the Australian vegetable industry to remain competitive on the global market and to maintain GM capability, in the event that there is a need for GM crops in the future.

# **Major research** breakthroughs for vegetable brassicas



Scientists from the Victorian Department of Primary Industries have developed brassicas that are resistant to clubroot - the most devastating of soil borne diseases for vegetable brassicas — through utilising new DNA techniques.

Clubroot, caused by Plasmidiophora brassicae, occurs all over the world and is responsible for crop losses of up to 10 per cent every year.

Understanding the molecular basis of the only sustainable long-term disease control option, according to research scientist Dr Vijay Kaul.

Vijay, head scientist at Primary Industries Research Victoria, has spent the past seven years working on ways to genetically modify vegetable brassicas to control clubroot and other important diseases, as well as extend the shelf-life of produce.

A range of new DNA-based techniques were developed to facilitate the rapid introduction of new traits into vegetable brassicas. These included methods to transfer genes into a number of commercial and parental lines of cauliflower and broccoli.

As a result of this project, a population of genetically modified plants has been produced that contain a range of genes for disease control. These plants were assessed in controlled glasshouse trials plant resistance to this pathogen will provide after being exposed to clubroot spores, and several demonstrated very encouraging levels of resistance to the disease.

> Vijay said floret yellowing in harvested broccoli was a typical post-harvest problem facing the vegetable industry and her research was also designed to combat this problem.

"Genetic engineering offers an alternative tool for extending post-harvest shelf life. For instance, externally applied cytokinin can delay the flower yellowing of broccoli."

Vijay said in her research a population of transgenic [genetically modified] broccoli plants containing the cytokinin (ipt) gene had been produced.

In a series of laboratory tests, she found that control leaves showed yellowing of leaves within two to four days, and by day five control leaves had completely lost their colour. However, five transgenic lines retained a healthy green colour over a 12-day period.

Vijay said the results had been very promising, but more work was needed to fine tune the system.

## The bottom line:

- Genetic modification may provide a feasible solution to the treatment of clubroot in brassica, as well as extending postharvest shelf life.
- · While initial results are promising, more research is necessary.

For more information, visit www.ausveg.com.au and search under 'Clubroot' or 'VG01042', or contact your local Industry Development Officer.



# MUDDY BOOTS

PROGRESSIVE FOOD CHAIN SOLUTIONS

- COMPREHENSIVE, YET LOGICAL AND EASY TO USE
- Specialist recording features for fresh produce crops
- Unique pesticide auditing and decision support capabilities
- POCKET PC APPLICATIONS FOR TRUE IN-FIELD CROP MANAGEMENT
- MAKING COMPLIANCE EASIER TO MANAGE
- Integration with Produce Manager to offer the complete traceability solution 'from paddock to plate'
- SIMPLY MORE EFFICIENT







# Mosaic virus solutions look to the future

A recent research project by the Victorian Department of Primary Industries suggests that gene technology may hold the key to future control of virus diseases in carrots and celery.

diseases for celery growers has been celery mosaic virus (CeMV).

This viral disease takes its name from the mosaic pattern it forms on the leaves of infected plants. There are varying degrees of leaf distortion, and the plants are also stunted. Celery mosaic virus was first idetified in South Australia, but is now present in all Australian celery growing districts. The disease has also been reported in parsley, coriander and feral carrot, and is transmitted by aphids. It is most serious during late autumn and spring.

Another aphid-spread disease is carrot virus Y (CarVY). Its symptoms include yellowing, mottled leaves, and leaflets with a feathery appearance. Young infected carrots produce stubby, knobbly roots.

Dr Brendan Rodoni, Senior Plant Virologist at Primary Industries Research Victoria, confirms the serious problem these viruses represent. "It's a huge issue in the industry. Carrot and celery growers across Australia can lose 10-20 per cent in yield because of these viruses; but management controls are technical and costly, and chemicals often aren't a solution."

Potential solutions have been to grow more tolerant varieties, or to instigate a break in production. This is where the research project came in, to investigate the possibilities of genetic modification to create disease-resistant celery and carrot crops.

"The major aim of the project was to develop tissue culture systems and regeneration systems for carrot and celery," said

In recent years, one of the most problematic Brendan. "We wanted to be able to generate genetically-modified carrot and celery with specific traits. For carrots we targeted carrot virus Y, for celery it was celery mosaic virus.

> "Basically we were trying to create plants that are resistant to pathogens, so they wouldn't get infected with the virus. Some sort of resistance via breeding is really the best option. And the option we took was via genetic engineering."

"For carrots, it's definitely been successful, and we're in the process of confirming carrot virus Y resistance in carrots. With celery it has been tougher."

If the project was successful, it would result in transgenic carrot and celery with built-in resistance to those viruses.

The project's initial focus was on developing tissue culture systems that allow the formation of callous tissue [a lump of cells], and the regeneration of carrot and celery from it.

It was an ambitious project, according to Brendan. "The huge novelty was with celery, as no-one had reported regeneration systems in tissue culture with celery. So that would be a big outcome."

So how is it done? "We put virus genes that are resistant to those viruses into the carrot and celery," he said. "These genes trigger plant cell defence mechanisms that will degrade any invading virus particle. It primes the cell to be defensive against infection."

The project was only ever intended to develop this first stage, and trial plantings were never envisaged. "Definitely not," said Brendan, "We promised we would produce populations of transgenic plants that showed resistance in the glasshouse, and that would be the end of the project. Field trials would be a potential further project."

As the project winds up, Brendan is able to report some success, particularly in its work with carrots.

"For carrots, it's definitely been successful, and we're in the process of confirming carrot virus Y resistance in carrots. With celery it's been tougher, which is probably why it has never been done before. We've produced the celery mosaic virus resistance construct [a genetic model for incorporating the resistance gene] but haven't been able to successfully incorporate that gene into celery.

"The system still needs to be fine-tuned to give us more chance of regenerating transgenic celery. We've gone a long way but didn't quite get there in the end. We have produced a resistance construct for celery mosaic virus we think will work, but haven't been successful yet."

What's the immediate future for the results of the project? "We're liaising with the industry, seeking advice on how they want us to maintain the plants. We'd like to continue tweaking this system for celery regeneration to produce genetically modified plants, but it depends on funding."

Even with the difficulties producing the appropriate transgenic celery, Brendan is confident the results will be useful to growers in coming years.







Tom Schreurs is a celery grower based in Clyde, Victoria, and assisted the PIRVic team with their research. He agrees that celery mosaic virus is a major headache for growers.

"It's a substantial problem," said Tom. "Depending on the time of year and the influx of aphids, there can be substantial loss. It depends on how early it comes in. If it's at a later stage, you're losing on average 10-15 per cent of your crop, and the quality's not as good."

Tom is speaking from experience, having seen his crops affected by CeMV.

"We do get affected by it quite severely, especially through our winter harvest period," he said. "There's an influx of aphids in autumn, and two to three months later you've got the problem."

Although management methods are limited, Tom has some success by staggering his plantings from one site to another. "But not every grower has that capability," he points out. "And it doesn't stop it if your neighbours have got it and the aphids come across."

Would he welcome a genetic modification solution?

"There's a big problem with selling GM products," said Tom, but he takes the long view on the issue. "It might well be something that's worthwhile down the track. People are wary of genetically modified products now, but in the future that may change. Having the knowledge is a great asset."

## The bottom line:

- Celery mosaic virus and carrot virus Y contribute to crop losses of up to 20 per cent across Australia.
- Gene technology research identified virus genes, which when transplanted into carrots and celery (via genetic engineering) can provide resistance to these problem viruses.
- Future application of this technology has the potential to eliminate crop losses due to these viruses.

For more information, visit www.ausveg.com.au and search for 'Celery' or 'VG01043' or contact your local Industry Development Officer.





- Increases SOIL pH
- Increases CALCIUM LEVELS
- **Easy APPLICATION**

TRUSTED RESULTS FOR ALL QUALITY
FRUIT & VEGETABLES

Get the EDGE!

AVAILABLE AT YOUR
LOCAL RURAL OUTLET
OR
PHONE: 1800 003 244

EMAIL: sales@ultimatefertilisers.com.au

WEBSITE: www.ultimatefertilisers.com.au





The secret to creating a thriving, successful business is relatively simple, according to Wendy Erhart, co-owner of Withcott Seedlings in Queensland.

"It's up to bosses to create a happy, productive workplace," says Wendy Erhart, co-owner of Withcott Seedlings.



Wendy had the ear of Senator Barnaby Joyce at a recent dinner during the height of the Australian government's industrial relations reform campaign. Her company's ability to made workplace agreements a success so impressed the senator, that he began making notes on his napkin.

"We're nine years down the track (with enterprise bargaining agreements)," Wendy said.

"The big change since we have had federal EBAs is the number of new cars in the car park because staff feel secure within the employment agreements."

Another reason staff feel secure is the company's commitment to training.

In October, former Emerald Agricultural College head Barbara Bishop came to work for the Erharts' group of nine companies, further enhancing the business' commitment to training and continuing a long-standing relationship with the company.

One of the key areas on which she will focus is communication training and future planning, a subject close to Wendy's heart.

In January 2006, Sandra Hopps will take up the post of the group's first chief operations officer. Her position will focus on improvement to existing management processes and future planning.

"If owners would take the time to sit down with key partners and say what it is they want to do, it is amazing how productive you can become," Wendy said.

"If you have key people around you and you're all pulling in the one direction together, and you have respect for others' differences – that's a lot of the work Barbara did for us four years ago."

Wendy is preparing a submission for the senate inquiry into rural education and says that with a trend towards fewer, but larger supply chain partners, the financial risk to all in the supply chain is elevated.

"The training we are undertaking at Withcott Seedlings has a two-fold aim. Firstly, to better skill the people who manage our group of companies to take the business into the future and secondly, demonstrate to the industry simple and effective training systems that they can implement," she said.

With a background in general and psychiatric nursing, Wendy came to the seedling business through her father, who had a nursery at Stanthorpe.

"We were about 100 miles from Stanthorpe and he was bringing seedlings down and putting them in our backyard."

Then, in 1983, two farmers from the region asked Wendy and her husband, Graham, to grow seedlings for them. From those two customers the business now has 6500 orders in progress at any one time. The Erharts' Smart Salads company has grown by 2563 per cent since 2001 – in the face of severe drought.

The business as a whole has doubled in the past four years and nine companies, including Smart Salads, work from Withcott's base in the town of the same name near Gatton in Queensland's south east.

Withcott Seedlings is the largest fruit and vegetable seedling nursery in the Southern hemisphere. The company produces 340 million fruit and vegetable seedlings each year for crops such as seedless watermelon, lettuce, broccolini and tomatoes.

As well as a clear commitment to training, the company is marked by its ability to think outside the square.

Finding in May last year that Withcott Seedlings was feeling the pinch of a national skills shortage, Wendy sought an unusual solution.

"Our staff are our best PR to get more staff, but we had started to have trouble getting good middle-management people because no one knew we existed – we had had no need to advertise our products.





"We then thought `right, we're going to take a risk and nominate for the Premier's Innovation Awards'," Wendy said.

Within four days, Wendy had written a submission, which a friend cautioned against turning in because it was rushed.

Withcott Seedlings is the largest fruit and vegetable seedling nursery in the Southern hemisphere.

But, desperate to fill the need for middle managers, Wendy posted the submission, going on to win the Premier of Queensland Smart Business Award for Agribusiness 2004, which brought with it a prize that included a half-page advertisement in The *Australian* newspaper.

"When we had our advertisement in The *Australian* we stuck our job ad in there too."

This year, Wendy earned individual recognition when she was named the winner of the Veuve Clicquot Award – previous winners include Body Shop founder Anita Roddick.

A firm advocate of in-sourcing rather than outsourcing, Wendy said the company produced its own potting mix and had for more than a decade recycled its water through reverse osmosis.

"Due to this business model, risks of drought, skill shortage and the downward pressure on prices have been turned into business opportunities," Wendy said.

Withcott Seedlings has 13 full-time tradesmen on staff, which gives the company flexibility and offers staff job satisfaction.

"Something that my business manager, Peter Howard, is doing is multi-tasking people and people love that they're not doing the same repetitive things.

"A lot of the tradespeople we have here have come here because they want the variety of jobs – they want to hop in a truck for a while, not just be a welder all day."





Australian Agents - Multifert Agencies Phone (03) 9742 5888 Fax (03) 9742 2122 Email: matt@multifert.com.au www.multifert.com.au www.multifert.com.au



# South Australian food basket area hit hard by floods



When the Gawler River burst its banks in November, about 1000 hectares of prime agricultural land was inundated with floodwaters, causing millions of dollars damage. Water rushed through the area at fence height, ripping crops from the ground.

The Adelaide Plains Horticulture Region contributes \$709m to South Australia's economy, with a farm gate value of \$89m. The floods were the worst in the region's history and could not have come at a worse time, with most crops ready or in the process of harvest.

The horticulture industry in Virginia supports the State government when things are going well, providing millions to the State. Now this industry needs to be helped to get back on its feet.

"Much of this was literally uprooted and washed away," Mike Redmond, General Manager of the Virginia Horticulture Centre said.

Mike said losses were expected to climb into the high millions in lost crops, infrastructure and social costs. And this figure was predicted to rise as producers and the community assess the damage.

"We fear that growers badly affected may simply leave the industry," he said.

"Anger is growing within the community as the real losses come to light. Over many years there have been calls for additional culverts under both the railway line and the Virginia Bypass to help avoid situations like this.





The horticulture sector in and around Virginia and surrounding areas on the Adelaide Plains is battling to recover from the devastation brought on by floods in early November 2005.

"Additionally, the fact that one Council has stalled the Flood Mitigation Program planned for the Gawler River is unforgivable."

The South Australian government provided immediate re-establishment grants of \$10,000 for growers affected by the floods on the Adelaide Plains.

"The flow-on effects of this flood on family businesses, the regional economy and consumers are very serious," Premier Mike Rann said at the time.

But the support has been far too little for an area that is one of South Australia's food baskets, according to local potato grower Rocco Musolino.

Rocco said the State government's support wouldn't even begin to cover bills and the government needed to do more to assist farmers in replacing the crops that had been lost.

"\$10,000 is just like a bandaid and doesn't really assist is any shape or form," he said.

Rocco said that the horticulture industry in Virginia supports the State government when things are going well, providing millions to the State. Now this industry needs to be helped to get back on its feet.

"It is a bit early to say people will walk off the land ... but it is going to be tough for them."

"South Australia is at risk of losing an industry and this will have a bigger effect than just on the man on the land. Lose this industry and everyone in the State will pay a price."

Rocco said the floods came just before "pay day", with his potatoes ripe and ready to be harvested.

"The floods ripped them from the ground and washed them into other paddocks," he said. "They either rotted away or went green after having the soil taken away. "This has set me and other farmers back more than a year. All that work that went into growing the crops and then gone.

"It is a bit early to say people will walk off the land ... but it is going to be tough for them."

Rocco said the flooding was worsened by the lack of action regarding the winding Gawler River, clogged with the debris of dead trees and silt.

He said in the months since the flood the problems with the river had not been addressed.

"This area is one of the State's major assets and yet little is done to protect it," he said.

"If the river was straightened and cleared it could carry double the water capacity," he said.

"With all the technological expertise we have you don't need to just walk away from a problem. It is not as though we can find another fertile area of land such as this."



# Naturally we'll expect your best.

Purioction Fresh is one of Australia's best-known marketers of freshtruit and vegetables and is currently looking to distribute and market quality certified organic produces.

Perfection Fresh is a national wholesaler supplying major supermarkets, independent retailers and export markets with specialty and commodify products.



For more information about becoming a **Perfection Fresh organic grower** visit our **website** and have a look at our huge range of specialty and general produce, then follow the links and download an **'Expression of Interest'** form and fax it back to us. Any further enquiries, please call our head office 02 9763 1877.

It's your chance to grow big and strong...





# Asian vegetables – getting the name right

Asian vegetables are quick to grow, very healthy and taste great but they may have a problem - an image problem.

Asian vegetables are called different names in different states, the names can be spelled in all sorts of ways and even vary between adjacent retailers. This naturally causes confusion among growers, whole-salers, retailers and consumers.

For example, a retailer in Melbourne who orders a pallet of Chinese cabbage from a supplier in Queensland could end up with something quite different to what they were expecting.

And when consumers don't know if pak choy is the same as buk choy, or even if what they really want is choy sum, they are unwilling to try new products, even with a recipe in hand.

These issues have increased lately with consumer concerns over country of origin labelling – "if it is Chinese broccoli, does that mean it comes from China?"

However, these problems will be a thing of the past with agreement on a new national names system for Asian vegetables. This system is a world first that will help everyone involved in the Asian vegetable industry, from grower to consumer.

The project, which has been put together by the NSW Department of Primary Industries (DPI), has developed a national system of names to be used right across Australia. This will mean that wholesalers, retailers, chefs and consumers will be able to speak the same language.

According to program manager, DPI's Dr Jenny Ekman, Asian vegetables include produce originating from many different countries right across Asia including China,

Japan, Malaysia, India, Sri Lanka, Vietnam and Thailand.

"Each country has its own name for these products, or, to confuse things even further, they may pronounce the same name slightly differently according to the region. When this is 'translated' into English, we end up with a real pot-pourri of spellings" she said.

And when consumers don't know if pak choy is the same as buk choy, or even if what they really want is choy sum, they are unwilling to try new products, even with a recipe in hand.

She said NSW DPI had worked very closely with representatives from major retailers and wholesalers, Sydney Markets and the Australian vegetable industry to develop a standardised national system for Asian vegetable names.

"Agreement has now been reached on 14 important product lines and use of these names is being phased in nationally," Jenny said.

"This world-first agreement addresses an issue common to most, if not all, non-Asian countries where Asian vegetables are grown and consumed. We believe this will help everyone in the Asian vegetable industry, from farm to fork."

The NSW Minister for Primary Industries, Mr Ian MacDonald officially launched the names system recently in Cabramatta. Those attending the launch visited an Asian vegetable farm, met some farmers, had a guided tour of Cabramatta by Asian food specialist, author and celebrity chef Carol Selva-Rajah and enjoyed lunch in a local Vietnamese restaurant. The lunch featured vegetables seen earlier in the day.

Jenny said the response to the system had been very positive to date.

"Asian vegetables suit the modern lifestyle, being quick to cook, healthy and flavoursome," she said. "We believe that this project will ensure that many more people learn about the new tastes and textures of these vegetables.

"The project has generated a great deal of media interest, with articles on the names to be published in magazines such as the Australian Women's Weekly, New Idea and Australian Good Taste, while the vegetables also featured on an episode of "Fresh" on Channel 9.

"This exposure will help increase adoption of the names around Australia."

Jenny said the next step in the program was to produce some resources for retailers.

"We have found that many retail store managers are not familiar with these products or how they can be used by their customers," she said.

"We will produce posters with the vegetable names and other information and test their suitability to retailers."

The remainder of the project will trial ways of encouraging consumers to try these products. These may include providing recipes, running cooking demonstrations, or simply providing point of sale materials and then looking at the effect on sales.



# You say pak choy, and I say...

Buk choy, pak choy, baby bok choy, and Shanghai choy all sound very exotic and with different names in different parts of Australia — or even adjacent market sellers — can be quite confusing to consumers.



Source: Jenny Eckman, NSW DPI.

- A. Grower Minnie Cai at the launch of the Asian vegetable naming system.
- B. HAL Program manager Gerard McEvilly
- C. NSW Minister for Primary Industries, Ian MacDonald, with Asian food specialist and author Charmaine Solomon.
- D. Harriet Harris of Harris Farm Markets long time supporters of the Asian vegetable industry.

## The bottom line:

- Current naming conventions for Asian vegetables are inconsistent, and can be confusing for growers and consumers.
- A new naming system has been developed to provide consistent naming of Asian vegetables across Australia.

For more information visit www.ausveg.com.au and search under 'Asian Vegetables' or 'VG04031', or contact your local Industry Development Officer.

It is the most popular of all Asian vegetables with most consumers aware of the dark green leaves and pale green stems of this tasty vegetable.

This was the vegetable that proved the most difficult to decide on a name due to the fact that it is the best selling Asian vegetable line by a long margin, accounting roughly 50-75 per cent of all Asian vegetables sold nationally.

The many different regional variations added the difficulty in selecting a name. It is known as pak choy in Western Australia, buk choy in South Australia, Shanghai buk choy in Victoria, baby buk choy in NSW, and Shanghai pak choy in Queensland.

DPI NSW surveyed the industry to find out which names they preferred and these were the results:

buk/bok choy

baby choy 29%

Shanghai choy 24%

pak choy 29%

Buk/bok choy was not suitable because there is another vegetable which is called this. Also, buk means "white" in Cantonese and the stems of this product are not white but green.

Baby buk choy was also not suitable because there is a small version of buk choy, with white stem, which researchers thought should be called "baby".

It was decided to avoid place/country names because of the country of origin issue — so, to be consistent, Shanghai was not suitable

That left pak choy. Also, pak choy is commonly used in Europe and it was felt this name sufficiently differentiated the product from buk choy — although the two vegetables are the same species, their appearance, taste, and texture are quite different.





A new testing device is set to provide growers with an easy-to-use mechanism for detecting clubroot in brassicas.

Scientists of Victoria's Department of Primary Industries (DPI) are working with leading international colleagues to develop the world's first on-farm diagnostic kit for the destructive brassica disease clubroot.

Clubroot is credited with affecting around 10 per cent of the world's cabbage and other brassica crops.

The new testing device will combine the department's innovative DNA-based forensic test for clubroot with UK technology in a pregnancy-style testing kit that can be used by growers out in the field.

plant pathologists - have attracted international attention and UK research and manufacturing partners after 11 years of research. To produce the on-farm diagnostic kits, they have teamed with Dr Roy Kennedy and Dr Alison Wakeham from Warwick HRI (formerly Horticultural Research International), and are supported by the UK's Horticulture Development Council and UK growers.

management s plus the labora which helps ide contamination.

"Before DNA root was to gro to ten weeks at too long to be upone to make decision."

The Victorian DPI has been conducting clubroot research nationally since 1994.

Their research has given growers around the country a range of hygiene and

management strategies for clubroot, plus the laboratory-based diagnostic test which helps identify sources of clubroot contamination.

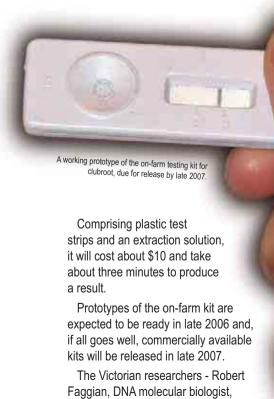
"Before DNA, the only way to detect clubroot was to grow susceptible plants for eight to ten weeks and look for symptoms. That is too long to be useful for growers who need to make decisions based on the diagnostic result. Now we can test the soil slurry and have results in 24 hours, and it is getting faster," Robert said.

"Our original DNA test for clubroot was the world's first rapid and accurate diagnostic test for clubroot and is still the most sensitive and accurate means of detecting the disease. It allows us to test soil and water in minute quantities, which helps trace the source of clubroot outbreaks.

manding and can be done only in a laboratory by trained staff, and, at \$250 per sample, it's quite expensive.

"However it is technically de-

"That's why we've been pursuing the concept of an on-farm kit. It will allow growers to do the testing themselves. The two tests are complementary. After growers have used the on-farm kit to get an idea of the clubroot status of their paddocks, from



and Ian Porter and Caroline Donald.



experience they can determine if they need to send samples in to a lab for the DNA test.

"The development of an on-farm kit for clubroot would most likely not be possible without the Australian-developed DNA test. That makes the collaboration so significant. Collaborating with the UK has proved beneficial to both partners," Robert said.

The concept for the on-farm kit is based on antibodies and was developed in the UK, but has not yet been applied to clubroot in the UK. In contrast, the DNA test was developed by the Australians specifically for clubroot.

The kit was flagged as 'in development' on a just-concluded national roadshow of clubroot management.

"We're thrilled to have the chance to work with Warwick HRI to develop these on-farm kits, and for the UK support."

Laboratory testing is carried out by Victorian DPI on a fee-for-service basis. In the UK, the test is being used as a research tool only, as part of the process of fine-tuning the on-farm kit and is not yet being offered commercially.

## The bottom line:

- A new on-farm, pregnancy-style test will allow quick, cost effective testing for clubroot in brassicas.
- The test, which allows growers to check the clubroot status of their paddocks, is expected to be commercially available by late 2007.

For more information visit www.ausveg.com.au and search under 'Clubroot' or 'VG04059', or contact your local Industry Development Officer.

# Clubroot: the facts

All the principal brassica crops — cabbage, cauliflower, Chinese cabbage, broccoli, brussel sprouts, turnip and radish — are prone to clubroot (*Plasmodiophora brassicae*).

It is a devastating and persistent disease caused by a soil-borne protozoan (single-celled organism) which is particularly severe in older vegetable growing areas.

Infection occurs on roots at any stage of growth. Symptoms are not obvious until the final stages, when knotted swellings on the roots cause plants to be stunted and wilt, particularly in hot-dry weather, with characteristic galls and a single-clubbed taproot.

The pathogen is able to survive in soil for up to 20 years even without a susceptible host. The spores will germinate in moist conditions when a host is present and can multiply very rapidly. When the roots of infected plants decay, they release millions of spores into the soil, ready for another cycle.

Anything that carries contaminated soil can spread clubroot: farm machinery, boots, animals, the dung of animals that have eaten diseased roots, wind-borne dust in dry weather or compost containing remains of a diseased crop.

Crop losses are most severe in heavily-infested warm-moist soils between October and April. Infection will develop in soil temperatures of 20 to 25 degrees Celsius, but can also occur as low as 12 degrees. Acidic soil of a pH less than seven also favours clubroot.

Growers are traditionally advised on a range of growing practices to minimise clubroot risk, and to control by solarisation and a raft of strong chemicals.

Good practice includes disease-free, cell-grown seedlings, weed control, raising the beds, careful water use and good drainage; rotating with several non-cruciferous crops; isolating infected fields; and cropping brassica in infested sites no more than once every two years.

Adding lime is also advised, and so are calcium, boron and magnesium and high-analysis fertilisers. Solarising in January and February — is a safe non-chemical control method, more effective when combined with other control measures.

Researchers have identified 12 common brassica weeds and 10 non-brassica plants — including rape, kale, swede and mustard — which can `host' clubroot, often without showing the symptoms, and spread it to vegetable crops. They are listed in the AG0531 Agricultural Note (ISSN 1329-8062) on www.dpi.vic. gov.au/. Telephone DPI Knoxfield, Melbourne on (03) 9210 9222.



# Natural pest control shows promise for brassica growers

A pretty little ladybrid may be the next important tool in managing pest infestations in brassica crops.

The white collared ladybird, also known as the *Hippodamia variegata*, is shaping up to be an important tool for growers dealing with aphid and other pest infestations on brassica crops, according to a study currently underway.

In addition to reducing growers' reliance on chemicals, the research is likely to have potential benefit for other crops which suffer from aphid attack, such as cucurbit, legume and tomatoes.

The project, being run by Brendan Nolan, an entomologist with the Department of Primary Industries and Fisheries in Queensland (QDPI&F), is investigating whether the white collared ladybird can be used as a biocontrol tool in integrated pest management (IPM) systems by Australian brassica growers to feed on pests such as aphids, whitefly, thrips and caterpillar insects.

"Developing knowledge about ladybirds and other predatory insects which are able to feed on a variety of insect pests is important because of increasingly limited opportunities to manage many of them with insecticides due to resistance or product registration," Brendan said.

Brendan's project is attempting to determine which pests the white collared ladybird can feed on, what effects the pests will have on the white collared ladybird, if there are periods when populations drop off, and if there are ways to increase ladybird numbers during those periods, such as introducing insectary bred (commercially grown) white collared ladybird into a crop.

There may be opportunities to augment insectary bred ladybirds early into the field, therefore stopping the aphids from building up into too high a level early in the season.

The white collared ladybird, originally found in Western Europe, was discovered in Queensland in 2000 and has since been found along the eastern seaboard to Melbourne, Tasmania, towards South Australia and near Perth.

Although the project is not due to finish until March 2008, initial results have found the white collared ladybird is an effective predator on aphids, with an adult ladybird able to eat up to 250 aphids a day while being able to survive in a variety of climates, ranging from temperatures up around 40 degrees and very cold conditions down around minus 15 degrees.

An aphid's life span can be rapid, often taking 10-12 days to complete a generation, compared to the white collared ladybird's lifespan of 70-80 days. The short lifecycle of aphids means they can colonise crops quite quickly, effectively doubling their population each generation.

An option currently being examined is the introduction of insectary bred white collared ladybirds into a crop before the aphids are able to build to high levels.

One of the main concerns for Brendan is the pests must prove to be a suitable food source for the white collared ladybirds, as they must gain suitable nutrients from the pests they're eating to enable their





young to grow and the adult ladybirds to lay viable eggs.

"An important question to be tackled in the next twelve months is 'what is the stocking rate of ladybirds required to control an aphid population'?" he said.

"Ladybirds are very ferocious in their eating. They can destroy a population of aphids very quickly, but if too few white collared ladybirds are introduced to an aphid affected crop, they may not be able to effectively reduce the aphid population," he said.

In order to better assess the impact the ladybird could have on brassica pests, Brendan has been gathering information on the seasonal movements and population counts of both the white collared ladybird and specific pests.

Brendan identified a lot of aphid activity occurring in Queensland from August through to October (at the tail end of brassica season) as well as some activity in February and March, but very little activity during the in the middle of winter due to the cooler temperatures limiting general insect activity.

"When food disappears from the landscape, so does the ladybird. When we're coming into spring, the pests build up, but there is a lag on the natural population of predators such as the white collared ladybird," he said.

"There may be opportunities to augment insectary bred ladybirds early into the field, therefore stopping the aphids from building up into too high a level early in the season," Brendan said.

Brendan has conducted several field days and feedback from Queensland growers has been pretty good as most are quite keen to develop a workable solution.

"Insect pests are a major challenge for Brassica crop growers. Biological control agents are an attractive option for vegetable growers because of the high cost of pesticides, environmental concerns about their use and insect resistance," Brendan said.

#### The bottom line:

- Aphids represent a threat to brassica crops.
- White collared laydbirds (Hippodamia variegata) are found to be natural predators of aphids, as well as other pests such as whitefly, thrips and caterpillar insects.

For more information visit www.ausveg.com.au and search under 'Integrated Pest Management' or 'VG04017', or contact your local Industry Development Officer.









# Keeping it fresh

The Produce Marketing Association's (PMA) Fresh Summit International Convention and Exposition is the world's largest fresh fruit and vegetable event. Held annually in the United States, each event typically attracts over 17.000 people and 800 exhibitors from 70 countries worldwide.



The take-home message from her visit at the Fresh Summit is simple – value-adding is king.

In November, a group of Australian growers attended the Fresh Summit, the world's largest fresh fruit and vegetable expo, at the Georgia World Congress Centre in Atlanta. The tour, organised by Maxine Grieve of Virginia Horticulture Centre, was an opportunity for participants to witness the scope of trends and activities on the global fresh food platform.

In his address at the Fresh Summit, Bryan Silbermann, President of the Produce Marketing Association, described the fresh produce food service industry in America. Following 13 years of industry growth, fresh cuts are the fastest growing sector of the American fresh produce market, with projected sales in 2005 estimated at \$476 billion. Obesity is also one of the biggest health issues in America today, and many opportunities exist to position fruit and vegetables as a healthy solution to this growing problem.

Lisa Crooks of Riverview Herbs in Queensland attended the summit, and identified a strong emphasis on consumer demand in the American landscape.

"Consumers are telling us exactly what they want," Lisa said. "Understanding emerging consumer trends can enhance supply chain collaboration and communication, allowing producers to profitably position their products and meet ever-changing consumer demands."

Packaging and labelling was a topic of much discussion, with American trends indicating a move towards local produce, and better labelling to reflect these changing trends. Innovation was also identified as a means of surviving the competitive nature of the industry on a global scale, and innovative packaging was highlighted as a good way for producers and retailers to attract customers to their produce.

With 29 different presentations and workshops throughout the five day event, delegates were able to pursue a range of topics, including workshops on global trade, technology, professional development, supply chain, food safety and marketing trends, as well as site tours and market visits. In addition, participants were able to take advantage of a number of networking opportunities.

Lisa believes that the take-home message from her visit at the Fresh Summit is simple value-adding is king.

"As growers we are encouraged to seek new ideas, and then ask ourselves 'How can I do that better?" Lisa said.

"Value-adding is colossal in America."





# Rutherglen Bug (Nysius vinitor)

Nysius vinitor, commonly known as the Rutherglen bug occurs throughout most of Australia, and in many agricultural areas populations can grow to plague proportions causing damage to fruit and vegetable crops.

The Rutherglen bug, *Nysius vinitor*, is a seasonal pest, which can generally be tolerated at low numbers. However over recent months it has increased to problem proportions across southern areas, especially Victoria. This is not surprising, given the warm, dry conditions experienced since October, allowing the pest to breed to plague magnitude. While recently localised to Victoria, the Rutherglen bug is known to exist, and potentially be a problem, in most states of Australia in some years.

Better known for attacking sorghum and canola crops, the Rutherglen bug also feeds on, and can cause extensive damage to, cultivated crops such as stone fruits, grapevines, potatoes and many other vegetables, including (though not limited to) brassicas, tomato, cucurbits, asparagus, lettuce, celery, carrots and beans. They can also be a seasonal pest in greenhouse crops.

As sap-suckers, the bugs act by feeding on seeds, and sucking sap from stems and leaves. Damage to susceptible plants is similar to that caused by aphids. Severely attacked plants, particularly young plants, wilt and may die.

The adult insect grows to approximately five millimetres long, is narrow-bodied and grey-brown in colour with prominent black eyes and silvery wings. Adults generally invade crops through flight by migrating from nearby weeds, and feeding on crops.

Alternatively, crawling swarms of immature bugs, known as nymphs may attack. These immature bugs are reddish brown and pear-shaped.

Reduce the need to spray crops by encouraging the southern free tailed bat, a natural predator of the Rutherglen bug.

Generally living and breeding in nearby weeds, such as Patterson's curse, eggs are deposited on the soil, on grasses and on the flower heads of weeds. These eggs hatch into nymphs which grow through to maturity. The length of the life cycle from egg to adult is about four weeks. Breeding commences in early spring. Large numbers are normally present in November and December.

Management is best achieved by removing host weeds from areas surrounding the crop. Spraying with pesticides may also help to control the bug, however adult bugs are quite mobile,flying off and returning to reinfest an area after spraying. Immature bugs may be prevented from swarming into a crop by a furrow with the steep side nearest the crop.

A recent study has also revealed that farmers may be able to reduce the need to spray their crops by encouraging the southern free tailed bat, a natural predator of the Rutherglen bug, to roost in old hollow trees on their properties.





# Producing a crop of abundance for the future

Farmers are curators of the land who have a responsibility to ensure the future productivity of the land and to be able to pass it on to future generations in a better state, according to Chair of the Enviroveg steering committee Jeff McSpedden.

Jeff, who is also a Board member of AUS-VEG, said that Enviroveg gives farmers the opportunity of proving they care for the land.

"Enviroveg provides growers with a visible way of demonstrating a responsible attitude towards the environment," he said. "The Enviroveg program gives growers a way of measuring environmental improvements on-farm each year and recognition for their efforts."

Enviroveg is a simple set of tools for growers to assist them to achieve, measure and demonstrate good environmental practices on farm. The program is owned and developed by growers and outlines the principles and practices required for maintaining or improving environmental management on the farm.

The program involves farmers conducting a self-assessment so they can get an indication of how well they are doing at safe-guarding their environment. This is followed by an audited assessment.

"Enviroveg is about minimising the footprint on our country. For every action you take there will be an impact, so we want to look at making the smallest impact possible," Jeff said.

For the past 35 years Jeff has been a successful vegetable grower on his family's property south of Bathurst in NSW. He runs a 500 hectare mixed farm, specialising in sweet corn, cabbage, broccoli and lettuce, as well as a grazing and cropping enterprise.

The role of the farmer in protecting Australia's land is very important to Jeff, who has spent his life living on the land. His property has been in his family's hands since 1841. He is clearly keen to protect the reputation of Australia farmers, and Enviroveg is a way that farmers can enhance this reputation.

"Enviroveg came about in response to a public perception that farming may be having a major impact on the environment, with fertiliser and pesticide residues making their way into water ways," Jeff said.

"This (farming having a major impact on the land) is simply is not the case, but there are always ways to have less of an impact."

Jeff said Enviroveg is about introducing a holistic attitude to farming and is just as applicable to organics, permaculture or conventional methods of farming.

Enviroveg can provide advice to farmers right across Australia of the best times to irrigate, fertilise and spray, test soils and how to minimise waste on the farm.

Jeff has always had a commitment to protecting farming land. He heads a local Landcare Group, is a committee member of the NSW Farmers Horticulture Section, sits on the HAL National Water Steering Committee and sits on the HAL Industry Leadership Group, developing the Horticulture for Tomorrow guidelines.

"I want to be able to hand over the land to my kids in a better state than I received it," he said.

For more information, or to join the Enviroveg program, visit www.ausveg.com.au, or call Helena Whitman on 0409 535 051.

# Improving soil the organic way

Composting may provide an organic alternative to chemical fertilisers, but quality is definitely a major consideration when selecting appropriate products.

Australian soils often have a low natural fertility, low levels of organic matter, and are sensitive to intensive agricultural practices. As well as lowered soil productivity, these soils also require increased use of fertilisers, pesticides and water, which comes at a cost to both the grower and the surrounding environment.

One way to rejuvenate soil and improve productivity is to increase the level of organic matter present in the soil. This approach, combined with other soil improvement practices, can contribute to soil quality and crop performance by improving soil structure, improving nutrient management, increasing soil moisture, supporting beneficial soil organisms, and reducing soil erosion and compaction.

Compost is a valuable material as it contains a range of nutrients that can contribute to crop growth. With regular use, it can increase soil carbon levels and biological activity. Additions of compost may make heavy soils more open or porous, improving workability, aeration, drainage and moisture availability, while added to lighter soils may improve water-holding capacity.

Typically the process of producing compost involves shredding or pre-processing a range of products, including animal manures, grass and tree clippings, food, wood, shellfish and fish byproducts, wool, hair and biosolids, and then mixing them according to a balanced formula which ensures optimal conditions for biodegradation. Naturally occurring microorganisms begin the process by using the available nutrients, water and oxygen to grow and multiply. As they multiply, the microorganisms generate heat, which in turn breaks down the organic matter.

One of the most important things to remember when planning to use compost on soils and crops is to select a quality compost which adheres to Australian Standard (AS 4454) for quality assurance. It must also be selected for its intended purpose, as not all composts are identical.

#### Key features to look for in quality composts are:

- Stability: Stability refers to the level of biological activity in a moist, aerated compost pile. An unstable compost is likely to compete with crops for nitrogen, and can create oxygen deficiencies in the soil. Stable composts generally take 6-12 weeks to create.
- Maturity: Composts suitable for vegetable crops are generally matured for a further four weeks. They should also have a carbon-to-nitrogen ratio under 20:1, and toxicity should be greater than 60 per cent. If unstable of immature composts are to be used for crops, they should be applied to the soil at least four weeks prior to planting or sowing, and additional fertilisers may need to be added to prevent nitrogen deficiency.

· Finely screened: This process is used to remove chunky particles, rocks and plastic.

Neutral or pleasant

To get the most out of compost, it is best to use it regularly as part of an integrated crop and soil management program.

#### Not all composts are identical.

Compost users should also be careful to select the most appropriate composts for the desired application to ensure the most effective results.

For more information about compost, or to join the Enviroveg program, visit www.ausveg.com.au or call Helena Whitman on 0409 535 051.





# Economic Outlook

AUSVEG economist Ian James summarises the industry's current economic trends.

# **Household debt –**Is it a cause for concern?

There has been much media reporting on the growth in the preparedness of Australian households to undertake high levels of debt. Is household debt high? If so is it a cause for concern? AUSVEG Economist Ian James explores the economic literature to provide answers to these questions.

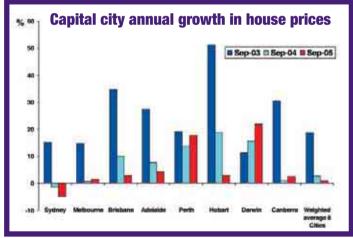
Historically, households have been contributors to the level of savings in the Australian economy. But in recent years Australians have taken on a passion for debt. Household savings have been negative for the last three years. Debt as a percentage

contributing factor to the growth of debt. Indeed, investment in housing has been strong, fuelling large increases in house prices.

A number of explanations can account for this investment and subsequent debt

explosion.

The economy has performed strongly since the recession of the early 1990's. Taming of inflation in the 1990's has meant low interest rates, and expectations that interest rate movements will be small. Consequently,



of household income is at a record level, having tripled from around 50 per cent in 1993 to 150 per cent in 2005. Interest payments as a percentage of disposable income are the highest ever at 9.8 per cent. In addition, Australian households have been drawing housing equity to finance expenditure. In short, on historic norms, the level of household debt is high. So have Australian households lost their marbles? And what has motivated them to embrace these high debt levels?

While all types of debt have increased, most of the increased debt is mortgage debt, suggesting that housing is a likely the burden of servicing higher levels of debt is seen as less risky - few buyers would expect a return to the 17.5 per cent mortgage interest rate of 1990 when buying a house. In addition, new financial products exist that make it easier to take on debt. For example, the development of equity manager loans, which enable households to borrow against the existing equity in their homes, has been a key factor.

Demographic factors could also be prominent. A new generation has emerged more comfortable with debt. And an older generation — the post-war babies — on approaching retirement, but without

adequate superannuation to support expected lengthened lifespan, have sought to bolster retirement income by engaging in property investment.

So is this higher debt level a problem? From a general economic viewpoint, the answer at the moment is 'No'. Most borrowing appears to be by people with the capacity to do so. There has been hardly a blip on forced loan closures by financial institutions, and arrears on loan payments remain low. Tenancy of residential properties remains high and underlying demand for housing remains strong with high immigration levels.

High levels of debt can become a problem for households when either one of two economic events occur:

- unemployment
- · rising interest rates

While economic growth has slowed, it has not done sufficiently for it to cause a major rise in unemployment. There are always risks from the international economy — further oil price rises, new terrorist attacks, or a collapse of the United States dollar. But the continuing commodity boom is likely to underpin further growth in the economy. Inflation has reached the top of the Reserve Bank of Australia's comfort zone.

Even so, economists are divided as to whether interest rates will rise. But most would agree that any increase is likely to be mild, and only affect households on the margin.

So should we continue to party? Over the past seven years investment in housing

tont

has, in most cases, delivered significant capital gains which has justified the decision by households to raise their level of mortgage debt.

Taxation records show that there has been a substantial rise in the number of taxpayers reporting rental income. These records also show that the majority of these taxpayers are making a loss on their investment.

Clearly, many households have bought investment properties on the assumption of substantial capital gains occurring. But apart from Perth, house price rises of established homes in the capital cities are slowing dramatically (see graph).

# Interest payments at 9.8 per cent are the highest ever.

House prices in Sydney have now fallen almost 10 per cent since December 2003. In the September quarter 2005, house prices fell in Sydney, Melbourne, Canberra, Brisbane and Hobart. Falling house prices are phenomena that most Australian households have not experienced before. It may well be that the latest figures are a statistical aberration. But if house prices do continue to fall, some households might decide that the high level of debt they are carrying is not worth the effort. Other households may decide that greater caution is required in drawing on the equity in their houses to finance expenditure.

In short, it is the prospect of flat or falling house prices, coupled with the high level of debt, rather than the debt itself, which provides cause for concern. Still, most Australian households would have seen substantial equity gains over the last few years. This gives some confidence that a general economy-wide meltdown can be averted and that the level of household debt is sustainable. However, there may well be some households either over-geared, low income earners, or recent buyers into the property market, who will feel some pain.





Researcher profile

om Rafferty



Time to work smarter, not harder

Australia is now producing more produce of better quality due to the local research and development that has been carried out. Yet Australian growers are getting less for their produce.

This is the equation that motivates Tom Rafferty in his study to improve the way Australian horticulture markets and sells its produce.

Tom is the director of Supply Chain STO and in October 2005 started an in-depth analysis of the horticulture industry with the aim of exploring better ways to market and sell produce.

"Markets can be created for products... The growers here see this as a job for someone else such as the supermarket, but when was the last time you saw Coke or Nike relying on the retailer to market their product".

Tom's research was a snapshot of the industry – rather than a long drawn out process – with the research being conducted over two months, looking especially at the fresh potato industry.

"We have a lot of R&D work in Australia but what we haven't got is any marketing research," he said.

Tom's research has shown that consumption of fresh potatoes has been going backwards for a number of years due to consumers favouring more value-added products, such as chips and pasta. Many fad diets have also shunned the potato, further affecting sales.

"Australia is producing more potatoes than ever, yet consumers are eating less," he said.

"What is wrong is that the potato industry has done no marketing. If you ignore your customers they have a nasty habit of ignoring you."

This was Tom's first foray into the grower's side of the horticulture industry. He is not a produce industry insider – rather a marketing expert who has applied marketing know-how to the potato industry.

His background is in the supply chain and logistics of transporting foodstuffs.

Tom opened his own consultancy practice in January 2000, after three years of supply chain consulting with Symonds Pty Ltd He has over twenty years experience in a wide range of logistics roles in Ireland, USA and Australia and lectured in Logistics and Operations Management at the University of Southern Queensland and in Export Management at Griffith University.

Along with his theoretical knowledge, he combines operational experience in transport and distribution management, purchasing, production management, customer service, forecasting, inventory management and marketing.

From his experience in and observations of marketing and retailing Tom knows that markets can be created for products. However this theory is not being applied to the horticulture industry.

"The growers here see this as a job for someone else, such as the supermarket," he said. "But when was the last time you saw Coke or Nike relying on the retailer to market their product.

"In Australia we have a generic approach to horticulture, but we don't have a generic approach when trying to sell other products, such as cars. You never see Mr Ford using the same marketing approach to sell different models of cars."

Tom is a strong believer in the adage that if you don't adapt to change then you become redundant.

"There are significant opportunities out there for Australian growers," he said. "But they need to do things in a sophisticated way. It is time to stop working increasingly harder, and instead work smarter.

"Growers need to take responsibility for developing their market. There is very little value-adding to take potatoes out of the ground and simply put them in a 50kg bag.

"It is time to educate the public as to what the different potatoes do: which potato is the best for mashing, chipping, steaming, and baking.

"And this can be done through a relatively inexpensive point-of-sale marketing campaign paid for through a small levy collected from potato growers."





If you ignore your customers they have a nasty habit of ignoring you

# The five principles of category management

Tom Rafferty explains the top five principles of category management.

Category management (CM) is not the next management fad. It's been around for a very long time, but not in horticulture. Why not? Maybe because horticulturists choose not to get involved in selling produce – so, why grow it in the first place?

Most of the big players in Fast Moving Consumer Goods get involved in category management to some degree. It should apply to fresh produce, but before we talk about the principles, let's define category management.

Category management is defined as "A process that involves managing product categories as business units and customising them on a store-by-store basis to satisfy customer needs." This is only relevant to growers that are interested in selling what they grow and maximising their revenue.

#### So, what are these five principles?

#### 1) Demographics

Who buys the product and where do they buy it from? The successful category manager understands the demographic profile on a store-by-store basis. People in the western suburbs of Sydney buy and behave differently to the people that live in Toorak!

#### 2) Response

How do consumers "shop" the category? How do they behave to a price change, to promotional material, to merchandising activities? Have a look at Coca-Cola, the next time you're in a supermarket. It's in an aisle, it's in a fridge near the checkout and it's outside the store in a vending machine. Three places, three prices, same stuff, no accident!

#### 3) Plans

The successful category manager has category plans. They are shared with the retailer and they demonstrate that if the product is merchandised and displayed in certain ways, certain results follow. Look at mushrooms the next time you're in a supermarket – they are doing something different; sales are increasing and so is the price – that's a win for everyone.

#### 4) Discipline

Once you implement category management, you haven't finished, you've only started. You will need to keep working on it, keep checking the merchandising and display, because if you don't, someone will steal your spot and your sales will drop. So, you need people on the ground to check and to keep checking.

#### 5) Data

It's hard to make good decisions with bad data. Most growers don't know where their produce ends up, who buys it, or when they buy it. Mr Coke does, Mr Kellogg does and Mr Cadbury does. Is that why they make billions?

Tom Rafferty is the Director of Supply Chain STO and can be contacted at 07 3843 5712, 0409 781 264 or tom@sto.au.com

<sup>1</sup> Nielsen Marketing Research (1992) "Category Management – Positioning you Organization to Win" Nielsen Marketing Research: New Jersey p9



Conference organisers: Arris
Contact: Kristi Lamond
Tel: (08) 8303 6706 Fax: (08) 8303 6752 Email: registration@vegieconf.com.au



platinum sponsor





Post: VEGIECONF C/- Arris Pty Ltd PO Box 206 Higate, SA 5063

# **National Security attacks Aussie farmers' pockets**

AUSVEG has called on the Australian government to provide financial assistance for Australian producers for compliance with the recently introduced ammonium nitrate regulations that have been implemented as a national security measure.



Ammonium nitrate as a farm fertiliser is the most practical, cost effective and environmentally friendly option available to Australian growers.

AUSVEG Chairman Michael Badcock, said that the costs associated with complying with the national ammonium nitrate regulations will impact on Australian growers' abilities to remain competitive.

"Farmers recognise the importance of national security but draw the line when it comes completely at our expense. This is a national security measure and Australian producers are the ones left carrying the entire cost, without any assistance from the Australian government," Michael said.

"The introduced regulations make the continued use of this fertiliser impractical

and this will have cyclical effects on our businesses and Australian producers' abilities to remain competitive in international market places."

Under the new regulations, for Australian growers to obtain a license for ammonium nitrate, they require a suitable storage facility and need to undertake police and ASIO checks for the licensing, costing up to \$10,000 in some states.

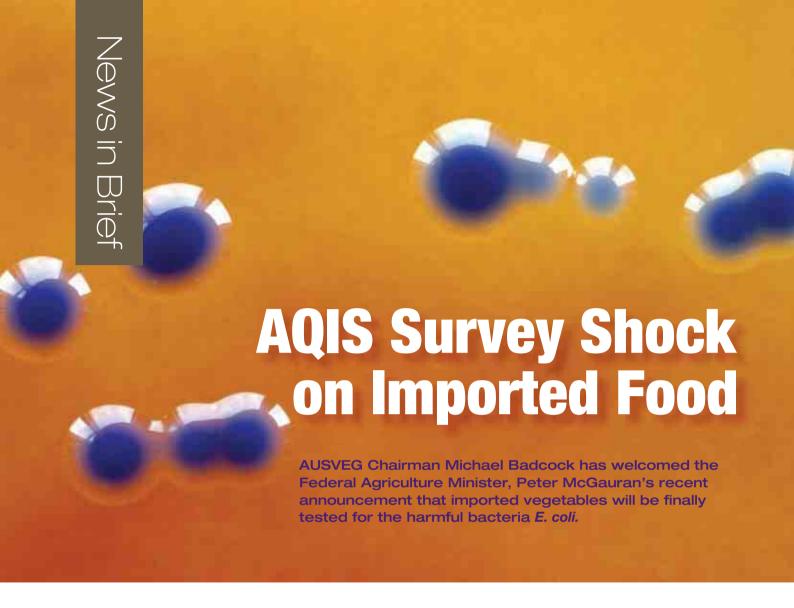
"The regulations make ammonium nitrate both costly and impractical for use, as the costs associated with compliance are far too onerous. Alternative products are also costly, with nitrogen concentrations that are potentially more damaging to the environment." Michael said.

Michael said that he was disappointed by the Australian government's position on this issue given their recent support on country-oforigin labelling and the Industry Partnership Project (IPP).

"It's extremely disappointing for the Australian government to place the entire cost burden of this important security measure solely on the shoulders of Australian growers," Michael said.

"Australian producers do their utmost to remain competitive and deliver quality produce for Australian consumers. The Australian government has given overseas markets yet another competitive advantage over Australian producers".

For more information on the national ammonium nitrate regulations, visit www.ausveg.com.au



A recent Australian Quarantine and Inspection Service (AQIS) survey on imported ongoing concerns regarding the guality and food found that 15 per cent of the sample tested positive for E. coli. E.coli detection indicates that the food has come into contact routine testing take place," Michael said. with either human or animal faecal material.

#### The 5 per cent testing regime remains insufficient.

"Ironically, the announcement was made during Food Safety Week, but within the space of 48 hours Food Standards Australia New Zealand (FSANZ) had managed to confuse consumers. Australians travelling overseas were warned that they should not eat uncooked vegetables as a precaution against food poisoning, yet only 48 hrs later, they declared that imported vegetables were not a public health risk", Michael said.

"How can a food product be potentially dangerous when eaten in Thailand, for example, be suddenly safe when imported from the same area and eaten here?" he added.

The survey results vindicate AUSVEG's safety of imported food. "It is a relief that Minister McGauran has insisted that ongoing

But AUSVEG still contends that the proposed 5 per cent testing regime remains insufficient.

"For consumers to be certain that they are getting the highest quality food possible the Australian government needs to demand that any fresh, preserved or frozen fruit and vegetables that come into Australia be grown in a manner consistent with Australian standards. End point testing alone is not the answer.

"To reduce risk to Australian consumers, imports must be grown under a quality assured Australian standard; the costs for accreditation to this standard would be met by the importer or grower in the country of origin.

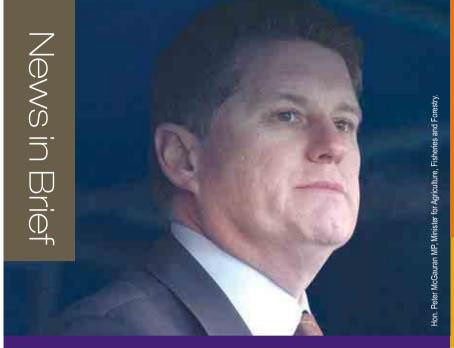
"This would also help level the playing field. Food products grown with potentially polluted water, sprayed with chemicals that have been banned in Australia, packaged

in unsanitised facilities can all land here at bargain prices. This forces our high quality domestic growers out of business. It does not make sense and is not what the overwhelming majority of Australian consumers want," Michael said.

New country of origin labelling regulations introduced late last year go some way to providing consumers information relating to where their fresh food comes from, but still does not provide information about where packaged fruit and vegetables are grown.

"AUSVEG has repeatedly called on Food Standards Australia New Zealand and the Food Regulation Ministerial Council to mandate the specific country of origin of the top three ingredients in any food product so that consumers will have a choice as to what level of risk they wish to bear," Michael said.

AUSVEG encourages the Australian government to continue down the path to further protect Australian consumers and the Australian vegetable and fruit industries.



# Horticulture top priority for Agriculture Minister

Federal Minister for Agriculture Peter McGauran has declared horticulture as his "big priority for 2006" in a recent interview with *The Weekly Times*.

The published article stated that Minister McGauran believed that the industry had to develop a competitive edge against imports, and break into new export markets in order to become viable in the future.

"The horticulture industry has a lot of work to do to achieve this, but I'll be helping

wherever possible," Minister McGauran was quoted as saying.

Minister McGauran has also pledged to take a personal role in further changes to country-of-origin labelling, consumer education and the promotion of local produce through the supermarkets, the article stated.

# **Country of Origin Update**

Following the final assessment report released by FSANZ and accepted by the Ministerial Council in October 2005, AUSVEG has lodged a submission outlining its position on the proposed changes.

AUSVEG welcomed the changes in the code as they applied to unpackaged goods, believing that they set a precedent for packaged product.

However AUSVEG maintained that the changes do not go far enough in providing accurate information to consumers on packaged vegetable products.

The FSANZ proposal considers the feasibility of extending Country of Origin

Labelling to each of two (or less) principal whole vegetable produce packaged together. Under the proposal, the country where each vegetable has actually been grown must be specified and where one vegetable has been sourced from a number of different countries then each of these countries needs to be specified.

In its submission to FSANZ, AUSVEG strongly supports this extension of country of origin labelling. While not perfect, AUSVEG recognises that the proposal goes some way to improving the situation, and that is a positive step towards removing the ambiguity associated with the present code.

# Regional Food Processing Grants

Grants from \$15,000 - \$200,000 are now available for primary producers and food processors in rural and regional Australia.

The Australian Government is investing in the future of regional Australia and our food industry through the new Food Processing in Regional Australia Program. The Food Processing in Regional Australia Program (FPRAP) is a competitive, merit-based grants program that provides matched funding of between \$15,000 and \$200,000 to small to medium sized agrifood businesses proposing a food processing project in rural and regional Australia.

An applicant's business must have fewer than 200 employees and a turnover under \$25 million per year and must be located in Rural and Regional Australia (ie must be located outside the greater metropolitan areas of all capital cities – excluding Darwin).

Grants will be allocated over a number of rounds. Applications for Round Three close 15 March 2006. As some of the instructions and questions have been changed to better target the program, it is important that applications for round three are completed on the round three application form. Applications will only be accepted if they are completed in accordance with Round Three

Application forms and program guidelines are available from:

#### www.daff.gov.au/regionalfood

documentation.

Alternatively, contact the Department of Agriculture, Fisheries and Forestry (DAFF) on 1300 794 550 to request a copy of these documents. The Food Processing in Regional Australia program is part of the Australian Government's Investing in our Farming Future initiative.

# **Produce Executive Program 2006**

The fifth Produce Executive Program will be held 28 May - 2 June 2006 at the Mt Eliza Centre for Executive Education.

The program is aimed at growers of fruit, vegetables, nuts and cut flowers, and those working in all related sectors such as seed companies, wholesale, marketing, retailing, export, distribution and logistics.

All enquiries about the program should be addressed to: Jade Neergaard, Manager - Executive Programs, Monash University, email: seminar\_manager@yahoo.com and anyone wanting to register their interest in receiving a brochure when these are ready in February, may do so at any time. Phone: 03 9904 4172, or fax: 03 9904 4113.

# **Vegetable Industry Delivers Fresh Produce for Consumers**

country where seasonal growing

Recent media attention has labelled the Australian fresh food industry as a 'farce', suggesting that fresh fruit and vegetables at local supermarkets and greengrocers may be up to a year old.

Earlier this month, an article in the Saturday Daily Telegraph cited research that had found apples up to nine months old on the shelves of a major supermarket. The article went on to suggest that retailers are also selling "vegetables from growers who store it for months". However. AUSVEG is reassuring consumers that they should continue to trust the freshness of vegetables from their local supplier. "The vegetables in Australia are delivered fresh to consumers contrary to recent publicity," the Chairman of AUSVEG. Michael Badcock said. Australian vegetable producers do put freshly harvested vegetables on consumer's plates, but it comes at a cost. "This cost comes from transporting vegetables large distances across the

conditions allows for all year round production," Michael said.

Michael said that most vegetables in Australia are harvested as they are needed. Where storage does need to happen due to seasonal conditions, these vegetables are processed and snap frozen to retain their goodness and optimum quality. This is not always the case with other forms of produce.

Consumers should continue to trust the freshness of vegetables.

"It is challenging times for growers as the large supermarkets want vegetables in their stores 365 days a year but are often not willing to pay the extra costs associated with bringing the product greater distances," Michael said.

"This then creates its own problems as economics drives enterprises to look at ways of storage or importing product from overseas and this affects growers prices. "Given the importance of fresh vegetables in a healthy diet and Australia's growing obesity and health problems, it is imperative that people have the utmost confidence in growers' ability to deliver fresh produce and the retailers' to display this same high quality produce for them to choose from," Michael said.

#### **New South Wales**

#### **Extension of Country of Origin Labelling**

The Centre for International Economics (CIE) is carrying out a feasibility study into extending CoOL to packaged fruit and vegetable products with two or less whole food components. The Association has put in an initial submission supporting this extension which would see consumers able to identify imported 'ingredients' in these two-product foods which in the past have been under the banner of 'Made in Australia from local and imported ingredients'. We also continue to fight for reform of the Trade Practices Act guidelines on CoOL so consumers will not continue to be confused and misled.

#### Woolworths Workshops

Woolworths, in conjunction with NSW Farmers' Association, held workshops in the Riverina region in December to inform growers of the company's business operations. These workshops give growers an opportunity to quiz senior managers from the company about issues such as quality specifications, rejections, and supply programs.

# Security Sensitive Dangerous Substances (SSDS)

The Australian government has officially rejected a request from the NFF and other organisations such as NSW Farmers' and AUSVEG to give growers compliance grants to cover the costs of the new regulation. In New South Wales the regulation commences in January and will cost growers \$250 to license every worker who has unsupervised access to ammonium nitrate and other yet to be added 'Dangerous Substances'. These substances will most likely include other fertilisers such as potassium nitrate and agricultural chemicals.

Luke Jewell Senior Policy Analyst NSW Farmers Association

Growing the Business of Farming



Address: Level 10, Elizabeth St Sydney NSW 2000

Tel: 02 8251 1885 Fax: 02 8251 1752 Contact: Luke Jewell

#### Queensland

Queensland has had a very busy wrap up of 2005 and start to 2006 with a number of noteworthy conclusions.

Firstly a submission to the Queensland Department of State Development and Innovation for a food processing and packaging research partnership project to involve key researchers, growers, processors, Growcom, and NFIS. The results of the submission will be known in April.

The vegetable IDO project was submitted to HAL for a 12 month extension, although this is subject to any findings of the recently completed IDO review.

The Queensland government announced that it has extended the period for the development of pricing strategies with SunWater (the state government-owned water supplier) to July 2006 and also would extend the phasing-in of increased water prices for irrigators to five years. Growcom met with other Queensland irrigation industry representatives in December to discuss the government announcement and identify strategies for future negotiations. They agreed that the government's decisions were encouraging but that industry needed to ensure negotiations on outstanding concerns continued.

There is a key focus over the coming months to address the horticultural labour situation working together with training bodies, labour hire companies, HR and IR representatives within Growcom, growers and regional growers associations.

Jan Davis CEO Growcom



Address: Floor 1, 385 St Pauls Terrace

Fortitude Valley, QLD 4006

Tel: 07 3620 3844 Fax: 07 3620 3880 Contact: Jan Davis

#### **South Australia**

Following the devastating end to 2005 as a result of recent flooding on the Adelaide Plains, growers are looking towards the future with uplifting and positive minds.

The Virginia Horticulture Centre, the business recovery centre for the flood-affected area has been working to provide support services for the Adelaide Plains Community. Assistance in administering the South Australian government grants assistance package, providing soil and plant health advise, business and financial services and assistance in further longer term financial support have all been key roles facilitated through the Centre.

After a number of localised grower meetings, an action plan to minimise the future impact of such an event is being developed. It is positive to see that, after the initial shock and damage, many growers are looking towards a more success future through grower collaboration, new farm practices and in some cases a complete change of focus.

Mike Redmond General Manager Virginia Horticulture Centre



Address: Old Port Wakefield Road Virginia SA 5120

Tel: 08 8282 9200 Fax: 08 8380 8950

Contact: Michael Redmond



South Australian Farmers Federation Address: 3rd floor, 122 Frome St

Adelaide SA 5000 Tel: 08 8232 5555 Fax: 08 8232 1311

Contact: John Mundy

### Around the States

#### **Tasmania**

#### Vegetable Industry Taskforce Report

In May last year, after McDonalds Australia announced that it would end its exclusive contract with processor Simplot, the Tasmanian Premier, Paul Lennon called for a Vegetable Industry Taskforce (VIT) to examine the state of the processing industry in Tasmania.

Made up of industry and government representatives the VIT produced a report that was presented to the Premier and the President of The Tasmanian Farmers & Graziers Association, Roger Swain at the end of November.

It contained numerous recommendations for Tasmania's vegetable industry on consumer issues, the retail and processing sectors, growers and other general issues.

It also highlighted issues such as:

- The principals of "value chain management" are not known or implemented by the major industry players within Tasmania.
- Little advantage has been taken by the processing industry in promoting the benefits of produce grown in Tasmania.
- The large proportion of Tasmanian vegetable growers were contract process growers, producing to the price and specifications required by the processors.
- Rapid changes in exchange rates have exacerbated the rate at which the Australian vegetable industry has become uncompetitive.
- Mechanisms to create innovation and new products need to be created by all parts of the industry chain, not just the farm sector.

The report addressed some difficult issues and will provide a blueprint for innovation and change for the Tasmanian vegetable processing industry. Hopefully it will see resurgence of an industry that has been an important contributor to the Tasmanian economy and local communities.

## TFGA initiate a Vegetable Industry Strategic Plan

The TFGA Vegetable Council after being instrumental in organising the successful "Fair Dinkum Food Campaign" has set aside \$30,000 to initiate a strategic plan that will encompass all sectors of the Tasmanian vegetable industry. This has been matched with funds from the Tasmanian government as a result of the recommendations from the Vegetable Industry Taskforce report.

Through the TFGA a comprehensive strategic planning exercise will take into account the key commodities and include an examination of the whole supply chain and identify where efficiencies can be gained. It will also identify mechanisms to create innovation and new products from all parts of the supply chain.

A part of the strategic planning will be to scope projects along each chain that will assist with international competitiveness. This information will then be used to assist the industry in securing funding from the Australian Government's \$3 million Industry Partnership Project and other relevant funding options.

# Update on the Brassica Futures Group (BFG)

In volume 1.3 of Vegetables Australia "Around the States" it was noted that Tasmanian broccoli growers were "behind the eight ball" as a result of high and uncompetitive growing costs. As a result, the BFG has commenced planning and trial work on direct seeding of the crop. Three trial sites will be set down on private properties on the North West Coast and Northern Midlands and vary in size from one hectare to a full centre pivot. The Department of Primary Industry Water & Environment will also undertake a trial at their Research Station site at Forth.

A large contractor has recently returned from an overseas trip where he has been looking at the issues of mechanical harvesting and the potential for the Tasmanian broccoli industry.

The TFGA has, on behalf of the BFG, applied to HAL for a small amount of "emergency funding" to enable certain trials to be undertaken immediately and assist those growers and others in the chain who have made a commitment to be involved in the process of bringing broccoli to a viable and competitive crop.

Denis Leonard Executive Officer TFGA



Address: Cnr Cimitiere & Charles Streets Launceston TAS 7250

Tel: 03 6332 1800 Fax: 03 6331 4344 Contact: Denis Leonard

#### **Western Australia**

Jim Turley Executive Officer Vegetables WA



Address: Horticulture House 103 Outram St, West Perth WA 6005

Tel: 08 9481 0834 Fax: 08 9481 0024 Contact: Jim Turley







#### Victoria

Over the past year publications such as Taste of Victoria, Weekly Times, National Fruit & Vegetable News and National Market Place News have featured articles about vegetable growers, which is most pleasing, especially when they are members of the VGA.

There is a vast amount of production expertise and development of crops provided by vegetable growers on their properties, which on a number of occasions does not receive recognition yet is an ongoing cost to the grower in maintaining a market edge.

The National Vegetable Levy has been in operation for over nine years and has produced some good results. There are growers however who believe that a national review should be carried out throughout the vegetable industry to analyse the current benefits to levy paying growers. There has been a strong call from State organisations to hold a public review and that VGA Executive Committee are certainly keen to receive accurate information to pass on to its Victorian membership.

The VGA has an affiliation with the Victorian Farmers Federation Horticultural Group (VFF Hort Group) and provide representation to their meetings. At the VFF 2005 Annual Meeting it was pleasing to see Peter Cochrane elected as President of the VFF Hort Group for 2006. Peter has been the VGA representative for a number of years and provides excellent input and specialises as Chairman of the VFF Agriculture Chemical Committee, Ammonium Nitrate has been one of the many issues facing vegetable growers and Peter has been in the forefront with State and Federal agencies, ensuring that growers have access to farm products without all the red tape of unworkable legislation.

There must be urgent progress in the development of a national protocol by each state Plant Standards Department, when faced with issues of plant diseases. Market access at all levels must be available to all vegetable growers on an equal footing and time delays in detection and corrective action must be minimised.

Darkness appears to be descending upon the relocation plans for the Melbourne Markets and market users are those engulfed in that darkness. There has been no communication from DPI Special Projects over the last two months of 2005 other than to postpone the monthly meeting due to lack of design layout information. No details have been released regarding cost to market users or the legal issues of being relocated from Footscray to Epping. It would seem that 2010 is another inaccurate government estimate and that a 2020 move is becoming more practical.

Mother Nature provides a very levelling situation to all horticultural producers with the intervention of rain, fire and the heat of the sun. Shortages become oversupply with over supply becoming a shortage, yet Australia wide production continues to provide more than adequate supplies of fresh produce all year round.

Vegetable imports and exports are providing industry with a tug of war in how the Australian grower will survive. The talk of free trade and tariffs are all entangled with food safety and quality assurance.

2006 will be a year when the vegetable industry must be active as a watchdog over these issues or the cost of vegetable production will outstrip the viability of making a living.

Tony Imeson Executive officer VGA



Address: Mail Box 111, Melbourne Markets 542 Footscray Rd, West Melbourne VIC 3003

Tel: 03 9687 4707 Fax: 03 9687 4723 Contact: Tony Imeson

















## Calendar of events

#### **FEBRUARY 2006**

#### 9 February

#### **Vegetable IAC Meeting**

Stamford Plaza Hotel, Sydney Airport, Sydney.

Contact: Jonathan Eccles

#### 15 February

#### **ANFD Horticultural Field Day**

NSW DPI Orange Agricultural Institute, Forest Road Orange, NSW (Central Tablelands)

The ANFD are planning a Horticultural Field Day for 15 February 2006.

The event will be conducted at NSW DPI Orange Agricultural Institute located on Forest Rd, Orange. Points of interest will include commercial exhibits, product demonstrations and talks to provide orchardists with a look at the latest technologies.

This will be the final horticultural field day to be held off the Borenore site which has had significant work in the orchard in preparation for regular field days in the future. It is anticipated that the horticultural field days will continue every second year at the Borenore site.

#### 17 - 19 February

#### Seymour Farm Expo

Seymour, Victoria **Tel:** 03 5799 1211

Email:

sey-expo@wseymour-rural.au.com

#### 20 - 23 February

12th Australian Food Microbiology Conference in conjunction with the 2nd International Conference on Microbial Risk Assessment: Foodborne hazards

The Sofitel Wentworth Hotel, Sydney

Tel: 02 8399 3996
Fax: 02 8399 3997
Email: aifst@aifst.asn.au
Website: www.aifst.asn.au

#### 28 February - 3 March

#### **ABARE Outlook Conference 2006**

Convention Centre, Canberra.

Tel: 02 6272 2303

Website: http://www.abareconomics.

com/outlook

#### **MARCH 2006**

#### 7 - 8 March

#### Fresh Potato IAC Meeting

HAL Head Office, Sydney Contact: Simon Drum

#### 14 March

#### Vegetable R&D Meeting

Crowne Plaza Hotel, Coogee Beach, Sydney

Contact: Jonathan Eccles

#### 15 March

#### **Vegetable IAC Meeting**

Crowne Plaza Hotel, Coogee Beach, Sydney

Contact: Jonathan Eccles

#### 16 March

#### **AUSVEG Board Meeting**

Crowne Plaza Hotel, Coogee Beach, Sydney

Contact: John Roach

#### 19 - 23 March 2006

#### Veg Futures —

#### The Conference in the Field

Albury-Wodonga, Australia

Contact: Haydn Burgess, Greening Australia

Tel: 02 6281 8585

Email:

hburgess@greeningaustralia.org.au

#### 26 - 28 March

#### Fine Food Queensland

Brisbane Convention and Exhibition Centre, Brisbane, Queensland.

**Tel:** 03 9261 4500 **Fax:** 03 9261 4545

Email: food@ausexhibit.com.au

Website:

http://www.foodgueensland.com.au

#### 29 - 30 March

# Facilitating adoption of no-tillage and conservation farming practices

Sustainable Farming Training Centre, Tamworth Agricultural Institute,

4 Marsden Park Road, Calala Tamworth, NSW (North West Slopes and Plains)

The broad objective of the conference is to identify the constraints to the further adoption of conservation farming and no-tillage practices in the northern grains region. Registration fee \$200.

For more information, contact Shauna Dewhurst, John Kneipp or Bob Martin

**Tel**: 02 6763 1100

Email:bob.martin@dpi.nsw.gov.au

#### **MAY 2006**

#### 4 - 6 May

#### **AgFest Rural Trade Fair**

Launceston, Tasmania

Tel: 03 6334 0262

Website: www.agfest.com.au

#### 8 - 11 May

#### Enviro 2006

Melbourne Exhibition & Convention Centre, Melbourne, Victoria

The Enviro 06 conference & Exhibition is a platform for showcasing the Australian environment industry. Presented by the Australian Water Association and Waste Management Association of Australia & New Zealand in conjunction with the Mayors Asia-Pacific Environmental Summit to be held at the same time and venue as Enviro 2006. More than 6000 people are expected to attend.

Contact: Rosalind Vrettas

**Tel:** 02 9410 1302 **Fax:** 02 9410 0036

Email: rvquitz@bigpond.com Website: www.enviroaust.net

#### 10 - 12 May

## Australian Vegetable Industry Conference

Brisbane Convention and Exhibition Centre, Brisbane, Queensland

Website: www.vegieconf.com.au

#### 12 - 13 May

Murrumbidgee Farm Fair Yanco, New South Wales

Tel: 02 6962 0950

Website: www.murrumbidgeefarmfair.

netfirms.com

lause Tézier is a specialist vegetable seed company involved in the breeding, production and commercialisation of vegetable seeds for professionals. It is part of the largest independently owned seed company in the world - Groupe Limagrain. The company combines more than a century of experience and professionalism built up over the years by Clause and Tézier and has a strong position world wide with over 600 employees and a presence in over 80 countries. Clause Tézier Australia has opened its doors directly to growers in Australia. All Clause vegetable seed varieties for Australian growers can be purchased directly from Clause Tézier Australia. Our varieties have been grown for many years in Australia and to improve the relationship between the end user and the Clause Tézier breeders, we have established an office in Australia so a more direct and efficient line of communication can exist.

## Clause Varieties available

#### ABBAGE GREEN/PROCESSING/FRESH

Brigadier F1 Kaporal F1 Centurion F1 Sir F1 - (mini)

ABBAGE - RED

CLX 4009 F1

Red Skv F1\_ Red Cap (CLX 4015) F1

ABBAGE - SAVOY

Capriccio F1 Manon F1

#### **APSICUM**

Alvaro F1 (Orange) Chistera (CLX P439) F1 - IR: TSWV

CLX P02604 F1 - Yellow

IR: TSWV

**Citrine (CLX P01921) F1** 

Yellow - IR: TSWV

Cleor F1 - Yellow Sweet Horn Deo (CLX P02129) F1 - Yellow

IR: TSWV

Heldor F1 - Yellow

Hercules (CLX P639) F1 Lipari F1 - Sweet Bull Horn

Niagara (CLX P1739) F1 - IR: TSWV Nikita (CLX P854) F1 - Blond

Red Jewel (CLX P407) F1 - HR: Bls / IR:

**TSWV** 

Red Stone (CLX P1421) F1 Rico (CLX P1443) F1

Sienor F1 - Yellow

Zen (CLX P1408) F1

ARROT NATURAL SEED

Adonis (CLX 3175) F1 Osiris (CLX 3167) F1 Saturno (CLX 31560) F1

Senior F1

Trevor (CLX 3172) F1 Triton (CLX 31560) F1 - Bunching Ulyses (CLX 3176) F1

#### AULIFLOWER

Alinghi (CLX 33247) F1 Amistad (CLX 33102) F1



Aviso F1 Beluga F1

Escale F1

Galicia F1

Galiote (CLX 33706) F1 Intrepid (CLX 3354) F1

Liberty F1

Nautilus F1

Navigator (CLX 33228) F1

Optimist F1

Scudo (CLX 33243) F1

Sloop (CLX 33216) F1

Thalassa F1

Triomphant (CLX 33707) F1

#### AULIFLOWER

**GREEN** 

Emeraude F1 Trevi F1

Magnifico F1

**ORANGE** 

Sunset (CLX 33226) F1

AULIFLOWER

**ROMANESCO** 

Celio (CLX 3394) F1 Navona F1

Lazio F1

#### UCUMBER CONTINENTAL

Apollo F1 Columbia F1

GGPLANT Galine F1 (bonica type)

#### ENDIVE

lade

Mache Raw **Pellets Palmares** Frisela Frisela Trophy Ilda Ilda Fiesta Nina Nina Gala



RADICCHIO Amigo F1 Cirrus F1 Carmo F1 Claudio F1 Clio F1 Stratos F1 Serpico (CLX 4321) F1

#### ROCKMELON

Capo (CLX 2777) F1

Kariba F1

Luxo F1

Pegaso F1

#### ОМАТО

Indeterminate (gourmet):

• Pacifica (CLX 37125) F1

HR: Fus.3 & Nematode

• Florenzia (CLX 37185) F1

IR: TSWV & C5\_

• Eureka (CLX 37251) F1

HR: Fus.3 & Nematode

Indeterminate (roma):

• Colibri F1 - HR: Nematode

IR: Stemphylium

Escudero (CLX 37159) F1

HR: Nematode

• Manila F1 - HR: Fus.3 & Nematode / IR: Stemphylium

• Titan (CLX 37221) F1 - HR: Fus.3 & Nematode / IR: Stemphylium & TSWV

#### UCCHINI

Amanda F1

Calida (CLX 29758) F1

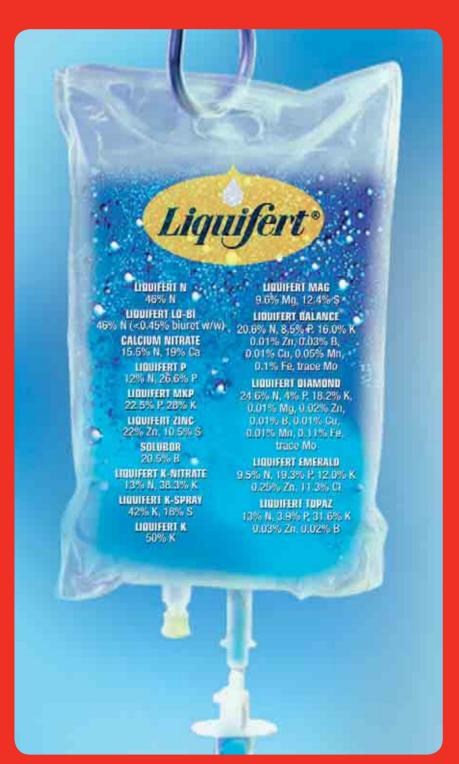




CLAUSE TÉZIER AUSTRALIA Pty Ltd. Customer Service: Unit 27/148 Chesterville Road P.O. Box 1019 MOORABBIN - VICTORIA 3189 Tel.: (03) 9553 3000 - Fax: (03) 9553 5000 www.clausetezier-australia.com



# Intensive care for your crop.



For a concentrated, quality dose of nutrients the Liquifert® range of soluble solid fertilisers is just what the doctor ordered.

Because Liquifert products are highly soluble they are ideal for use in a variety of fertigation systems. The extensive range offers the flexibility to drip feed the crop with the right nutrients when required.

When used in conjunction with Nutrient Advantage™ – Incitec Pivot's soil, plant tissue and water testing service – Liquifert products will help keep your soil and crops in the best possible health, helping to maximise yields.

For details from the fertiliser specialists, contact your local Incitec Pivot Agent or Dealer. Freecall 1800 333 197.

www.incitecpivot.com.au

Incitec Pivot

Because the land is your life.

IPL1047 Re