FINAL REPORT (109)

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Table of Contents

1.0 Introduction....3

2.0 Rationale....3

3.0 Objectives....4

4.0 Structuring a national vegetable industry delegation....4

5.0 Method....4

5.1 Call to industry members....4

5.2 Delegation logistics....6

5.3 Attending symposia – semi-structured itinerary....7

5.4 Developing a reporting process....7

5.5 Daily meetings and debriefings....8

6.0 Outputs....9

6.1 Communications....9

6.2 R&D concepts....9

6.3 List of R&D concepts....9

6.4 General comments regarding vegetable industry R&D....13

7.0 Discussion and Review....13

7.1 Survey results....14

7.2 Feedback....15

7.3 Student supported position....16

8.0 Conclusion....17

9.0 APPENDICES....19

1.0 Introduction

The International Horticultural Congress (IHC2014) was held at the Brisbane Exhibition and Convention Centre from 17 – 22 August 2014. The Congress was an international event, with representation from 106 countries, over 3,400 delegates (including 500 from Australia), 8 plenary sessions, 43 symposia and over 2,408 presentations. The Congress was a major event for Australian horticulture and the vegetable industry in particular.

A diverse group of 22 industry members, including Vegetable IAC, Design Team, and Vegetable Technical Advisory Group representatives, attended the Congress on the vegetable industry's behalf. Other members of the delegation included researcher Dr Len Tesoriero, industry agronomists, a student from the University of Queensland, HAL and AUSVEG representatives. Throughout the five-day Congress, the delegation attended approximately 150 separate symposia sessions, in addition to daily plenary speaker sessions - an impressive effort from the group. The group attended a diverse array of sessions - some more challenging than others - covering topics such as:

- Pest & disease management
- Consumer choice
- Post-harvest and pre-harvest issues
- Knowledge transfer methods in horticulture
- Organic wastes
- Nutrients
- Sustainability and climate change
- Genetically Modified Organisms (GMOs)
- Energy use

The delegation met daily at 7:45am, which allowed delegates to get to know each other and informally discuss new ideas and R&D concepts. These discussions, as well as group brainstorming after each seminar, were used to develop ideas from the seminars while allowing delegates to contribute their opinions and expertise. Networking with other industry professionals also proved to be beneficial for the delegation. Feedback from attendees was very positive overall. The International Horticultural Congress proved to be a spectacularly diverse, engaging and stimulating experience as illustrated by the feedback provided by delegates (see section **7.2**).

2.0 Rationale

In January 2014, the Vegetable Industry Advisory Committee (IAC) considered funding a delegation to the IHC2014. The proximity of the Congress provided the Australian vegetable industry with a rare opportunity. The range of research presented at the Congress included topics directly relevant to the vegetable industry, as well as to other horticultural commodities. It was deemed that participation in a diversity of symposia

would be especially valuable for new R&D ideas for vegetable industry investment. Through the IHC2014 delegation, new R&D concepts could be fed to the Design Teams and IAC, while also providing a point of comparison to benchmark the industry's investments against other horticultural industries. In fact, many symposia reaffirmed that R&D investment in the Australian vegetable industry was either on-track or ahead of other industries.

3.0 Objectives

The main objectives of this mission included:

1. To ensure that the vegetable industry did not miss out on a valuable opportunity to engage and network with the international horticultural community, and in particular, global R&D leaders and thinkers.
2. To stimulate new ways of thinking, and in particular, drive the processes which currently contribute to R&D project development within the vegetable industry.
3. To obtain relevant materials and resources which are to be disseminated to the wider industry, and to distribute a final report collating key insights obtained from the Congress.
4. To promote discussion amongst vegetable industry representatives, given that they may not normally be able to communicate with each other due to the fact that they represent a diversity of geographical regions from around Australia.

4.0 Structuring a national vegetable industry delegation

Following discussion between the Vegetable IAC, HAL and AUSVEG, a preferred composition for the delegation was mapped out. Consideration was given to the diversity of delegates including a range of expertise, location, knowledge of different crops, and roles within the vegetable industry. This was intended to ensure that the group could engage fully with the broad range of complex technical and non-technical information presented at the Congress, as well as fostering productive discussion within the group itself. The preferred delegation composition, included in **Appendix 1**, provided a guide to AUSVEG when inviting industry members to apply for a position in the delegation.

The IHC2014 symposia were highly technical with a strong research focus. Taking this into consideration, the delegation included industry agronomists, an industry researcher, members of the Vegetable Technical Advisory Group (VTAG), and an additional position for the Farm Productivity, Resource Use and Management (FPRUM) Design Team.

5.0 Method

5.1 Call to industry members

AUSVEG approached various industry members to achieve the desired quotas as set out by the preferred delegation composition list. This included sending formal invitations to the various industry committees (Design Teams, VTAG, and the Vegetable IAC), as well as targeted communications to industry agronomists.

Through correspondence with the University of Queensland, AUSVEG also secured a university student to take part in the delegation. Applications were submitted to AUSVEG and reviewed against the preferred delegation composition list. The final delegation was made up of 22 industry members as listed below:

Figure 1.0 – List of IHC2014 delegates

Title	First Name	Last Name	Grower (Y/N)	Category	State
Mr	Bruce	Scott	N	VTAG	VIC
Mr	Darren	Hicks	N	VTAG	TAS
Mr	Stuart	Grigg	N	VTAG	VIC
Mr	Tony	Kourmouzis	N	VTAG	SA
Mr	Andrew	Craigie	Y	DT (FPRUM)	VIC
Mr	Michael	Radcliff	Y	DT (FPRUM)	TAS
Mr	Rohan	Prince	N	DT (FPRUM)	WA
Mr	Andrew	Meurant	N	DT (MVCD)	SA
Mr	Sean	Richardson	N	DT (MVCD)	NSW
Mr	Gregory	Owens	N	DT (CA)	NT
Mr	Jeffrey	McSpedden	Y	IAC (Chair)	NSW
Cr	John	Brent	Y	IAC	QLD
Mr	Robert	Hinrichsen	Y	IAC	QLD
Mr	Eddy	Dunn	N	Agronomist	QLD
Mr	Jason	Woskett	N	Agronomist	VIC
Mr	Owen	Rich	N	Agronomist	NSW
Mr	Russell	Fox	N	Agronomist	VIC
Dr	Surachat	Vuthapanich	N	Agronomist	QLD
Dr	Len	Tesoriero	N	Researcher	NSW
Mr	Byron	de Kock	N	HAL	VIC
Ms	Emily	Pattison	N	Student (UQ)	QLD
Mr	Timothy	Shue	N	AUSVEG	VIC

Figure 2 Vegetable industry delegation at the International Horticultural Congress.

This project was an unprecedented undertaking for the vegetable industry – sending a group of 22 industry members to a week-long event was a great achievement. The framework for the project was based on previous grower tours. AUSVEG, with support from HAL, developed a 'semi-structured' itinerary for the delegation to ensure an accountable reporting process, while also providing delegates with the flexibility to manage their professional responsibilities (see **Appendix 2**).

5.2 Delegation logistics

Accommodation

Accommodation for the delegation was selected due to the hotel's proximity to the Brisbane Exhibition and Convention Centre which maximised time for group meetings and minimised transport costs over the six-day period. It also reduced time pressure on delegates who had to manage meetings between Congress responsibilities.

Meals

AUSVEG arranged set menu breakfasts for the delegation in a private section of the hotel restaurant. This provided an opportunity for delegates to get to know one another, discuss ideas and partake in daily briefings (see **section 5.5**). The breakfasts provided a valuable forum for communicating information to the delegates, and future tours should consider a similar format.

Transport

AUSVEG distributed information to delegates via group email and text messages, including meeting times and venues, and information on land transport options, such as trains and taxis (including maps, ticket prices, times and addresses of locations). All flights to and from Brisbane were arranged through AUSVEG on behalf of delegates.

5.3 Attending symposia – semi-structured itinerary

AUSVEG, with assistance from HAL, developed a semi-structured itinerary for each delegate based on symposia deemed to be priorities for the Australian vegetable industry. This meant that delegates were allocated a certain number of symposia sessions per day to attend, while also having non-allocated sessions in which they could choose symposia to attend.

Figure 3 Delegates attending symposia sessions at the Brisbane Exhibition and Convention Centre.

The semi-structured itinerary balanced delegates' responsibilities to attend sessions which had been deemed priorities for the industry against sessions that may have been of interest to individual delegates. With over 1,200 scheduled oral presentations, the feedback from delegates indicated that this approach worked very well, and helped to streamline the group's movements.

Allocating between three and seven delegates per session meant that notes from the symposia reflected a range of perspectives. This reduced the influence of individual bias or assumptions that may otherwise have come through in the reporting process. Having at least three attendees per session also provided the schedule with a degree of flexibility, allowing delegates to swap between sessions as required. A sample of the semi-structured itinerary is included in **Appendix 2**.

5.4 Developing a reporting process

Following the allocation of delegates to symposia sessions, AUSVEG developed a reporting process to facilitate the capture of R&D ideas, key information, and relevant speaker names. This was done using hard

copy reporting sheets (see **Appendix 3**). However, some delegates preferred to submit the reporting sheets electronically to the AUSVEG leader.

For each session, one delegate was nominated as the 'lead note-taker'. The lead note-taker's responsibility was to bring delegates together after a session to discuss the key points and insights learned. These were then captured on the summary sheet and passed to the AUSVEG leader.

The purpose of this reporting was threefold; first, the reports provided summaries of the information presented at each symposium. For AUSVEG, it was important to understand the breadth of knowledge being presented, and what topics/issues were discussed. Delegates were also encouraged to note down any particular speakers of interest.

Second, the summary sheets allowed delegates to note any ideas for R&D investment. Ideas were also generated via post-session discussions and delegates were challenged to think about how the information related to broader industry needs and priorities.

Third, the compulsory reporting provided delegates with a degree of accountability and responsibility (i.e. returning summary sheets to the AUSVEG leader), which contributed to a high submission rate. Delegates were incentivised to actively communicate with the AUSVEG leader, allowing feedback to be submitted to AUSVEG in a timely manner.

Each delegate was given a personalised itinerary, contact information, summary sheets and a notepad, and delegates found these resources very useful. A summary of delegate notes from the symposia is included in **Appendix 4**. It was suggested that it would have been beneficial to have a section on the summary sheet (**Appendix 3**) to allow delegates to comment on the quality of speakers.

5.5 Daily meetings and debriefings

Figure 4 Congress delegates at a breakfast meeting.

Delegates were asked to meet at the hotel restaurant at 7:45am each morning for a daily briefing. The briefings usually ran for approximately 10 to 15 minutes, and allowed AUSVEG to communicate daily notices (such as dinner plans or special events held that day), obtain feedback from delegates about symposia and summarise key R&D insights. Additional group meetings included an introductory session, a mid-week dinner and a de-brief on the final afternoon of the Congress. Breakfast meetings were an informal yet important start to each day's

activities. Delegates could discuss symposia sessions and topics of particular interest with the group.

6.0 Outputs

6.1 Communications

Information relating to this project and the International Horticultural Congress was distributed through various AUSVEG communication channels. AUSVEG promoted the delegation and its activities both prior to and following the IHC.

Communication channels included:

- The AUSVEG Weekly Update
- Twitter
- The R&D Industry Development Newsletter
- *Vegetables Australia* magazine (see **Appendix 6**)

6.2 R&D concepts

The following section contains R&D concept ideas generated by delegates at the International Horticultural Congress. As was the intention of this project, the mission has resulted in numerous suggestions for future investment of National Vegetable Levy funds, as well as verifying that the Australian vegetable industry is on track or ahead of other industries and even leading some areas of R&D investment.

The following ideas are the result of the delegates' participation in approximately 150 symposia sessions, informal brainstorming sessions, general discussions between group members and notes recorded via delegate summary sheets. Associated symposia notes are included in **Appendix 4**.

6.3 List of R&D concepts

1. A desktop study to review tools used in other horticultural industries that can measure key attributes of vegetables, such as ripeness, water content etc. The resulting summary should identify any tools/machines/sensors which could be used by growers. (SYM11 – 18.08.14)

2. A project to review or test for varieties or genetics in vegetables which may: (1) improve consumer perception and uptake, (2) lead to more efficient processing or harvesting, and/or (3) lead to greater resistance to changing climates. (SYM11 – 18.08.14)

3. A project that benchmarks consumer expectations in terms of vegetable quality and provides recommendations relating to harvesting parameters that could help growers meet these expectations. (SYM11 – 18.08.14)

4. A project to investigate the viability of using young cornflour as a substitute to wheat flour. The project should outline any possible health advantages, and the economic viability of production. (SYM14 – 18.08.14)

5. Industry supported cadetships that involve practical, on-farm experience for young graduates. The industry could look at establishing partnerships between universities and growers in order to make the process easier and more appealing for students. A key element of this project would be developing a list of growers willing to accept students, and potentially distributing this to university career departments or student groups. (SYM20 – 18.08.14)

6. A project to identify varieties of vegetables in specific regions of Australia that may be indicators of climate change extremes. The project could focus on vegetables that are particularly sensitive to different climatic parameters, using these crops as a 'canary in a mineshaft' to detect shifts in climate thresholds. (SYM8 – 18.08.14)

7. Investigate potential benefits of cross-breeding vegetables with indigenous plants to develop varieties more resistant to climate change, i.e. drought resistant varieties to survive extreme Australian climate conditions.

8. A project that provides data generated via Project Harvest relating to consumer vegetable preferences to vegetable breeders in order to develop varieties tailored to consumer demand. Potential new varieties might include super sweet carrots or half-sized broccoli plants which might be preferential to currently available varieties. New varieties could be launched using celebrity chefs, field-days, conventions and/or cooking demonstrations. (SYM11 – 18.08.14)

9. Explore the potential of using fungicides to reduce ethylene levels (caused by fruit rot) in pre-packed salad-mixes and baby-leaf mixes. The project could determine fungicide treatments that increase shelf-life for fresh cut vegetables. (SYM4 – 18.08.14)

10. Investigate the processing of chicken manure by housefly larvae to develop an affordable organic fertiliser for growers. Housefly larvae can convert the manure into palletised fertiliser within seven to ten days. The project could determine the most efficient process for fertiliser production whilst maintaining hygiene standards and minimising odours. (SYM30 – 19.08.14)

11. Develop a capacity building program targeting vegetable industry employees and/or students in order to instil practical and useable skills. The Growing Leaders program was used as an example of a successful training initiative. (SYM20 – 19.08.14)

12. A desktop study to identify potential markets for vegetables that do not meet retailer specifications. (SYM14 – 19.08.14)

13. Investigate alternative sources of soil-carbon and the potential to use organic wastes as soil amender/fertiliser for vegetable growers, as the current costs of compost are very high. (SYM30 – 19.08.14)

14. Investigate the potential for cross-breeding resistant capsicums with commonly grown capsicum varieties in order to breed resistance to thrips. (SYM23 – 19.08.14)

15. A desktop study to identify and collate recent improvements in greenhouse vegetable production, focusing on global leaders in greenhouse technology. (SYM22 – 20.08.14)

16. A feasibility study, including a cost-benefit analysis, into the use of low resolution infrared thermal imagery for monitoring moisture stress in crops. (SYM5 – 21.08.14)

17. Investigate the feasibility of using unmanned aerial vehicles (UAV) and thermal imagery to map farms and measuring soil/vegetation etc. UAVs could potentially use low resolution infrared technology to measure moisture stress in crops, as proposed in project concept number 16. (SYM5 – 21.08.14; SYM20 – 18.08.14)

18. Utilising vegetable waste products, such as beetroot or carrot pulp, to create nutrient-rich products, such as bread or cakes. The project would identify products that could use these by-products to create nutritionally superior products, thereby increasing vegetable consumption. These products could potentially reduce the risks of diet-related diseases. (SYM1 21.08.14)

19. A desktop study to evaluate post-harvest tools and technologies used within horticulture and their applicability to vegetable crops. The study could identify new technologies to enhance vegetable production. (SYM19 - 21.08.14)

20. Investigate consumer appeal of indigenous Australian vegetables. The study could focus on a limited number of indigenous vegetable varieties and conduct focus groups to determine consumer perceptions relating to flavour, colour, ease of use, etc. (SYM13 – 21.08.14)

21. Investigate varieties and potential benefits of growing water plants and micro-leaves. Micro-leaves are highly nutritious, fast growing, can be grown in a relatively small area, do not require large amounts of inputs to grow, and can be grown in a closed environment. The study could determine the viability of growing micro-leaves and water plants in Australia, and provide an overview of the potential market. (SYM14 – 18.08.14)

22. Determine the viability of using Ethyl Formate as a biofumigant for export vegetables, and the potential to utilise the 'Vapormate' delivery system. (SYM32 – 22.08.14)

23. A benchmarking study comparing the Australian food safety and biosecurity response/action plan to other countries to ensure that the systems in place meet global best-practice standards. (SYM19 – 22.08.14)

24. A study on various soil substrates to identify their relationships with microbial activity, including analysing the effect of using food waste as a soil amender. The project would attempt to establish which soil substrates promote increased microbial activity, and quantify which substrates are most suitable for vegetable production. (SYM22 – 22.08.14)

25. A study to investigate and prioritise potential financing options available to growers seeking to invest in niche/underutilised vegetable varieties, such as indigenous vegetables. (SYM13 – 21.08.14)

26. A study looking into solar roofing and solar smart glass technology for use in greenhouses, to help growers better manage light and temperature variables in greenhouses. (SYM22 – 20.08.14)

27. A study looking at the viability of expanding protected cropping within Australia, with a particular focus on arid areas of the country. Identification of protected cropping methods capable of operating efficiently in arid conditions may allow crops to be grown in new areas. (SYM22 - 22.08-14)

28. A project analysing and comparing ventilation technologies available for use in storage and transport, focusing on maximising cooling times, minimising energy use, and minimising losses of produce along the supply chain. (SYM19 – 22.08.14)

29. The development of cost-effective, real-time 'temperature loggers' that growers can use to track product location and temperature. The project could include developing models for remote temperature tracking and report on implications of this technology for the supply chain. (SYM19 – 22.08.14)

30. A dedicated training program for supply chain and retailers about proper handling and storage of produce would benefit the industry. Upskilling these stakeholders could reduce produce lost within the supply chain, and also reduce consumer dissatisfaction with produce that is not displayed or presented at its highest quality. For example, retailers using ice under lettuce displays is a major constraint to shelf-life and negatively affects the consumer, retailer and ultimately the grower. (SYM19 – 22.08.14)

31. An image building campaign for the vegetable industry involving targeted communications to students and youth could promote horticulture as a successful and diverse industry and showcase the range of career paths available to students. The project could also generate qualitative data from student surveys and investigate root causes of the declining interest in horticulture in Australia.

32. The industry could investigate the potential to allow students, growers or their staff to be eligible for a degree or qualification based on the merit of their work experience, which may include a portfolio of achievements. This structure could be similar to the French model, the *Velidation des Acquis de l'Experience*. (SYM20 – 19.08.14)

    The Validation des Acquis de l'Experience is a procedure that allows any French educational institution to grant degrees partly or completely based on work experience. A portfolio of the applicants' achievements and work experience is presented to a committee at the educational institution, which then decides if the documents presented in the portfolio show work that merits partial credit towards a degree.

33. AUSVEG could run feature articles in *Vegetables Australia/Potatoes Australia* magazines promoting graduate opportunities in the vegetable industry. Articles may include interviews with successful graduates who are currently working in the industry, but should also try and link articles with universities and/or university students.

34. A study that outlines the benefits of vermiculture (worm farms) in vegetable production. Benefits of this process include reduced wastage, higher-value compost (or worm waste as a fertiliser), and enhanced hygiene and waste management practices. (SYM30 – 18.08.14)

35. A project for modelling nitrogen levels in sensitive horticultural areas, such as Queensland, Werribee and Virginia. (SYM36 – 20.08.14)

36. A project investigating the use of automated crop monitoring systems for vegetable growers (such as the 'Z-trap' technology) which may allow for 24 hour monitoring of crops. Increasing the rate at which crop monitoring data can be processed may allow growers to respond to pests and diseases faster and more efficiently, reducing the risk of crop losses. (Grower Breakfast – 20.08.14)

37. A project to investigate management strategies to deal with root rot in spinach. Spinach is grown more widely today than it was 10-15 years ago, and research on this crop up until this point has been limited. (SYM14 18.08.14)

38. A study to investigate the relationship between atmospheric CO_2 and soil carbon in potato tubers. Does increased atmospheric CO_2 have the potential to affect carbohydrate levels in tubers? (SYM8 – 18.08.14)

6.4 General comments regarding vegetable industry R&D

Also included in the delegate reports were general comments and notes regarding vegetable industry R&D.

- "Research projects must have strong grower/industry links."
- "We need to look at ways of including consumers within our R&D, i.e. integrate both producer and consumer material."
- "Ensure we identify (1) needs of farmers and (2) expectations or preferences of consumers."
- "Have we/do we measure adoption of our R&D investments?"
- "Extension is critical for the success of R&D projects."
- "The impact of R&D is not measured by what is read, but what is used."
- "Research that is or has involved growers directly is more relevant and has quicker and applied commercial outcomes."
- "Does Veggycation have references to papers to support health claims?"
- "Perhaps Veggycation could link case studies to the website."
- "Encourage working with partners on R&D projects to create more comprehensive R&D outcomes. Research that has involved vegetable growers is much more relevant and is implemented quicker (make it compulsory?)."
- "Ensure that projects are addressing the needs of growers and consumers, not the needs of researchers."
- "Extension is extremely important for the success of R&D projects, possibly increase time of projects in order to allow more extension which creates a higher uptake of knowledge, i.e. more grower success."

7.0 Discussion and Review

AUSVEG hopes that future missions can build on the success of this project, making improvements based on the suggestions and feedback in this report. Below is a summary of comments made by delegates, their impressions of the IHC speakers, and which speakers should be considered for future industry conferences (refer to **Appendix 5**).

- "Putting aside time for a comprehensive debrief (1-2 hours) with the entire delegation would have been extremely valuable in hindsight."
- "A more streamlined method of note-taking, such as an app, wiki or using tablets could be considered for future missions; however, reporting should remain consistent and succinct."
- "The International Society of Horticultural Science (ISHS) could have a greater focus on vegetables."
- "Oral presentations should relate directly to the users of the science, and not be presented in a vacuum."
- "The presentations could have been more grower focused."

Below is some feedback from delegates about the benefits to industry of attending the Congress.

- That more students should be involved with future delegates.
- A good mixture of ages, backgrounds, current employment and interests made the exercise more valuable for delegates.
- These missions could be an opportunity to build stronger relationships with university institutions and students.
- The Congress provided a means of promoting flagship industry projects (such as the robotics project) to an international audience.
- The Congress provided an excellent networking opportunity with national, international and across-industry stakeholders.

7.1 Survey results

Delegates were asked to complete a short survey following their attendance at the IHC2014. Delegates were asked to reflect on how future delegations may be improved, as well as reviewing how valuable the experience was for the vegetable industry.

Survey Question	**Mean Score (of 10)**
Q1. On a scale of 1 (none) – 10 (large amount), what level of new knowledge or understanding did you gain after attending the IHC2014?	7.63
Q2. How confident are you that knowledge gained from the IHC2014 will contribute to positive development of the vegetable industry?	7.38
Q3. How relevant to the Australian vegetable industry were the Symposia that you attended?	6.5
Q4. How satisfied are you with the way the delegation was organised by AUSVEG? Flights, accommodation, meals etc.	9.69
Q5. What could have made your experience at the IHC2014 more beneficial to you?	***See Appendix 5**

Q6. If you have any other feedback about the IHC2014, please include it in the box below.	***See Appendix 5**

Figure 5 Post-Congress delegate survey results showing satisfaction levels of the experience (16 respondents).

7.2 Feedback

The following feedback was provided by the IHC delegates.

"This sort of opportunity only comes along rarely and it was brilliant the way AUSVEG recognised the potential and coordinated such a highly skilled but extremely practical team. It was great to meet all of you and have time to discuss everyone's different background as well as the congress topics."

"I'm suffering post congress depression, university seems so dull now. I'd like to thank you for listening to me in discussions and valuing my opinions. I was pretty nervous beforehand that no one would listen to me because I was student with little knowledge of the industry, but I never felt like that. It was really good to meet everyone. Thank you Tim, Dimi and Callum, I don't think you could have done a better job in organising it."

"…a big thanks to the AUSVEG team for a well organised week that was of great value both in the job we had to do, but for the ongoing benefits out of it including new knowledge and new professional friendships."

"Congratulations for the initiative and idea for the project, to Richard and AusVeg for following through the idea, and Dimi, Callum and Tim for exceptional organisation and proficiency."

"…I would also like to pass on my thanks to Tim, Callum and Dimi who did a fantastic job."

"It has been a great week for me as well at IHC2014… I really enjoyed the week together both at professional and personal levels, although many of you I haven't met before. I truly enjoyed your company, conversation and stimulating discussion throughout."

"After listening to many sessions, I have felt that Australia as a whole can proudly stand tall among peers in terms of technological advancement and innovation. We can grow a lot of crops and are self-sufficient with limited resources we have, and help feeding other nations. We have got so much to go for to the world community. Surely, R+D possibilities that we got out of this congress will guide us to the right course and future success. Thank you Tim, Callum and Dimi for your organisation skills and friendship. It is good to see such talent young people within AUSVEG."

"I too would like to add to the chorus of praise for the organisation and efficiency of the week that was. Tim, Dimi and Callum, you made the week seem like it ran itself (which I'm sure it didn't – there must have been so much that could have gone wrong…). To AusVeg and HAL, a sincere thankyou for allowing me the opportunity to attend such an amazing week, it was far more intense than I had imagined, and the quality/focus/intensity of the research presented certainly varied a bit, but there was literally something

for everyone at the congress. It just shows the necessity of gathering a diverse group to attend such events."

"To the delegates, great to meet you all, and thank you for the friendly and open atmosphere which no doubt added to the quality of group debates and meetings."

"Thank you all for the opportunity to become part of a unique network of passionate industry people and look forward to keeping in touch. A big thank you to the Ausveg team for making it all happen and to HAL for supporting this event."

7.3 Student supported position

The project also funded a position for a university student to attend the Congress as part of the delegation, an initiative designed to strengthen the industry's relationship with students at the tertiary level. The student, Emily Pattison, was (at the time of the Congress) enrolled in a Bachelor of Agricultural Science at the University of Queensland (Gatton).

Having a university student as part of the delegation added depth to the group and also contrasted with the other delegates who already had professional experience in the industry. It was incredibly valuable to have Emily share her perspectives on the industry - as a student she had a broad understanding of a range of R&D topics and industry issues. Making additional positions available to high-calibre and motivated students in future delegations has the potential to be very beneficial, and this was supported by feedback from the delegation. AUSVEG recommends that students that may be selected for future missions should:

- Have completed at least one year of tertiary education in a relevant Agricultural/Horticultural degree;
- Demonstrate an interest in the vegetable industry; and
- Be willing to engage with new ideas and be an active communicator.

Following the Congress, AUSVEG sought feedback from the student given that the declining interest among horticultural students in the vegetable industry is a significant issue. A series of short questions highlighted some key issues relating to how students perceive the viability of careers in the vegetable industry. Full responses to the questions are included in **Appendix 7**). Key feedback included:

Q1: What was your overall experience of the IHC2014, was the information presented relevant?

"The IHC was a very enjoyable experience for me. I felt like it gave me a lot more perspective on the industry, and a better understanding of what a future in agriculture looks like."

Q2: How was the trip run and did the delegation function as a team?

"The trip was run really well - I don't think I can really suggest any improvement for that. The delegation was great as well. It was really good to get to know everyone and work with them on collaborating ideas.

Some people were quite outspoken and not very good at listening to other ideas, but I guess that's pretty normal."

Q3: How has this experience shaped your future plans as a scientist, has the research made you more aware of the prospects of the vegetable industry?

"I am now interested in a career in the vegetable industry! I am just starting casual work at E E Muirs & Sons, which is an agricultural chemical dealer which specialises in vegetables in the Lockyer Valley… I think it was more the plenaries rather than the research that made me aware of prospects in the vegetable industries... It also made me realise that research isn't just conventional science, there is also so much extension and market research which is just as important."

Q4: How do you see the communication between industry and educational centres at the moment and what opportunities/barriers does this provide for students trying to decide a career;

Q5: What improvements can be made between the industry and educational centres and how would this improve uptake of students studying horticulture? (Answered together)

"There is a pretty high drop-out rate of agriculture students at the moment and I think that it can be contributed towards the fact that students can't see the usefulness in their degree and they can't see it taking them to the kind of job they want to be in."

"At universities students are only really exposed to university research and people who have made their career in agriculture through that avenue. It's not really what a lot of students want to do."

"At the moment, there are a lot of graduate programmes starting up, but I think the problem is really before graduating. I think there needs to be more industry communication towards students who are in their lower years of university who need something to aim for… I think this is a good opportunity to recruit students into horticulture."

8.0 Conclusion

Project VG13707-*Vegetable industry's participation at the International Horticultural Congress, Brisbane, August 2014* was an unprecedented undertaking for the industry. The initiative resulted in an array of benefits, and provided a model for future projects. Benefits included:

- Extensive networking with international and domestic horticultural stakeholders;
- The strengthening of professional relationships and communication across the Australian vegetable industry (between delegates);
- Education: a greater understanding and awareness of a range of international horticultural R&D;
- The benchmarking of Australian vegetable industry R&D investment relative to other industries and countries;

- The generation of new R&D ideas and concepts for future investment;
- Strengthening the industry's relationship with higher-education institutions through the inclusion of a student in the delegation;
- The delegation publicly demonstrated the Australian vegetable industry's willingness to engage with the international research community and the proactive approach taken to industry development.

A range of R&D investment concepts were generated as a result of this project (section **6.3**), which will be progressed to the relevant vegetable industry Design Teams following consultation with HAL. In addition to new R&D concepts, the Congress allowed the delegation to benchmark the Australian vegetable industry's investments against other horticultural industries. Symposia demonstrated that the Australian vegetable industry's R&D investment was either on-track or ahead of other industries. The benefits listed above, in conjunction with the feedback from the delegates, demonstrate that the mission to the International Horticultural Congress was incredibly worthwhile for participants and the Australian vegetable industry.

9.0 APPENDICES

Appendix 1 Preferred Delegation Composition List for the IHC

Category	**Number of positions**
Vegetable Technical Advisory Group	5
Vegetable Industry Advisory Committee	3
Market & Value Chain Development Design Team	3
Farm Productivity, Resource Use & Management Design Team	4
Consumer Alignment Design Team	3
Horticulture Australia Limited	1
AUSVEG	1
University Student	1
Vegetable Industry Agronomists	3

Appendix 2 Sample of semi-structured itinerary (Tuesday)

TUESDAY 19 AUGUST 2014

Session 1 08.30-10.00	**Plenary 3 and 4: Plants for Health (GH)**				
	All delegates				
Session 2 10.30-12.30	**SYM30: Horticultural Crop Production with Transformed Organic Wastes (P5)**	**SYM20: Training Students and Growers (P7)**	**SYM14: Designing Production Systems for High Value Vegetables – Production (P9)**	**SYM1: Breeding and Biofortification for Human Health (B2 and B3)**	**ANY SESSION**
Notetaker	*Surachat Vuthapanich* Sean Richardson Stuart Grigg Michael Radcliff Jason Woskett	*Emily Pattison* Jeff McSpedden Tony Kourmouzis Len Tesoriero John Brent	*Owen Rich* Darren Hicks Robert Hinrichsen Tim Shue	*Greg Owens* Bruce Scott Andrew Craigie Russell Fox	Byron de Kock Rohan Prince Eddy Dunn Andrew Meurant
Session 3 13.30-15.30	**SYM30: Soil Amendment with Organic Wastes (P5)**	**SYM20: Horticultural Education into the Future (P7)**	**SYM14: Integrating Production Methods for High Value Vegetables (P9)**	**SYM1: Pre/Postharvest Factors Affecting Phytonutrients (B2 and B3)**	**ANY SESSION**
Notetaker	*Rohan Prince* Owen Rich John Brent Russell Fox Tim Shue	*Robert Hinrichsen* Emily Pattison Bruce Scott Greg Owens Byron de Kock	*Michael Radcliff* Andrew Meurant Jason Woskett Len Tesoriero	*Darren Hicks* Jeff McSpedden Eddy Dunn Surachat Vuthapanich	Stuart Grigg Tony Kourmouzis Andrew Craigie Sean Richardson
Session 4 1600-1700	**SYM23: Pest and Disease Resistance Breeding (M3)**	**SYM20: Horticultural Training around the World (P7)**	**SYM15: Economics and Marketing (BA)**	**SYM12: Sustainability: Not Just a Buzzword for Grants (S1)**	**ANY SESSION**
Notetaker	*Eddy Dunn* Andrew Craigie Tony Kourmouzis Emily Pattison Len Tesoriero	*Andrew Meurant* Stuart Grigg John Brent Russell Fox Tim Shue	*Jeff McSpedden* Darren Hicks Rohan Prince Surachat Vuthapanich Byron de Kock	*Bruce Scott* Michael Radcliff Sean Richardson Robert Hinrichsen	Jason Woskett Greg Owens Owen Rich

Appendix 3 Delegate reporting sheet template – for symposia summaries

IHC 2014 Symposia – Delegate Summary Sheet (AUSVEG)

Date:	**Symposia Number (e.g. SYM8):**
Room/Location:	**Time (start/finish):**

Names of delegates:

1 (Lead note-taker)	
2	
3	
4	
5	
6	

*Lead note-taker is responsible for returning the completed form to Tim Shue.

Summary of key points (include relevant speakers):

Possible R&D concepts:

Please return the completed form to Tim Shue (tim.shue@ausveg.com.au / 0404 799 166)

Monday 18th August 2014

10:30 – 12:30

SYM14 – Multiple Values – A New Paradigm in Vegetable Quality
Delicious vegetables must come before nutritious vegetables. Even if a food has higher antioxidant content, it will only be eaten if it also tastes good. Innovation must include the entire industry and marketing must play a large part in innovations.

SYM11 – Pre-Harvest and Post-Harvest Factors Affecting Produce Quality
Many industries determine ripeness of the produce in-field, prior to harvesting, to ensure quality of produce at the market level. Higher stress can induce sugar production in plants, and therefore produce can have a sweeter taste and a better colour if deliberately exposed to stress.

SYM20 – Challenges in Horticultural Education
Students don't see a future in the horticulture industry. This is partly due to courses shifting away from production horticulture and more to environmental fields. There must be an influence on holistic learning that teaches the variety of disciplines and practical experience that should be necessary for a degree. Industry needs to have a closer relationship with educational centres and institutions.

SYM21 – Consumer Choice
When purchasing produce, many consumers are influenced by physical appearance rather than by value, and what they think will be more healthy/easy to use. In order to promote vegetables to children/consumers, the entire supply chain must get involved, including supermarkets. Many food perceptions are not created due to the industries' marketing; the internet influences consumers a lot more these days.

SYM18 – Integrated Pest Management
A newly developed extra-sticky trap has proved useful in capturing fruit-spotting bugs. 22 traps per ha are required, and need to be changed every one to two weeks. Up to 15 types of thrips are found in green bean crops. Day seven of flowering is crucial to manage thrips, as damage is caused from days seven to ten.

SYM30 – Transformation of Organic Waste
As food and production demand increases, there is an increasing use of soil-less plant production systems. There is very little research and documentation of recycling these 'substrate' media and how they can be effectively be reused without affecting commercial yields and increasing pest and disease issues.

13:30 – 15:30

SYM8 – Resource Sustainability and Climate Change

Growers must be careful where data comes from. Misconceptions and variability of information about climate change are common. Climate change has been documented, and growers must do what they can in order to control emissions by planting ground cover crops, minimising excess fertiliser and centralising cool rooms. Some ground cover types were discussed, including using recycled council green waste.

SYM20 – Horticultural Knowledge Transfer Methods
Prospects for horticulture indicate the need for a trained/educated workforce, yet enrolments for horticulture undergraduate degrees continue to slide, for example, in 2001 Australia had 176 graduates; in 2012, it had 40. The industry is therefore reliant on agricultural graduates, but the horticulture industry is not seen as attractive to youth. Actions required: facilitate entry of youth into horticultural and agricultural secondary and tertiary courses; demonstrate there are career options; foster an image that makes horticulture attractive to youth; and employers need to find a way to allow employees to build equity.

SYM14 – Designing Production Systems for High Value Vegetables
Nitrogen inhibitors have shown some reduction in nitrous oxide emissions after nitrogen application. NMPP (entec) was used to reduce nitrification of applied nitrogen. Fusarium oxy has been found recently in spinach in Australia. Root rot complex in spinach causes significant crop losses as well as up to four diseases.

SYM11 – Targeting Produce with Enhanced Health Properties
Marketing using health benefits is justified. Growers must know the consumer palate and expectations. Genetic mapping is also an important resource to use in order to ensure breeding is more efficient in the future.

16:00 – 17:00

SYM11 – Innovation in Consumer Guided Product Enhancement
There should be an increase in the number of consumer sensory panels rather than expert sensory panels. The consumers' needs must be identified in order to prioritise future breeding projects. Identifying consumer markets and challenging the traditional markets perceptions is an important way of moving the industry forward.

SYM4 – Impact of Asia Pacific Horticulture
By treating coconut fruits with fungicide before transport, fruit loss significantly decreased. Fruit rot, and therefore excess ethylene production, was minimised, and the spreading of fruit rot was also minimised. This has possible applications in other skin protected vegetables.

Tuesday 19th August 2014

10:30 – 12:30

SYM30 – Horticultural Crop Production with Transformed Organic Wastes
Looking at the use of using house fly larvae to process raw chicken manure into organic fertiliser, houseflies can process raw manure to fertiliser in 7-10 days. Compost tea can be used as a

fungicide to combat against powdery mildew. The efficacy of compost teas are variable and depend on the ingredients and the timing and frequency of application.

SYM20 – Training Students and Growers
There has been a positive response to AUSVEG's capacity building efforts from growers and academics alike, because it is important to ensure communication of R&D. Extension programs are an effective and important method of disseminating R&D and should focus on details, information delivery, who needs to know it, and who should know it.

SYM14 – Designing Production Systems for High Value Vegetables – Production
When there is variability in crop sizes there is a reduction in value of the crops at the market level. Systems are being developed to increase yield with limited resources, for example, by using gravel bed hydroponics. The concept behind optimum plant densities for lettuces to maximise yield can be applied for different plants.

SYM1 – Breeding and Biofortification for Human Health
Detoxification enzymes, glucosinolates and isothiocyanates are found in broccoli. Efforts to increase sulforaphane through breeding in UK and US found more in broccoli sprouts than in wild broccoli. This nutrient rich broccoli variety is called Beneforte.

13:30 – 15:30

SYM30 – Soil Amendment with Organic Wastes
The opportunity to look at alternate markets for harvesting by-products/waste could be considered (for example, as health food products or additives for vitamins or used in juices) but economic analysis would need to look at the benefit of turning waste back into soil as oupposed to removing and processing. Benefits include reducing disease inoculums in soil from waste leftover.

SYM14 – Intergrating Production Methods for High Value Vegetables
It was hard to find relevance in speakers. Language was too technical and too specific to be applicable.

SYM1 – Pre/Postharvest Factors Affecting Phytonutrients
Phytonutrient levels in produce can be manipulated, but it is usually to the detriment of the yield or quality. Most phytonutrients actually increase shelf life, therefore, the "healthiest" vegetables last the longest. Certain LED light combinations can increase the Vitamin C levels of tomatoes.

16:00 – 17:00

SYM23 – Pest and Disease Resistance Breeding
There have been some significant resistant varieties of capsicum that have been developed, but these are still in the initial stages and not ready to be released. When there is a widespread and damaging crop outbreak, traditional basic breeding techniques to find a resistant species are the most effective.

SYM20 – Horticultural Training around the World

The horticultural industry network (IDOs) is an innovative model for capability building in Victoria. A series of projects have been conducted that have helped young Queensland growers and horticultural workers.

SYM12 – Sustainability: Not Just a Buzzword for Grants
Peat is not a sustainable substrate for any vegetable production and the cost is expected to rise, so an alternative substrate needs to be found. Some alternatives include sugarcane and molasses. Looking at alternatives to incandescent lighting in protected cropping production systems, LED lighting has its benefits in terms of selective wavelengths of light, but the economics have not been explored.

Wednesday 20th August 2014

10:30 – 12:30

Grower Breakfast
Growers discussed automated bug checking technology which lures and traps bugs, where sensors then detect the type of bug. The in-field automated monitoring technology is known as a "Z-trap". They also discussed managing climate in which plants grow under tunnels, which improves plant growth and reduces pest and disease pressures.

SYM36 – New Cultivars for Farmers and Consumers/Integrated Crop Management
When conducting R&D, working with partners can ensure that the knowledge is relevant and up-to-date. Research that does or has involved farmers is more relevant and can produce quicker applied outcomes. The impact of R&D should not be measured by what is published but by what is actually implemented and this ensures that communication/extension projects are working.

SYM13 – Opening/Germplasm and Seed Systems
Indigenous vegetables should be looked at as innovative varieties for alternative vegetable production. Climate change is an important issue and there may be indigenous vegetables that are less susceptible than commercially grown vegetables.

SYM25 – GMOs in Horticulture: Past, Present and Future
Many positive benefits of GMOs are not understood by the consumers: reduced tillage, lower CO_2 emissions, and lower residues. The public do not understand the difference between GM, GMO and GE, and this lack of knowledge is influencing their opinions.

SYM18 – Epidemiology & Detection of Plant Pathogens
Bacteria can be innoculated into plants by pricking the leaf and infecting plant tissue. This method is used to positively ID disease and confirm plant infections. Pathogens transmitted by insect vectors may also require different food sources to survive and proliferate within the host insect. Pest and disease issues can be influenced by native and wild vegetation, so growers should understand regional influences on issues they may be facing. Clean seed lots and plant tissue are very important in preventing virus spreading around the world.

13:30 – 15:30

SYM22 – Innovation and Developments in Environmental Control
In order to increase participation in all facets of the vegetable industry R&D extension programs and workshops must be held with undergraduate students and young researchers. Some possible techniques for minimising the impact of vegetable production on the environment include utilising old buildings and converting them into high-production protected cropping systems.

16:00 – 17:00

SYM22 – Energy Use and Optimisation
Heat exchangers minimise the need for heating or cooling air in the extreme months by running tubes underground and equalising the temperature. By keeping the air in a greenhouse at a consistent humidity, the risk of disease is dramatically reduced. Black solar-panelled water heaters/air heaters can dramatically increase energy efficiency in protected cropping systems.

SYM13 – Germplasm and Seed Systems
A number of countries are producing their own mother seed stock library; this is useful for when the production seed stocks have become too far interbred and need to revert back to the original genetics. When growing plants for seed production, leave plants in the seed trays for longer, as this stresses them and encourages earlier seed production.

SYM36 – Integrated Crop Management & Value Chains
A nitrogen budgeting and measurement tool which utilises the APSIM modelling system could also be applicable to vegetables. Extension and education is a must for any adoption of R&D. What will be the effect of climate change on pest and disease pressures in horticulture/agriculture? There are predicted to be both positive and negative outcomes, but more dominantly negative effects, as the life cycle of many pests and diseases will shorten with increased degree days or heat units.

SYM25 – GMOs and the Consumer
The public don't often think much about GMOs, and the type of GMO affects people differently (i.e. plant genes vs. animal genes). Older women are typically non-proponents of GMO, with those who support science more likely to support GMO.

Thursday 21st August 2014

10:30 – 12:30

SYM5 – Remote Sensing
Reflectance indices can be used for the detection of water stress in greenhouse plants. Using infrared thermal imagery at a lower resolution renders accurate results for water stress monitoring at a fraction of the traditional price.

SYM1 – FAV for Eye, Brain and Sports Performance
Lutein and Zeaxanthin are important carotenoids that are found in a number of vegetables and are attributed to minimising age-related macular degeneration. Certain vegetable wastes, peel and stalks can be used in the production of breads in order to create a healthier bread and also

minimise waste material from vegetable production. These products, which are consumed regularly by the majority of the population, are a possible vehicle for nutrition consumption derived from vegetables.

SYM19 – New Post-harvest Treatments
Post-harvest science is an enabler for the exporting of produce. This field of science can be further broken down into dealing with hygiene factors that need to be met to overcome barriers to trade (such as being pest/residue free), and creating points of difference such as produce quality, freshness, and nutritional value.

13:30 – 15:30

SYM13 – Sustainable Production/Postharvest and Commercialisation
Legume pod borer in snake beans can cause up to 80% crop loss. A number of assessed biopesticides, parasitic insects and standard pesticides were all effective; however, a combination management system was the most effective. Indigenous vegetable growers in northwest Vietnam looked into value chain improvement and market development. Promotional recipe cards were an effective way of launching a new variety in these regions.

SYM1 – Antioxidants, Inflammation and 'Super-Fruits'
Veggycation was mentioned as a very important resource for growers and producers wanting to promote the scientifically proven health benefits of their products. According to new labelling regulation, anti-oxidant claims cannot be made and the claims are obsolete. Self-substantiated claims are fine to use for vegetable products; however, growers must be able to sell self-branded product in order to design their own packaging.

16:00 – 17:00

SYM19 – Postharvest Quality and Consumers
The presentation discussed non-invasive detection of internally defective fruit and nuts by using various technologies. Consumers are still very price-sensitive when it comes to higher value products; these products must still be price competitive.

SYM13 – Postharvest and Commercialisation
The presentation discussed modified atmosphere packaging to increase shelf life and noted that the Australian industry is already on track. There is a lack of engagement between the Australian universities and the industry at a ground level, which causes a shortage of adequately skilled graduates.

Friday 22th August 2014

10:30 – 12:30

SYM32 – Biosecurity, Quarantine, Pests and Market Access
New Zealand infestations provide learnings for the Australian biosecurity model. With regards to biosecurity, there must be a single coordination point, as well as short, medium and long term

control plans, and growers must always be ready for the next incursion. Methyl Formate biofumigation is a readily used method for eradication during the transport process in other countries.

SYM19 – Post-Harvest Knowledge for the Future
Packaging of vegetables is complex, and must balance airflow and cost of materials while being robust enough to fit into the current supply and cool chain. Temperature data, which affects shelf-life, needs to be available in real time. There are mathematical formulas available to predict shelf-life for products.

13:30 – 15:30

SYM5 – Plant Responses to Drought and Salinity
Some research is being conducted into cross-breeding desert plants with traditional vegetables to minimise water use. Lowering the water requirement can also minimise salt damage in areas where high salt content in irrigation water is prevalent.

SYM 13 – Nutrition and Consumption
Within the vegetable industry, indigenous vegetables have had minimal R&D investment to look at the health benefits from consumption of indigenous vegetables.

SYM1 – Isolation and Characterisation of Bioactive Compounds
There are techniques being developed to make it easier to identify biological active compounds in fruit and vegetables.

16:00 – 17:00

SYM22 – Plant – Greenhouse Interactions
Organic matter can be used to increase soil health and soil organic content. A healthier soil content results in increased yields and higher nutrient content. By using waste products, organics farmers can minimise waste and potentially decrease costs of buying substrates for protected cropping systems.

Appendix 5 Respondent answers to survey question 5 and 6

Q5 What could have made your experience at the IHC2014 more beneficial to you?

- A little more freedom to cover some different sessions, but I fully understand why the decision was made to have multiple people at each session.
- I don't think there was anything I missed out on!
- More symposia focussing on 'real' issues we encounter every day. Getting researchers out in the paddock, talking to growers would help.
- Not our issue but title of presentation in general did not reflect the presentations that were made.
- Can't think of anything really given the sheer size and scope of this conference - that made it difficult to get to all the topic/sessions I was interested in. I'd be interested to see the ideas and feedback from some sessions that other delegates attended.
- Have few hour group discussion in the quiet restaurant over dinner.
- The whole event was very good, personal satisfaction high. Took from it what the IHC had to offer. Thank you.
- Not having any preconceived expectations before attending.
- Maybe to include smarter ways of recording notes, for example; an app to type notes to etc.
- More time, it's a busy week! Hard to top really. Thanks so much for the opportunity.
- Possibly a more organized debrief.
- If I had attended all of the days, rather than only a couple.

Q6 If you have any other feedback about the IHC2014, please include it in the box below.

- The delegation was an excellent mixture of ages, backgrounds, current employment and interests and was very clearly and professionally directed for the week of the Congress.
- My personal feeling is that this was a very worthwhile exercise. No doubt costly, but the diversity of the group selected and their enthusiasm throughout the week was clear to see. I suspect getting additional information from participants has a 2-3 week window of opportunity....
- IHC need to check the presenters material before putting them on the program. Some presenters need tuition on how to present!
- Just that I'm grateful for the opportunity to be part of this event and a big thanks to Tim and the Ausveg team for their professionalism and company.
- Feedback we could offer to the IHC was really around the logistical elements of the conference. Speaker management ranged from good to terrible, suggest that we improve suggest ways of being able to tighten that up a little. Titles of the actual paper and presentation could be more accurate. Suggest that as the papers are accepted then feedback and critique need to be more closely considered.
- Really informative. Although it really highlighted the calibre of scientific research and capacity building projects undertaken in Australia.

Appendix 6 IHC2014 article in *Vegetables Australia* magazine, September-October 2014

Photographs by Stefan Daniljchenko.

Local vegetable industry represented at IHC 2014

More than 3,000 delegates from over 100 countries attended the International Horticultural Congress in Brisbane.

AUSVEG, along with a contingent of Australian vegetable growers and industry members, recently attended the 2014 International Horticultural Congress (IHC) in Brisbane.

The event was held at the Brisbane Exhibition and Convention Centre from 18-22 August and attracted over 3,000 delegates from more than 100 countries. It is only the second time the Congress has been held in the southern hemisphere in its 150-year existence.

A diverse group of 25 industry members was selected to represent the Australian vegetable industry at the event and consisted of growers through to agronomists, a student and members of the supply chain. The delegation was formed as part of a project funded by Horticulture Australia Limited (HAL) using the National Vegetable Levy and matched funds from the Australian Government (Project Number: VG13707).

Throughout the week, the group attended a range of symposia, workshops and other events that fell in line with the theme of the Congress: Sustaining Lives, Livelihoods and Landscapes. The delegates listened to presentations and research from some of the world's leading experts in horticultural fields and discussed potential topics that could be used for future R&D projects in Australia. Delegate feedback and key points were also collected.

AUSVEG would like to thank the enthusiastic group of industry members for taking the time to attend the Congress and participate in the many discussions that were held throughout the week.

Appendix 7 Student feedback post-Congress

1 - What was your overall experience of the IHC2014, was the information presented relevant?

The IHC was a very enjoyable experience for me. I felt like it gave me a lot more perspective on the industry, and a better understanding of what a future in agriculture looks like. The information was all relevant to me as a student, but not always for ausveg. A lot of the talks were very specialised to their specific commodity. The vegetable industry talks, while they were relevant, showed that Australia already has a great system for R&D in vegetables.

2 - How was the trip run and did the delegation function as a team?

The trip was run really well, I don't think I can really suggest any improvement for that. The delegation was great as well. It was really good to get to know everyone and work with them on collaborating ideas. Some people were quite outspoken and not very good at listening to other ideas, but I guess that's pretty normal.

3 - How has this experience shaped your future plans as a scientist, has the research made you more aware of the prospects of the vegetable industry?

I am now interested in a career in the vegetable industry! I am just starting casual work at E E Muirs & sons, which is an agricultural chemical dealer which specialises in vegetables in the Lockyer Valley. I currently have a job in capsicum research for DAFF, but I took this job because I am interested in getting to know more vegetable other than just capsicums. I am looking at doing probably agronomy. I think it was more the pleneries rather than the research that made me aware of prospects in the vegetable industries. There is such an emphasis on eating fruit and vegetables at the moment that the vegetable industry is pretty well set to increase. It also made me realise that research isn't just conventional science, there is also so much extension and market research which is just as important.

4 - How do you see the communication between industry and educational centres at the moment and what opportunities/barriers does this provide for students trying to decide a career? and 5 - What improvements can be made between the industry and educational centres and how would this improve uptake of students studying horticulture? (I'll answer these two questions together)

There is a pretty high drop out rate of agriculture students at the moment and I think that it can be contributed towards the fact that students can't see the usefulness in their degree and they can't see it taking them to the kind of job they want to be in. At universities students are only really exposed to university research and people who have made their career in agriculture through that avenue. It's not really what a lot of students want to do. At the moment, there are a lot of graduate programmes starting up, but I think the problem is really before graduating. I think there needs to be more industry communication towards students who are in their lower years of university who need something to aim for. A lot of students in their 1st and 2nd year still don't really know what they want to do when they leave university and I think this is a good opportunity to recruit students into horticulture.