

Final Report

VegNET – Wide Bay Burnett (Bundaberg Fruit and Vegetable Growers)

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Bundaberg Fruits & Vegetable Growers

Project code:

VG15040

Project:

VegNET – Wide Bay Burnett (Bundaberg Fruit and Vegetable Growers) VG15040

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Summary

VG15040 VegNET Wide Bay Burnett is funded by Hort Innovation using the Vegetable Industry levy and funds from the Australian Government. It is coordinated nationally by Applied Horticultural Research.

Bundaberg Fruit and Vegetable Growers (BFVG) role in the three (3) year project will be to disseminate and distribute R&D outcomes and opportunities by way of;

- One-on-one grower engagement
- R&D specific workshops and other extension activities
- Bi-Monthly newsletters
- Review and dissemination of regionally specific R&D report information

BFVG's VegNET Industry Development Officer (IDO) worked with regional vegetable producers to determine production gaps and relevant opportunities for on-farm improvements whereby production capacity and capability may be enhanced.

Public summary

The National Vegetable Extension Network (VegNET), Wide Bay Burnett VG15040 Project was the Australian Vegetable Industry's key source of R&D Information for the Wide Bay Region of Queensland. Aimed specifically at vegetable growers and Industry collaborations in the Region this program provided a link between current R&D Activities, outcomes and Resources to these key stakeholders. This program was successfully delivered in the Wide Bay Region of Queensland during 2016-2019 and utilised both traditional and non-traditional extension methods including email newsletters, blogs, magazine articles, workshops, field days, webinars, bus tours and networking events.

The program successfully connected with current R&D programs bringing Industry researchers and contacts to the Region to disseminate their programs and results and supported the adoption of best practice to strengthen the vegetable production region. These events were well attended and generated interest as knowledgeable and key networking events. Another key component of the program was one-on-one extension with vegetable growers which helped shape program extension activities. This program has increased grower knowledge of R&D programs and outcomes and has provided insight to potential areas of funding requirements.

As one of ten national VegNET programs the Wide Bay Burnett Industry Development Officer (IDO) participated in regular Program teleconferences and met minimum yearly with the entire program of IDO's to remain abreast of issues affecting each vegetable growing region and to link with other programs of similar interest. The Wide Bay Burnett IDO particularly kept in close contact with the Lockyer Valley IDO and Bowen Gumlu IDO as together these three programs directly targeted Queensland Vegetable Producers and held similarities.

Keywords

Vegetable, Extension, Wide Bay Burnett, Industry Development Officer, Vegetable Industry, R&D, VegNET

Introduction

From 2016-2019 the National Vegetable Extension Network Wide Bay Burnett was the Australian Vegetable Industry's key source of R&D information and dissemination to vegetable producers in the Wide Bay Region of Queensland. The National program was established after it was identified there was a missing link between Vegetable R&D Programs, their outcomes and the producers that benefit most from them.

The aim of the program was to increase the knowledge of R&D information and programs and support the adoption of best practice to strength the vegetable production region of Wide Bay Burnett. In addition to vegetable producers, agronomists and Industry contacts were also targeted by the program as key reference and contact points for producers to assist with adoption and practice change.

As one of ten key production regions for dissemination of the National program the Vegetable Industry Development Officer (IDO) was guided by the wider National program and connected regularly with other program IDO's to share and disseminate knowledge that was of interest to local producers. The program successfully utilised numerous communication methods to target vegetable producers and Industry supporters.

Key components of the program included regional R&D workshops and field days that attracted researchers to the Region. These key networking events brought growers together to discuss industry issues and opportunities with other growers and supporters. Another key component of the program was one on one extension with vegetable producers which helped guide the programs extension activities.

Due to various reasons the Wide Bay Burnett Program had three people in the IDO position throughout the project life. In each instance the IDO's moved onto different positions and the role was refilled with minimum disruption to the project. The Project Manager Bree Grima has remained in position for the project life.

- Daryl Anastasi held the IDO position from the project start in April 2016 until March 2017;
- Michelle Haase held the IDO position from May 2017 to 7 September 2018;
- Adam Harber held the IDO position from 17 September 2018 until project end 19 April 2019.

The Wide Bay Burnett IDO was the central contact point for vegetable producers, Industry supporters, researchers and other stakeholders seeking industry information, R&D outcomes and R&D requirements and built trusted relationships with each stakeholder.



IDO Daryl Anastasi



IDO Michelle Haase



IDO Adam Harber



IDO Daryl Anastasi with Project Leader Bree Grima and Industry Colleague Veronica Chapman at the National Biological Farming Conference.



IDO Michelle Haase with Growers and Industry at the successful Robots, Drones and Sensors Expo.

Methodology

The National Vegetable Extension Network was run by a national coordinator at Applied Horticulture Research who was the link between the ten Vegetable Production Regions of which the Wide Bay Burnett (WBB) was one such Region. The Coordinator was the central contact point for the IDO's to share program updates for the central Vegetable Extension Network Newsletter. The Coordinator also organised teleconferences and yearly face-to-face events for the IDO's and produced a central database for current and completed R&D vegetable programs which the IDO accessed to assist in tailoring extension material for the region.

The IDO for Wide Bay Burnett became the direct link between vegetable growers and R&D information and was the first point of contact for industry stakeholders seeking news, information and connection to vegetable producers. The Wide Bay Burnett IDO worked hard to develop trust and confidence from the region as a reliable information source and to provide the opportunity for producers to share their views on current funded programs and potential projects.

The IDO reported to Hort Innovation on program activities and achievements and collaborated with the Queensland IDO's to share news and opportunities. Annual meetings were held with all the IDO's along with regular teleconferences to discuss program outputs and upcoming events. Annual Operating plans were developed and adjusted each year throughout the three-year program, and these guided the IDO on their activities. Gantt charts predicted program outputs and activities such as proposed R&D workshops. The implementation of these plans was reported to Hort Innovation in six monthly milestones reports which discussed program outputs, activities and regionally specific issues which may have contributed to program changes.

A core component of the program was one-on-one extension, workshops and field days in the Region. Using the extensive Bundaberg Fruit and Vegetable Growers Cooperative (BFVG) database of growers, agronomists, researchers and supply chain representative's information regarding the VegNET program was disseminated including news of upcoming events. This database was continually updated to ensure as many contacts in the Wide Bay Region were informed as possible. BFVG also asked other industry contacts to share upcoming events and contributed to their central event databases hence expanding the reach of information delivery.

The Wide Bay Burnett IDO utilised numerous platforms of communication including traditional and non-traditional extension activities. The average age of the producer in the Wide Bay Region is 44 years and with limited connectivity in some regions it was important to ensure all communication methods were utilised included phone, SMS, email, newsletter, hard copy and blogs.

Outputs

The project has exceeded all milestone outputs and deliverables including workshops, grower one-on-one engagement and field days. The program has effectively engaged with total 1254 participants during the three-year program. This was broken down into 211 people in year 1, 297 people in Year 2 and 746 in year three. These numbers highlight program engagement grew during the three-year period and held effective engagement activities. These numbers reflect the actual number of participants at events such as workshops, field days, Industry events, bus tours and grower one-on-one engagements and does not include engagement via communications and social media tools (i.e., does not include number of 'views' or 'likes' from content posted online).

The following deliverables were achieved:

1. Delivery of Annual Workshops (minimum of two per year)
 - a. Focussed workshops with new and emerging RD&E outcomes
 - b. Delivered in Bundaberg/ Maryborough/ Gympie
 - c. Presence at Bundaberg Agrotrend event
2. Participation in vegetable industry events
 - a. Professional development activities
 - i. Attendance to Hort connections
3. Coordination of field days and study tours
 - a. Link with current national extension projects such as VG13076 (soil Wealth) for opportunity to coordinate field days
4. Liaise one-one-one with vegetable producers
 - a. Conduct a minimum of 15 one-on-one grower consultations per year to discuss RD&E outcomes and identify RD&E opportunities
5. Provision of simplified R&D information and project results
 - a. Review and develop project reports and outcomes relevant to the Wide Bay Burnett region and identified gaps into a 'farmer friendly' format for distribution
6. Strengthen networks and appreciation for significance of regions vegetable industry
 - a. Participate in relevant networking events/ meetings to further promote and develop opportunities through the project and build new/ supportive networks

Workshops/ Field days/ Grower activities

Name	Date	Details	Attendees	IDO Coordinated?
Agrotrend	May 2016	Composting on-farm waste, probiotic and microbial compost demonstration. Presenter: Multikraft	96 community (24 horticultural producers)	yes
Rural Water Use Efficiency (WUE) & Energy savers Field Day- Bundaberg	20 October 2016	Comprehensive insight to growers about ways in which they can monitor and improve their water and energy efficiency. Presenters: BFVG, FAQI, Growcom, Ergon Energy,	27	yes

		EVO Technologies, CommBank		
Horticultural Growers Industry Update Cucumber green mottle mosaic virus (CGMMV)	2 February 2017	Information session on CGMMV for growers	39	yes
Rural Water Use Efficiency & Energy savers Field Day- Gympie	22 February 2017	Comprehensive insight to growers about ways in which they can monitor and improve their water and energy efficiency. Presenter: BFGV, FAQI, Growcom, Ergon Energy EVO Technologies, CommBank	39	yes
Vegetable SIP Workshop	2 March 2017	Vegetable industry update and strategic investment plan workshop. APVMA and pest and disease update. Presenters: TGS, APVMA, BFGV, HIA, CIS	5 growers plus industry	yes
CGMMV/ Soil wealth Workshop	7 April 2017	CGMMV – What it means for the region and growers, improved management and biosecurity measures. Soil borne disease (VG15010) project update. Presenters: NT Farmers, NT Government, QLD Government, AHR	33	yes
Year 2				
Agrotrend	5 May 2017	VegNET trade store and aerobugs presentation.	~ 30	yes
Postharvest management of Vegetable workshop	16 August 2017	Professional development workshop helped growers, packing shed managers, QA officers, and vegetable supply chain business representatives optimise their handling and storage of fresh vegetables, maximising quality and minimising losses. Presenter: AHR	22	yes
Horticulture Code of Conduct - Gayndah	22 August 2017	In collaboration with Growcom, information session on the Code compliant Horticulture Produce Agreement. Growers learn how the code protects their business and to make sure they meet their obligation. Presenters:	20	yes

		ACCC, Growcom, HiveXChange		
Horticulture Code of Conduct - Bundaberg	23 August 2017	In collaboration with Growcom, information session on the Code compliant Horticulture Produce Agreement. Growers learn how the code protects their business and to make sure they meet their obligation. Presenters: ACCC, Growcom, HiveXChange	44	yes
VegPRO Negotiating and Influencing workshop	14-15 March 2018	Negotiations and influencing workshop – how to communicate, increase confidence and develop practical skills. Presenter ENS international	14	yes
HARPS awareness session	21 March 2018	Information session for growers on HARPS. Presenter: Tristian Kitchener	51	Attended
Year 3				
RIPPA & Drone Demo Field day	27 April 2018	Paddock demonstration of RIPPA robot weeding and fertiliser placement and DJI Matrice 100 drone. Presenters: USYD, Northern Agriservices	35	yes
Future Farming Masterclass – Agrotrend	27-28 April 2018	The IDO coordinated a significant extension event at Agrotrend on 27-28 April 2018. It was an initiative of the VegNET project, delivered in partnership with CQUniversity. BFGV delivered this event with additional funding, secured through the Queensland Governments Engaging Science Program. The event showcased robotic, drone and sensor technology applications relevant to horticulture and other primary production systems in the Wide Bay-Burnett region. It included ten (10) masterclasses (practical presentations) from researchers/scientists and displays in the BFGV Agri-Hub.	424 participants at masterclasses, 1,588 in BFGV Agri-Hub	yes

Agrichemical Pest management needs and prioritisation	4 May 2018	In collaboration with AUSVEG, Zucchini and sweet potato growers (separate engagement) met to capture direct input relating to priority agrichemical gaps. Gaps identified in consultation with growers will now be used to inform industry actions at the annual Ag Chem Collaborative Forum, assist in updating industry SARPs and identify potential solutions to address these gaps.	14	yes
Area wide pest and disease management workshop	29 November 2018	Vegetable pest and disease management field day in collaboration with VG16068 Area wide management of vegetable diseases: viruses and bacteria. Presenters: QDAF, AUSVEG, Seminis Seeds, Bayer, BFGV.	38	yes
ICA-38 Melon thrips inspection workshop	19 February 2019	As a result of local grower (Cucurbit and Solanaceae) issues in transporting produce to South Australia, an ICA-38 Melon Thrips Authorised Inspection Persons (AIP) training course was conducted. Presenter: Queensland Government.	11	yes
Cover crop Coaching Clinic	21 March 2019	Workshop and field day in collaboration with VG16068 – Optimising cover cropping for the Australian vegetable industry. Practical workshop for vegetable growers to optimise cover cropping in their enterprise and field walk at current biofumigant trials. Presenter: AHR, MG Farm Produce, QDAF	28	yes
Vegetable pest and disease management update	11 April 2019	Follow up workshop from November 2018, update of HIA project 'Area wide management of vegetable diseases: Virus and bacteria, update on results of vector and disease sampling program in Bundaberg and	11	yes

		future survey plans and involvement with industry within the region, Presenters: QDAF		
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CGMMV Workshop 7th April 2017



VegPro Negotiation Training, 14-15 March 2018



Cover crop coaching clinic – 21 March 2019



AgForum 2019, May 10 2019 – over 80 attendees.

Vegetable Industry events

Name	Date	Details	Attendees	IDO Coordinated?
Year 1				
Bundaberg Agronomic Group Meeting	16 August 2016	Introduction of the Regional Capacity Building Project to industry. Presentation on Resistance management strategy for green peach aphid in Bundaberg vegetable crops.	21	Yes

BFVG Board Meeting	29 August 2016	Introduction of the Regional Capacity Building Project to industry BFVG board members that represent all Vegetable commodities in the region	11	Attended
National Biological Conference	28-30 October 2016	Attended presentations, workshops and introduced project through networking		Attended
Year 2				
Hort Connection Adelaide	16-17 May 2017	Attended presentations, workshops and VegNET activities and meetings		Attended
Bundaberg Business Expo	19-20 May 2017	Showcased the VegNET program in addition to other projects being run in the Region	Approximately 1000 community members over 2 days	Yes
Growing the Supply Chain – Grower bus tour	12-13 July 2017	Packing and packaging standards - what's in, what's not. Talking to wholesalers - making it work for you. Record keeping, administration - the Horticulture Code of Conduct. Foodbank - reducing waste and supporting the community. Exporting - accessing export markets. Price reporting - how it works. Value adding and diversification.	18	yes
Growing the Supply Chain Brisbane Markets Industry Breakfast	13 July 2017	Presentations from Dominique Jenkins, Ken McMillan (Foodbank) and Trevor Brewer (Market Price Index)	30	yes
Burnett Inland Economic Development Organisation Business Expo	22 November 2017	Promotion of VegNET and distribution of extension material	120	Attended
Women in Ag bus tour	29 November 2017	In collaboration with Regional Landcare facilitator (BMRG), the bus tour demonstrated four horticultural farms implementing sustainable farming practices. Presenters: Suzie Clarke – Bundy Food tours, BFVG.	19	yes
Progressive Value-Add	23 February 2018	Wide Bay region bus tour for growers and delegates of	13	yes

Growers Bus Tour		Rockhampton Regional Council		
VegNET industry breakfast	3 April 2018	Industry breakfast for all stakeholders in the Vegetable industry. Presentation on leaf miner in vegetables and extrusion and value adding options for vegetables. Presenters: AUSVEG and CSIRO.	13	yes
Year 3				
VegNET industry breakfast	27 April 2018	Robots, Drones and Sensors breakfast	38	yes
Hort connections conference – Brisbane	16-20 June 2018	Attended presentations, workshops, networking events and all VegNET activities and meetings		attended
VegNET Industry breakfast	23 November 2018	In collaboration with Netafim, industry breakfast for all stakeholders in the vegetable industry. Presentation by Edaphic Scientific on plant-based sensors for monitoring and improving crop irrigation and yield.	30	yes
Burnett Mary Cross Industry networking Sessions	4 December 2018	Networking and training sessions for extension officers to encourage the formation of extension networks, identify opportunities for collaboration and training need/ opportunities in the Burnett Mary across different agricultural industries	24	attended
AgForum 2019	10 May 2019	Collaboration of Industry groups to provide upskilling and capacity building to producers on range of topics from blockchain, succession planning, export opportunities and provided local start up success stories.	85	yes

Communication

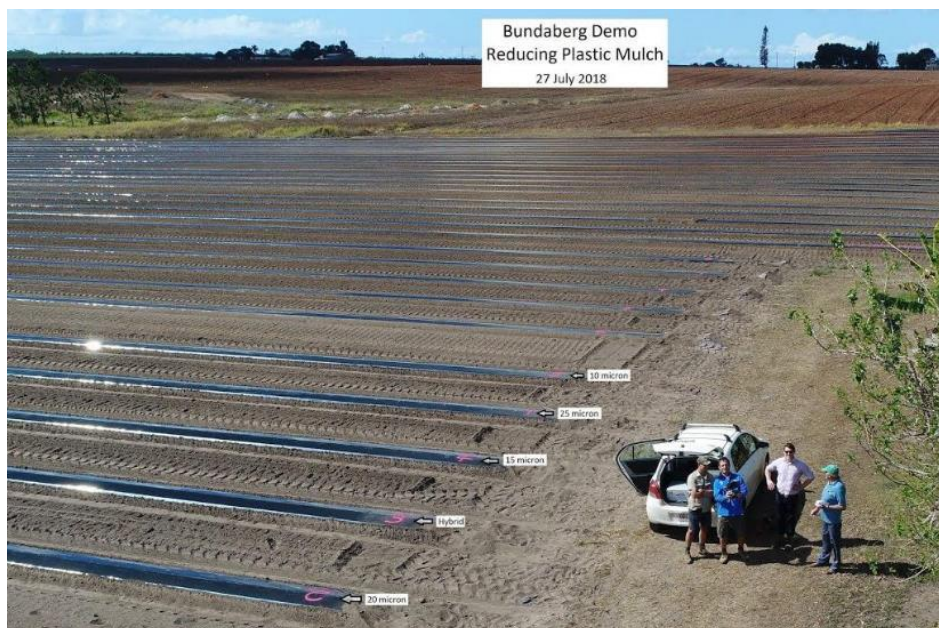
Name	Date	Details	Recipients
Your BFGV at Work <i>Electronic Newsletter</i>	December 2016	Introduction to the project and staff. 54.64% open rate, 9.43% click rate	97
	January 2017	Survey on R&D activities in the region, Biosecurity and levy information. 60.4% open rate, 21.31% click rate.	101

	March 2017	Recent research results. 61.11% open rate, 25.76% click rate.	108
	May 2017	HIA project updates, SIP, Waterfinder, Biosecurity. 45% open rate, 9% click rate.	125
	July 2017	SW/ICP Soil testing guide, HIA cost of production calculator, Mole drainage, Growing supply chain bus tour. 51% open rate, 21% click rate.	131
	September 2017	Reef trust incentives, BFVG blog. 47% open rate, 16% click rate.	134
	November 2017	Management of CGMMV, SITplus update, Agpick. 45% open rate, 11% click rate.	178
	January 2018	HIA vegetable annual report, harvest to home, Bacterial leaf spot of pepper, SW/ICP factsheets. 48% open rate, 31% click rate.	197
	March 2018	SW/ICP case study, sub-soil manuring, Ag Biz tools. 51% open rate, 21% click rate.	207
	May 2018	Agrotrend, RapidAIM sensor technology, Biosecurity. 55% open rate, 20% click rate.	211
	July 2018	Bio fumigation cover crops, SW/ICP Vegetable nutrition masterclass, RIPPA field day. 52% open rate, 15% click rate.	219
	September 2018	One on one extension news, SW/ICP factsheets, VegNET survey, Bioreactors and the great barrier reef. 47% open rate, 17% click rate.	221
	November 2018	Introduction to new IDO (Adam Harber), SW/ICP resources, IPM webinar, Australian Household vegetable consumption. 48% open rate, 25% click rate.	221
	January 2019	VegNET survey, pest and disease workshop, strip-till, cover crop trials, reef incentives for growers. 48% open rate, 7% click rate.	222
	March 2019	Reduced plastic trials, cover crop trials, Strip-till. 38% open rate, 11% click rate.	224
Rural Weekly article	2016	Introduction to the project	Wide Bay Burnett
“Your weekly serve” Bundaberg Newsmail Rural Edition	Weekly - 3 March to 13 April 2017	Information of relevance to vegetable producers in the Wide Bay and ranged from information about the staff of BFVG and the VegNET IDO, to CGMMV information and the value of SIP workshops	Wide Bay Burnett

Good Fruit and vegetables Magazine	3 July 2018	Weed Bot makes first visit to Bundaberg – article on RIPPA field day	
BFVG Website	2016 - 2019	Project introduction and project specific updates	
Facebook	2016 -2019	BFVG post containing the #VegNET reached 8,771 people and engaged 1058 from 20 posts. The reach and engagement are much higher as #VegNET was not included in all post	
Twitter	2019	Twitter has only recently been utilised with two #VegNET	
Instagram	2017-2019	The #vegNET has been used 46 times on Instagram, 37 of these were from BFVG or BFVG coordinated VegNET events	

Research/ Trials

Name	Date	Details	Coordinator
Reduced plastic mulch trial	2018-2019	Collaboration with VG16078 Soil wealth and Integrated crop protection to set up an on-farm trial researching reduced plastic mulch technologies for growers	AHR
Cover crop variety trial	2018-2019	Collaboration with VG16068 Optimising cover crops for the Australian vegetable industry to set up an on-farm trial investigation suitable cover crop species for the region	AHR
Biofumigant trial	2018-2019	Collaboration with VG16068 Optimising cover crops for the Australian vegetable industry and QDAF to set up biofumigant trials in the region	AHR/QDAF



Plastic Mulch Trial 2018-2019

Develop and disseminate simplified research and development

Name	Date	Details	IDO Coordinated?
Case Study Carbon farming	July 2018	Although the direct study was based on ginger, this case-study provided vegetable growers information on how to increase organic matter and reduce nitrous oxide emission from their soil. As well as possible yield increases.	Yes
Soil Wealth (SW) (VG13076) Integrated crop protection (ICP) (VG13078) SW/ICP Phase 2	2016-19	Continued link with current national extension projects, linkage with event and extension of relevant project outputs when made available. All of which can be found on the website.	Disseminated
Hort Innovation Vegetable fund projects	2016-19	Extension of any relevant vegetable levy project outputs from the NVEN vegetable R&D review handbook or direct contact. Extension through one-on-one engagement, communication platforms and social media.	Disseminated
VegNET blog	2018-19	Through the VegNET blog, the IDO had extensive industry engagement, dissemination of RD&E information, enhanced knowledge and understanding, wider profile broader community. 19 blogs, topics include:	Yes

		<ul style="list-style-type: none"> • Resistance in diamondback moth • Grant opportunities • Strategic investment • InfoVeg Tv • Negotiate + Agree = Winning • Robots, drone and sensors • Fruit fly management • Fusarium wilt in vegetables • Pest and disease resources for vegetable growers • RapidAIM technology for managing pest insects. • Biofumigants • VegNET survey results 	
<p>Fact Sheet</p> <p>Cover crops in the Wide Bay – Burnett</p>	17 April 2019	Summary of presentation at Cover crop Coaching Clinic, VG16068 Optimising cover crops for the Australian vegetable industry and VG16078 Soil wealth and Integrated crop protection to produce regional focussed factsheet on cover crops.	Yes
Reduced plastic technology	July 2019	BFIG will in-kind produce information on reduced plastic trials in collaboration with VG16078 as this has extended beyond the funding date.	Yes

Professional development

- Reef Extension Skills 101 Workshop in Bundaberg, coordinated by Queensland Farmers Federation (QFF) in December 2017
- Monitoring and Evaluation Workshop – 30/04/18
- Rule of Thumb Extension Training (Biggenden) – 18/07/18
- Empowering the Workplace Training – 08/08/18
- Soil Nutrition Master class (Brisbane) – 17/10/18
- VegNET annual meeting – 2017-19
- Burnett Mary Cross Industry Extension Networking and Training – 10/12/18
- Burnett Mary Horticulture Industry Extension Gap Analysis – 5/4/19

Networking events attended

- Mary River Catchment Coordinating Committee Meeting 01/05/18

- Austsafe Super Race Day 05/05/18
- VOH Workshop with levy payers 09/05/18
- Bundaberg Business Excellence Awards 26/05/18
- Winterfeast Farmers Market 07/07/18
- Brisbane Markets Gala Dinner 27/07/18
- Elders & Growcom Regional Tour 04/09/18
- BFVG Gala Dinner 13/10/18
- BFVG annual general meeting – 30/11/18
- Bundaberg Agricultural Training Group networking event – 12/2/19
- Macadamias Australia Field day – 28/2/19
- Hort Innovation Strategy Consultation Workshop – 13/3/19
- Total Grower Services grower shed talk – 25/3/19

Strengthen networks and appreciation for significance of regions vegetable industry

The project had strong engagement with local, interstate and international industry. Direct engagement and collaboration were achieved with the following stakeholders:

- Queensland Department of Agriculture and Fisheries (QDAF)
- Central Queensland University (CQUniversity)
- Queensland University of Technology (QUT)
- University of Tasmania (UTAS) / Tasmanian Institute of Agriculture (TIA)
- CSIRO
- University of Sydney (USYD)
- Applied Horticultural Research (AHR)
- RM consulting group (RMCG)
- AusIndustry
- Trade & Investment Queensland (TIQ)
- Isis Canegrowers
- Bundaberg Canegrowers
- Growcom
- Macquarie University
- AUSVEG
- Bundaberg Regional Council (BRC)
- Rockhampton Regional Council (RRC)
- Queensland Farmers Federation (QFF)
- Brisbane Produce Markets
- Burnett Mary Regional Group (BMRG)
- Burnett Catchment Care Association
- Australian Horticultural Exporters Group (AHEA)

- Foodbank Queensland and
- EE Muirs
- Landmark
- Northern Agriservices
- Lindsay rural
- CRT/Sunfam
- Total Grower services
- Netafim
- Hortus
- Hydrox technologies

The IDO also participated in monthly teleconferences for the State Vegetable Extension Network, coordinated by QDAF, involving IDO's from Bowen Gumlu Growers and Locker Valley Growers. These were valuable meetings to strengthen networks between the different region's issues, events and successes to increase collaboration and the success of the project in Queensland.

One-on-one grower engagement

One-on-one grower engagement far exceeded the requirement of 15 growers per reporting year. Growers engaged produce a range of produce including eggplant, capsicum, chilli, bell peppers, cucumber, pumpkins, beans, zucchini, lettuce, various herbs, sweet corn and various baby leaf lines. Important to note many of these vegetable growers also produce non-vegetable levy commodities such as sweet potato, turmeric, garlic, ginger, avocado, tomato, watermelon, rockmelon, strawberry and macadamia among other crops. These producers were also engaged with the program which highlights the unexpected additional and expanded value of the VegNET program.

Year 1 – 12

Year 2 – 23

Year 3 – 32

Outcomes

The National Vegetable Extension Network gained increasing momentum during its three years forming the cornerstone of R&D extension to vegetable producers in key production regions. The Wide Bay Burnett VegNET program quickly gained a reputation among growers and Industry as the central contact point for R&D, the dissemination of information and a program that quickly adapts to Industry needs. Grower feedback was paramount, and the extension service provided by the program allowed growers the opportunity to voice concerns and comment on activities they were interested in.

Grower participation in workshops and events grew steadily from year one to year two of the program. Year three of the program saw this number double which was in response to specific tailored events that resulted in higher than expected attendance. Specifically, the robots, drones and sensors workshop, cover crop coaching clinic and AgForum all resulted in high attendance. These workshops and field days were a mix of presentations with practical components and this is the key to keep audiences connected. Engaging speakers are also paramount to ensure information is well-presented and each of these events flew keynote speakers into the region who were all experts in their field.

The Operational Plan for VegNET Wide Bay Burnett indicative impact suggested seven percent of regional stakeholders adopt one or more of the targeted management improvements of innovation practices and that seven percent of regional growers would make one or more of the targeted changes and will have improved their

profitability. In the end-of-project VegNET survey – sixty-five percent of growers (9) indicated, as a result of the VegNET activities, they had made changes to their work practices or adopted new technologies in the last 3 years.

In Year three of the annual survey – of twenty-nine vegetable growers, seven (26%) had made changes in the prior year to their operations (based mainly on irrigation). A further eight (30%) indicated they plan on making changes in the next year. Eighteen (90%) growers indicated financial constraints were the main barrier to actual change and one grower (5%) indicated both difficulty to access R&D information and extension activities were irrelevant, insufficient and/or untimely as the main barrier. This last point highlights the importance of extending the VegNET program to ensure producers such as the single respondent who commented the R&D was irrelevant or insufficient is further engaged and assisted by the program.

Implementation of new practices as the result of a program is always a difficult task to address given the horticulture Industry's historically slow adoption of new practices. However, the program has proved successful with surveys indicating 26 percent had already made changes and a further 30 percent were planning on it. Utilising good monitoring programs for practice change is important and is an area that could benefit from improvement.

The VegNET program was also beneficial in not only connecting growers with R&D but with the wider Industry and developed networks and strengthened relationships between growers, researchers and Industry stakeholders. The coordinated workshops and field days were always presented with an open approach and the IDO fostered an environment where growers could ask questions throughout presentations and were encouraged to participate in feedback sessions. These informative sessions were always followed by some form of networking session where growers were able to connect one on one with other growers and colleagues. The IDO's knowledge of current programs, outcomes and upcoming events ensured conversations flowed, enhancing their take home knowledge.

Monitoring and evaluation

The National Vegetable Extension Network – Wide Bay Burnett Program proved to be successful in contributing to the project Objectives:

- To deliver regional capacity building services to the vegetable industry
- To increase knowledge of vegetable R&D and facilitate the adoption of R&D by vegetable businesses
- To increase the reach of the vegetable R&D program by engaging stakeholders in the vegetable value chain and developing trusted networks at a regional level
- To provide linkages to the national industry communications services VG15027
- To provide linkages to the National vegetable training initiative VG15028.

Capacity Building is the process by which individuals and organisations obtain, improve and retail the skills, knowledge, tools, equipment and other resources needed to do their jobs competently (Wikipedia, 2019). The VegNET program achieved this by presenting information from a wide range of topics to assist producers in multiple aspects of their business. These topics ranged from precision farming, biosecurity, post-harvest management, pest and disease management and water use efficiency to emergency preparedness and attracting investment. Prior to the VegNET Wide Bay Burnett program commencing, vegetable producers in the Region now have a greater business capacity, which was achieved by addressing the entire farm business model.

The VegNET program determined there was a distinct gap between R&D programs and the producers that benefit from them. The program was therefore designed as the communication link between the two and the IDO for Wide Bay Burnett achieved this by developing trusted relationships between Industry and key stakeholders. Often these introductions were first made at events such as Hort Connections Conference and other networking events. The VegNET program was able to fund many speakers travel to the Region which may not have happened without the IDO actively connecting growers and stakeholders to ensure the information growers wanted was presented.

Feedback from almost all those who participated in program activities indicated the information presented by the program had increased their awareness of beneficial information and that events such as R&D workshops and field days were valuable. Using a combined communication approach was an important aspect of the program to ensure all growers had access to resources and information. The average age of the producer in the Bundaberg Region is 44 years, is it fair therefore to predict many producers have access to technology and are using it. This was a key driver in transitioning from traditional factsheets to blogs which were well received. Blogging has the added benefit of being able to print the post hence easily achieving both an electronic and hardcopy version of the same message. It's important however to acknowledge not all producers easily access online resources which can be attributed to several factors and therefore the program ensured activities were promoted via a range of methods including hardcopy.

Data connectivity in the Wide Bay Burnett is limited at times however with proposed network upgrades it is expected more people will have access to reliable connections, this will then drive uptake of online technologies which naturally connects communities quicker than traditional methods of communications.

In meeting other Project Objectives, the VegNET program contributed to the national industry communication service VG15027 by contributing articles to the bi-monthly *Vegetables Australia* Magazine and weekly e-newsletter *Weekly Update*. An introduction to the Wide Bay Burnett IDO in the magazine provided an overview of the region and contact details which assisted in not only reaching local producers but informing other regions and researchers about the program.

Finally, the VegNET program also contributed to the National vegetable training initiative VG15028 *VegPRO education and training* by providing feedback to the program coordinators on requirements of producers in the region with regards to training needs. As a result of this feedback a tailored first aid course has been developed for producers and will take place post-VegNET funding. Due to previously committed funding VG15028 was unable to provide this training any earlier. The VegNET program did however coordinate a workshop for the Wide Bay Region on the topic of negotiating and influencing which was held in March 2018. This event was well received, and attendees reported it was a beneficial upskilling workshop that has assisted their everyday business negotiations.

Recommendations

VegNET Wide Bay Burnett was an effective program that achieved its key deliverables. Momentum built from year to year and should this momentum be reduced due to loss of continued funding this may impact on vegetable producers in the Region. Bundaberg Fruit and Vegetable Growers are a regional industry body with excellent Industry connectivity and were best placed to deliver this program. The effectiveness of their delivery is evident in the positive engagement of the program during the three years.

Moving forward it is highly recommended:

- Hort Innovation continue funding for the VegNET program for a following 3-5 years;
- Hort Innovation engages local regional representative organisations such as BFGV to deliver the program;
- Key extension training is provided to IDO's to upskill and provide further benefit to program delivery;
- Coordinated themes of extension material are provided to assist IDO's tailor information to each region;
- VegPRO be merged with VegNET or has closer liaison moving forward;
- Provide monitoring and evaluation frameworks to assist IDO's understand and track the impact of the program on producers;
- Central program coordinator be external to IDO's to remain impartial across all regions;
- Further utilisation of online/digital methods of communication;
- Further face to face training sessions for IDO's;
- Consider a common repository / framework for shared resources.

Refereed scientific publications

Nil

Intellectual property, commercialisation and confidentiality

No project IP, project outputs, commercialisation or confidentiality issues to report

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Appendices

Nil, see embedded docs.