Hort Innovation

Final Report

VegNET – Southern Queensland

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Delivery partner:

Lockyer Valley Growers Inc.

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VG19010

Project:

VegNET – Southern Queensland (VG19010)

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Content

Summary

VegNet Southern Queensland 2.0 builds on the successful delivery of the previous vegetable extension project in the region under VegNET 1.0 (VG18003) and the networks and delivery processes that this earlier project established. Key deliverables achieved in the current project, VegNET 2.0, were the employment of a regional development officer, development of a five-year Regional Extension Plan for the region, appointment of a Regional Advisory Committee, and implementation and evaluation of the first year of the plan.

Through the process of developing a regional extension strategy, 5 sub-projects were created

- *Regional capacity building*
- *Working in horticulture*
- *New entrants*
- *Languages other than English* and
- *Diamondback moth management*

The *Regional capacity building* project focused on key regional priorities including (but not exclusively) water security, pest management, cost of production, labour, and new markets. The aim of project activities was to provide an inclusive environment for industry people to learn and network on regional challenges impacting their business. This was achieved through regular grower seminars, newsletters, and e-news.

Project outcomes of *regional capacity building* included growth in the contact database of 3%, 97% of participants found the seminars useful for increasing their knowledge and awareness of regionally relevant RD&E and 86% of participants found the seminars useful for increasing their knowledge of RD&E developed through HIA funded projects. The *Working in horticulture* project was developed in recognition that employment roles in horticulture are far broader than traditional agronomy positions with HR, IT, WH&S and compliance roles strongly represented in horticulture businesses. Grower seminars, case studies and field trip activities were conducted as part of this project to provide opportunities for growers to increase their awareness and knowledge in these areas, create networking opportunities and encourage sharing of resources and practice change for participants.

Outcomes from the *working in horticulture* project included a strengthening of participants' networks with 97% of respondents indicating that involvement in the project was valuable for the purpose of networking. And 97% of participants indicating that involvement in the project strengthened their knowledge and awareness of industry challenges related to WH&S, HR, IT, Compliance etc.

The *New entrants* project was developed for early career growers to provide networking opportunities and awareness and knowledge of the whole supply chain. Networking and learning opportunities were achieved through case studies and a study tour.

Outcomes from the new entrant's project included a strengthening of grower networks, with 100% of study tour participants indicating they had increased their networks and strengthened existing networks. Individual learning experiences were variable based on grower needs but included connecting growers with service providers such as the HIA project: Emergency use- and minor use permit program and Diagnostic service, GrowHelp.

The *Diamondback moth management* project aimed to increase industries knowledge and awareness of BMP for DBM management. This was achieved through grower seminars, case studies, development of a poster, and regular communication with industry about current RD&E. Outcomes from the Diamondback moth project included increase in knowledge and awareness of BMP for DBM, with 97% of participants finding the presentations by UQ researchers useful for their businesses. All participants who were surveyed indicated that they were able to adequately control DBM in 2021.

The *Languages other than English* project focused on improving plastic waste disposal and chemical management in protected cropping in the Lockyer Valley. Activities conducted through this project included a grower seminar, factsheets, and grower visits.

Project outcomes for Languages other than English included development of a contact distribution list and increase in knowledge, awareness, and skill development by project participants in the areas of thrips and mite management. 100% of participants who attended the annual seminar indicated that they had learnt something by attending the session including learnings about resistance management for thrips. Growers shared resources including hosting visiting new-entrant growers interested in learning about protected cropping.

Public summary

Same as above.

Keywords

Southern Queensland

Lockyer Valley

Fassifern

Granite belt

VegNet

Vegetable Extension Network

Extension

Introduction

VegNET Southern Queensland 2.0 is a communication and extension project that forms part of the National Vegetable Extension Network, VegNET. VegNET SQ 2.0 follows on from the successful delivery of VegNET SQ 1.0 (VG18003). One of the principal objectives of VegNET 2.0, was the development of an extension strategy for the region.

In developing the extension strategy, all VegNET officers underwent extension training. This training program, conducted by external consultancy group, Rural Consulting Group, culminated in a series of documents being published including:

- VegNET Southern Queensland 2020-25 Extension Strategy
    - Regional overview
    - Key focus areas
    - Major challenges and opportunities
    - Current services and resources
    - Gaps in the RD&E service and resource space
    - Priorities for action based on stakeholder feedback
- Regional extension advisory group terms of reference

These documents are expected to form an extension strategy to prioritise activities and outcomes of VegNET projects within each of the regions for the next 5 years.

In addition to the development of the extension project plan, regional VegNET SQ 2.0 conducted planned activities from year 1 of the strategy based on documents that were submitted and approved by Hort Innovation, namely;

- Stakeholder Engagement Plan for VegNET Southern Queensland
- Annual Workplan and Gantt chart for VegNET Southern Queensland
- Monitoring and Evaluation Plan for VegNET Southern Queensland
- Program Logic for VegNET Southern Queensland

(Refer to appendix 1 for these documents)

Methodology

As part of the National Vegetable Extension Network (VegNET) program's 'Innovation Systems Approach to Extension', the VegNet officer from Southern Queensland participated in a series of group and 1:1 exercises conducted via online video calls, facilitated by contracted extension theorists, Sean Kenny & Geoff Drysdale, Rural Consulting Group. These sessions were designed to guide the VegNET officers from the 10 regions across Australia through exercises and critical thinking processes which culminated in the development of a series of documents, namely;

- A regional overview including climate, demographics, and crops grown.
- Major challenges and opportunities affecting the vegetable industry (key focus areas)
- Service providers and resources currently working in the space of key focus areas
- Gaps in service or resources for each of the key focus areas
- A prioritised list of action items identified through consultation with stakeholders and
- A 2020-2025 extension strategy
- Project plans for each priority extension area
    - Regional capacity building
    - Working in horticulture
    - New entrants
    - Languages other than English
    - Diamondback moth management)

In developing the documents, the VegNET officer consulted widely with industry and referenced previous consultative sessions including:

- Strategic planning meeting facilitated by Jeff Coutts, 05.09.2019
- Stanthorpe IDO facilitated Extension Needs Discussion 02.06.20
- AusVeg strategic development meeting 16.12.20
- Regional extension advisory group meeting 18.10.20
- and engagement with growers and other industry stakeholders through small group and one-on-one discussions.

Activities for each of the project activities that were conducted included a basic framework of:

Advisory committees: for each of the five projects, a group of advisors were consulted through either a formal or informal advisory capacity including the Regional Extension Advisory Group (REAG) which met under established terms of reference on two occasions during VegNET 2.0.

Established communication pathways were maintained to allow flow of information (for example quarterly grower seminars, quarterly newsletters, enews, Facebook) and new communication pathways were established where needed (regular update of grower contact distribution list, Instagram, YouTube).

Outputs

As part of the VegNET project's 'Innovation Systems Approach to Extension', a series of documents were produced and approved by Hort Innovation's extension team (supplied in Appendix 1), namely;

- A regional overview including climate, demographics, and crops grown.
- Major challenges and opportunities affecting the vegetable industry (key focus areas)
- Service providers and resources currently working in the space of key focus areas
- Gaps in service or resources for each of the key focus areas
- A prioritised list of action items identified through consultation with stakeholders and
- A brief 2020-2025 extension strategy &
- Project plans for each priority extension area

The first year of activities of the 2020-2025 extension strategy were completed based on documents developed and approved through the VegNET project (supplied in Appendix 3):

- VegNET Southern Queensland Stakeholder Engagement Plan
- VegNET Southern Queensland Annual Workplan and Gantt chart
- VegNET Southern Queensland Monitoring and Evaluation Plan
- VegNET Southern Queensland Program Logic

All 38 planned activities for the first year of the projects were completed (as well as several additional activities / outputs). A brief summary of outputs is provided below. A more in-depth summary including event synopses are supplied as part of Appendix 2.

Project: Regional capacity building

Project activities conducted through the regional capacity building project were aimed at increasing knowledge and awareness of key production issues including (but not limited to) water security, new markets, pest management, cost of production and labour.

7 grower & industry seminars were conducted (6 were contracted) including:

- 4 sessions for Fall armyworm preparedness training
- Grower seminar, Stanthorpe, 18 August 2020
- Grower seminar, Delivered online, 20 January 2021
- Agronomist discussion, industry preparedness for serpentine Leafminer

Across the 7 events, 116 people attended. Except where sessions were deliberately targeted at agronomists, sessions were generally made-up of approximately 50% vegetable levy payers.

Seminar topics showcased Hort Innovation funded RD&E including VegNET, Flowering plants for pest management, and Serpentine Leafminer preparedness; increasing growers' awareness of RD&E relevant to their business.

6 Newsletters were published through the Lockyer Valley Growers Inc. quarterly newsletter (4 were contracted)

- Winter 2020
- Spring 2020
- Summer 2020-21
- Autumn 2021
- Winter 2021
- Spring 2021

At least 4 Hort Innovation funded projects were referenced in the newsletters including Harvest to Home Project (MT17017), Neena Mitters BioClay project (VG16037), Internal mold of capsicum (VG17012) and Impact of pesticides on beneficial arthropods of importance (VG16067).

Additionally, a number of focused articles were published in the Lockyer Valley Growers quarterly newsletter and other publications, that linked to key production challenges such as water security, new markets, cost of production, pest management and labour:

Key production challenge: Water security

- Water security for southern Qld, Zara Hall, page 14, Winter 2020 edition, Lockyer Valley Growers Newsletter

Key production challenge: new markets

- Korea-Australia Free Trade Agreement, Bron Ford, page 10, Winter 2020 edition, Lockyer Valley Growers Newsletter
- Lettuce from Lockyer Valley to Shenzhen, Moudassir Habib, page 6, Summer 2020-21 edition, Lockyer Valley Growers Newsletter
- Impacts of COVID-19 on farming businesses, Zara Hall, page 12, spring 2020 edition, Lockyer Valley Growers Newsletter
- Covid-19 Impacts on domestic vegetable sales, Zara Hall, page 10, Autumn 2021 edition, Lockyer Valley Growers Newsletter
- Agronomist profile: Surachat Vuthapanich, Zara Hall, page 18, Winter 2020 edition, Lockyer Valley Growers Newsletter

Key production challenge: Pest management

- Fall armyworm, Zara Hall, page 12, Winter 2020 edition, Lockyer Valley Growers Newsletter
- Pest management of the future, Zara Hall, page 6, Spring 2020 edition, Lockyer Valley Growers Newsletter
- Internal mold of capsicums, Jenny Ekman, page 14, Spring 2020 edition, Lockyer Valley Growers Newsletter
- Impact of pesticides on beneficial arthropods of importance in Australian vegetables, Lara Senior, page 18, Spring 2020 edition, Lockyer Valley Growers Newsletter
- Department of Agriculture and fisheries update (fall armyworm, Serpentine Leafminer, Diamondback moth), Julie O'Halloran, page 18, Winter 2021 edition, Lockyer Valley Growers Newsletter
- Latest mail on the snail: watch out for this giant pest, Madeleine Quirk, page 12, Winter 2021 edition, Lockyer Valley Growers Newsletter
- Fall armyworm research at Gatton Department of Agriculture and Fisheries, John Duff, page 18, Winter 2021 edition, Lockyer Valley Growers Newsletter
- Keep an eye out for serpentine Leafminer in vegetable, nursery, melon and potato crops, Madeleine Quirk, page 10, Summer 2020-21 edition, Lockyer Valley Growers Newsletter
- Managing mites in vegetable crops, Zara Hall, page 10, Spring 2021 edition, Lockyer Valley Growers Newsletter
- Treatment season springs into action, National fire ant eradication program, page 24, Spring 2021 edition, Lockyer Valley Growers Newsletter
- American serpentine Leafminer detected: what this means for the Lockyer Valley, Madeleine Quirk, page 18, Spring 2021 edition, Lockyer Valley Growers Newsletter

- Serpentine Leafminer in the Lockyer Valley, John Duff, page 6, Spring 2021 edition, Lockyer Valley Growers Newsletter

The newsletters had a hard copy distribution of 150 businesses per issue which was the preferred means of receiving the news, particularly for growers who indicated a preference for hard copy. All issues were made available online on the Lockyer Valley Growers Website: https://lockyervalleygrowers.com.au/resources/newsletters/ and newsletters were also distributed via the e-news platform to a distribution list of 430 email accounts (open rate of approx. 44%, click rate of approx. 20%).

Fortnightly E-Newsfeed

The fortnightly e-news was distributed to 430 email accounts. This distribution list did not change appreciably during the project with the number of new subscribers (44) matching the number of unsubscribed / scrubbed contacts.

18 news stories referencing Hort Innovation funded projects were included in the e-news including training initiatives promoted by Hort Innovation (Leadership program, Protected cropping), and RD&E projects including Area wide management (VG16086), Soil wealth (VG16078), Emergency use pesticide program (VG13096), Australian horticultural statistics handbook and Biosecurity projects (refer to Appendix 2 for a comprehensive list of Hort Innovation funded RD&E projects).

Project: Languages other than English

A preliminary objective of the *Languages other than English* project was the development of a contact distribution list. While some engagement had occurred between project staff and LOTE growers prior to the project starting, baseline contact details for the project were basically nil. Throughout the course of the project, project staff visited protected cropping growers and developed contact information for 17 LOTE businesses.

A quarterly e-news was developed and distributed to growers who elected to receive email communication from the project team. Topics included in the e-news covered high priority extension areas: chemical management and plastic waste disposal. E-news articles were deliberately kept short in length, with only 2-5 articles in each edition. Where possible, information was supplied in both English and Vietnamese language. We gratefully acknowledge the contribution of Truyen Vo, Vegetables WA, who provided translation.

E-news was distributed to nine email accounts. E-news articles included six Hort Innovation funded projects (Ausveg Biosecurity project, Cucumber production manual, Cucumber pests and diseases poster, Soil wealth project (VG16078), Harvest to home (MT17017)).

A grower seminar held on 17 November 2020 was attended by 35 people and covered topics like thrips management and chemical accreditation training (refer to seminar synopsis in Appendix 2 for full details). Guest presenter, Dr Duong Nguyen, NSW DPI, shared results from resistance testing conducted on thrips from LOTE growers in the Lockyer region (thrips samples were collected by project team). This presentation was conducted by Duong in Vietnamese language.

Factsheets based on themes covered at the seminar and in e-news were also developed including:

- *The 3-spray strategy* (Summer 2020-21 Newsletter)
- "How to calibrate a boom spray", Zara Hall (LVG) and Clinton McGrath (DAF) , which was published as a YouTube video, https://www.youtube.com/watch?v=_TcZGpIhzk8, and Example Form, http://lockyervalleygrowers.com.au/wp-content/uploads/2020/04/Boom-Sprayer-Calibration-24-April-2020-A4.pdf

Project team distributed key production resources for the protected cropping industry to project participants including Hort Innovation funded publications: *Cucumber production manual* and *Cucumber pests and diseases* poster (kindly supplied by NSW DPI & AHR). These publications were well received by growers and were found to be particularly useful as a visual aid to communication where language barriers existed.

Project: New entrants

A study tour was held in June 2021 for new entrants interested in learning more about protected cropping (cost of production and new markets were key production challenges identified by growers). The tour was attended by 8 growers from the Granite belt region who travelled to the Lockyer valley to investigate protected cropping. The purpose of the study tour was to:

- View a variety of protected cropping structures and practices (high and low-tech) and compare the pros- and cons- of each system
- Attend the Lockyer Valley Growers Expo to increase awareness and knowledge in a farmer-to farmer learning experience and
- Provide networking opportunities leading to an increase in technical and leadership skills, develop collaborative networks and drive innovation

A grower case study profiled emerging leaders, John and Michael Patane, Wallaroo produce; about their experiences and learnings from a trial export of Kabocha to Japan. The case study which was published in the quarterly Lockyer Valley Growers Inc. newsletter (Kabocha exports to Japan, page 16, Summer 2020-21, https://lockyervalleygrowers.com.au/resources/newsletters/), The purpose of the case study was:

- To highlight an innovative business in the south-east Queensland growing region and
- Create awareness of an emerging export market (development of new-markets was identified as a high priority for southern Queensland)

Follow up articles in the Spring 2021 edition of the Lockyer Valley Growers newsletter profiled some protected cropping businesses in the area:

- New on-farm technology speeds up supply, Nathan Clackson, page 9, Spring 2021 edition Lockyer Valley Growers Newsletter
- Q&A: Minsoo Choe, Allegro Farm, Zara Hall, page 16, Spring 2021 edition Lockyer Valley Growers Newsletter

Engagement with the new entrant's sector of the grower community was conducted through old school extension platforms: 1:1 / face: face and at grower seminars (refer to regional capacity building project) and through a study tour as well as social media platforms.

Social media used as part of the project included the existing social media platform, Facebook, and *new-to-LVG* social media platforms including YouTube and Instagram. Currently, LVG social media platforms have user statistics of:

- 244 followers for Instagram account, lockyervalleygrowers_inc
- 89 views for a video posted on YouTube channel, Lockyer Valley Growers Inc.
- Reach of 711, 2800, 2000, 726 and 2900 subscribers for the 5 most recent Facebook posts on Lockyer Valley Growers Inc respectively.

Project: Working in horticulture

5 grower seminars were conducted as part of the working in horticulture project (previously called women in horticulture). Topics included WH&S, HR, compliance, labour and internet technologies.

Seminar topics covered at these sessions included:

- Property updates and drought funding, LVRC, Grower seminar, 7 October 2020
- Working safely at heights, Roslyn Rees, Worksafe QLD, Grower seminar, 11 November 2020
- Social license to farm, Marsha Aralar, Growcom, Fairfarms, Grower seminar, 11 November 2020
- Labour shortages and solutions, Zara Hall (facilitated discussion), Grower seminar,11 November 2020
- Pacific labour scheme information, Bron Ford, Grower seminar, 29 April 2021
- Energy efficiency, John Hays, QFF, Grower seminar, 29 April 2021
- IT on farm, Simon Thompson, Koala Farms, Grower seminar, 29 April 2021
- Safety on farm, Nole Baines, Ag Requirements and Michael Sippel, LVG 9 February 2021
- New agricultural work visas for south-east Asian nations, Richard Shannon, Growcom, 2 September 2021
- Superannuation update, Anna Geddes, Sunsuper, 2 September 2021
- Mental health resources for the workplace, Wendy Cadman, Qld Health, 2 September 2021
- Grants and COVID regulation updates, Bron Ford, DAF, 2 September 2021

The Lockyer Valley Growers Expo 2021 (6 & 7 June 2021) covered working in horticulture priority project themes including a plethora of exhibitors and networking opportunities for topics including WH&S, HR, compliance, labour and internet technologies. This expo was held across two days in June and had attendance of approximately 1000 people.

2 case studies were developed as part of the project (1 case study was contracted).

- Q&A: Brett Killen & Simon Thompson, Koala Farms, IT Division (Summer 2020-21 LVG Newsletter)
- Industry profile: Michelle Flowers, Koala Farms, HR Division (Spring 2020 LVG Newsletter & Winter 2021 Vegetables Australia Magazine)

In addition, several articles, tools and resources were provided to project participants:

- Got a flat battery? Zara Hall, Autumn 2021 edition, Lockyer Valley Growers Newsletter
- 1 battery less jump starter gifted to a grower (prize donated to grower by LVG as a safety initiative)
- Look up and live posters, stickers and calendar (provided by Worksafe Qld)

A study tour was conducted on 28 September 2021 which was attended by 21 people made up of growers (63%), nursery, private service providers, government, and peak industry bodies.

Project: Diamondback moth management

The Diamondback moth (DBM) insecticide resistance management strategy (IRMS) for the Lockyer valley was produced after consultation with the DBM management committee (meeting 29.01.21). An A1 poster about the IRMS was distributed to 20 businesses including all major chemical retailers in the Lockyer Valley and key brassica producers. The poster was also made available online http://lockyervalleygrowers.com.au/wp-content/uploads/2021/04/Poster-9.pdf. The purpose of the poster was:

- To increase awareness of the various impacts that pesticides have on beneficial arthropods
- To provide a tool (poster) to aid chemical users to make informed management decisions

Covid travel restrictions meant that a planned field day, which was a collaboration between DAF and LVG, was not able to proceed in real-time. Instead, a series of videos were produced including four produced by LVG:

- Nectar for parasitoids. https://www.youtube.com/watch?v=3Ty6Bh11t7U (42 views, current: 6/8/21)
- Gatton research station Diamondback moth management – demonstration trial https://www.youtube.com/watch?v=cHbtIzDO8kY (89 views, current 6/8/21)

LVG produced other videos targeting DBM management:

- Pest suppressive landscape ideas from Barden's Produce (41 views, current 16/9/21) https://www.youtube.com/watch?v=yGfvLBw3dRY
- How many Diamondback moth eggs are on this leaf? https://www.youtube.com/watch?v=rk7PWU-0J-0 (51 views, current 6/8/21)

A written grower case study was developed as a newsletter article (Diamondback moth management at Maragi, page 8, Winter 2021 edition, Lockyer Valley Growers Newsletter). The purpose of this case study was to:

- Increase grower awareness of best management practices for Diamondback moth
- Utilise farmer-to-farmer learning methods to encourage practice change

Other newsletter articles included in the Lockyer Valley Growers newsletter included:

- Insecticide resistance management strategy for Diamondback moth in the Lockyer Valley, Zara Hall, page 20, Autumn 2021
- Biological control in broccoli, Zara Hall, page 20, Spring 2020
- Diamondback moth management survey responses (CropLife Australia 2019 Benchmarking), Zara Hall, page 5 Winter 2020
- Spiders: important predators of caterpillar pests in Brassicas, Zara Hall, page 14, Winter 2021
- Impact of pesticides on spiders, Zara Hall, page 16, Winter 2021
- Parasitic wasp deployed to add in Diamondback moth control, Jake Byrne, page 50, Winter 2021

Jessa Thurman (UQ PhD candidate working on DBM) was an invited speaker at a grower seminar (7.8.20) (VG16062). The purpose of Jessa's presentation was to increase grower and industry's awareness of the benefits of flowering nectar sources in-

crop on beneficial arthropod performance as biological pest control.

Industry was regularly engaged through text message updates on changes to IRMS windows and insect development changes based on the DBM development calculator (previously developed as part of a HAL funded RD&E project).

In addition to contracted project activities, VegNET SEQ also conducted additional project activities including guest presentations at online workshops, co-development of a YouTube video and accompanying 'cheat-sheet' and a series of editorials targeted at DBM.

- Zara Hall (guest presenter), AusVeg webinar, 12 March 2021, Diamondback moth: take back control. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwj22f26sZvyAhX4xzgGHfL9AikQwqsBegQIChAB&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DbBVr31AePzM&usg=AOvVaw2ZfiaHFd_lpQA9l9ASBqqq
- Zara Hall (guest presenter), EE Muir & Sons, national agronomy meeting, 17 August 2020

National communication

VegNET Southern Queensland contributed to the national vegetable communication program by supplying editorials for *Vegetables Australia* magazine (available online at links below)

- Undertaking fall armyworm preparedness training, page 22, Summer 2020/21 edition, Vegetables Australia, https://ausveg.com.au/app/uploads/2020/11/AUSVEG_VegetablesAustralia_2020-21_Summer_WEB-150DPI_F01v1.pdf
- News from the Southern Queensland Region, page 10, Autumn 2021 edition, Vegetables Australia, https://ausveg.com.au/app/uploads/2021/02/AUSVEG_VegetablesAustralia_2021_Autumn_WEB_150DPI_F01v2.pdf
- Addressing resistance management for Diamondback moth, page 54, Winter 2021 edition, Vegetables Australia, https://ausveg.com.au/app/uploads/2021/05/AUSVEG_VegetablesAustralia_2021_Winter_WEB_120DPI_F01v1.pdf
- Lockyer Valley Growers Expo, Spring 2021 edition, Vegetables Australia (in print)
- VegNET southern Qld article, Summer 2021-22 edition, Vegetables Australia (in print)

Participation in VegNET Training Initiatives

VegNET Southern Queensland participated in VegNET training initiatives including team and 1:1 sessions with Sean Kenny and Geoff Drysdale, Rural Consulting Group and Christine Purdy, HIA (Dated: 21/5/29, 10/7/20, 22/7/20, 24/7/20, 16/11/20, 18/11/20, 27/8/21, 12/5/21, 8/6/21, 10/6/21. 25/3/21).

In addition, informal Queensland VegNET discussions (SVEN) were held regularly, facilitated by Bron Ford, DAF, between VegNET southern Queensland, Bundaberg, and Bowen regions, to discuss extension initiatives that had a whole of Qld focus, share experiences and resources (24/11/20, 5/2/21/ 26/5/21)

Outcomes

Refer to table supplied as an Appendix.

Regional capacity building project

Outcomes of project activities included:

- Feedback from the sessions indicated the sessions were considered very useful to extremely useful for the purpose of networking with participants developing at least 1 new professional industry contact or strengthening the relationship of existing contacts,

- 97% of respondents found the seminar topics useful (score of 3 or above) and 78% of respondents found the seminar topics in the sessions useful (4) to extremely useful (5). Comments from participants included:

"Very informative"

"Interesting to keep updated with what is new"

- On average, about 75% of participants indicated they intended to make changes to their business as a result of attending one or more of the sessions.
    - As a result of attending fall armyworm preparedness sessions; crop scouts changed their crop monitoring procedures to include scouting for FAW. Workshop training provided the necessary information to monitor for FAW to a high degree of accuracy. Workshop attendance also meant that scouts had a point of contact if they needed more information (Fall armyworm preparedness sessions).
    - Several growers trialed temperature loggers in freighted produce which were supplied through Emerson, although no growers use them routinely at this stage (Grower seminar, 7 October 2020).
- Participants shared information and sought collaboration amongst their networks
    - Participants in the Fall army worm preparedness sessions volunteered in the *FAW trapping network* (DAF) to provide area-wide surveillance of FAW and early warning of FAW expanding its range into the region.
    - Participants in the Serpentine Leafminer agronomist discussion shared early experiences of the new exotic incursion including monitoring and identification, biology, insect behaviour and pesticide selection and discussed area-wide management options.

Working in horticulture project

As a result of project activities:

- 203 participants attended working in horticulture seminars.
- M&E indicated 84% of participants found the sessions very-useful to extremely-useful for the purpose of networking. As a result of attending one or more sessions, participants met at least one new person or increased the strength of engagement with one person including service providers.
- >60% of participants intended to make changes to their business as a result of attending project seminars
    - At least 1 business now routinely uses a batteryless jump starter as a result of attending a farm safety seminar about the dangers of jump starting vehicles (batteryless jump starters are considered a safer way to charge batteries including vehicle batteries compared to traditional jump-starting) (9 February 2021).
    - At least 1 business increased safety awareness for workers in their business by placing clear safety messages in prominent areas (stickers supplied by Worksafe QLD, Grower seminar, 11 November 2020).
    - A facilitated discussion led by Zara Hall on labour shortages led to better two-way flow of information between growers and policy makers (Politicians) and advocacy bodies (Growcom), allowing for more informed decisions around labour policies for the sector e.g. temporary relaxation of student visa working hours for student visa holders https://immi.homeaffairs.gov.au/visas/getting-a-visa/visa-listing/student-500/temporary-relaxation-of-working-hours-for-student-visa-holders (Grower seminar, 11 November 2020).
    - One grower took written notes on the seminar topic 'IT on farm' as part of their research and planning into future facility upgrades which will include advanced tools and technologies (e.g., automation, data collection) to reduce costs of production associated with labour etc. in their business.
    - Several growers looked into 'stapling' resources for employees super after attending a seminar session (3 September 2021)
- 18 participants attending the study tour.
- The presentations were considered useful (3) to very useful (4) by study tour participants
- The event was considered very useful (4) for the purpose of networking

- 50 percent of the audience indicated they intended to make changes in their business as a result of attending the study tour. Specific changes that study tour participants intended to make in their business recorded on the day through paper M&E forms included comments such as:

"Interested in export" and

"Interested in exporting from Toowoomba Wellcamp Distribution facility."

Languages other than English (LOTE) project

As a result of project activities:

- Project team increased their engagement with growers
    - Pre-project engagement could be generally described as '*no relationship with grower*'
    - Post-project engagement could be generally described as '*existing relationship with grower'* and '*existing relationship with grower- strong*'.

Face-to-face engagement as either 1:1 on farm visits or participation in the grower seminar was the most effective communication pathway. Email was not considered an effective means of communication with farmers aged 45+ due to language differences (Note: E-news articles included both Vietnamese and English language articles). Enews was effective for follow up communications for early career growers (aged <45) however did not replace old-school extension methods of 1:1 / face: face.

12 growers increased their knowledge of cucumber production through industry reference material supplied through the project, including Hort Innovation funded RD&E resources: Cucumber production manual and Cucumber pest and disease poster.

Approximately 50% of e-news subscribers increased their awareness of Hort Innovation funded RD&E projects (Biosecurity (Ausveg), Soil wealth (VG16078), Harvest to home (MT17017), Cucumber production manual, Cucumber pest and disease poster)

4 participants increased their attitude towards- and skills in chemical use. These participants completed chemical accreditation training after hearing information about available training opportunities (Presentation by Brianna Kliese, Lockyer Valley Regional Council on Rural support training program delivered by Tafe Qld and funded through regional skills adjustment strategy). This represents a positive shift in awareness and up-take of available training programs in a grower sector that has historically had low rates of accreditation in chemical use.

- 100% of farming households who attended the grower seminar (as well as many more who didn't attend the seminar but heard about it through word-of-mouth) were able to receive drought funding assistance through the Qld government after hearing information about available drought support (Presented by Wes Bray, Salvation Army).
- 100% of industry who attended the grower seminar indicated they had learnt something new as a result of attending the event (this was asked as a 'show of hands' rather than traditional M&E due to language differences).
    - Post event feedback (1:1 engagement) indicated that one grower had improved their pesticide rotation strategy for resistance management following attendance at this event
- Project team strengthened their engagement with service providers, e.g., NSW DPI, LVRC, Salvation army
- 2 Businesses hosted study tours (i.e., shared knowledge / resources) in a cross-project initiative between LOTE growers and new entrants.
-

Diamondback moth management project

As a result of project activities:

- All agronomists (resellers and independent agronomists) working in the Lockyer region have been engaged through the project through 1:1 and group sessions. Agronomist focused sessions were well received with representation by all reseller businesses and most independent agronomist businesses. This is significant because:
    - Agronomists were considered a primary source of information for growers about Diamondback moth

management. By engaging with agronomists, our actual reach was extended significantly through the services agronomists provide to growers.

- high attendance by agronomists at group meetings has allowed the Lockyer Valley agronomists to have in depth discussions about pest management on a valley scale (area-wide management) (This applies to discussions around DBM but also other important regional pests including Serpentine Leafminer and Fall armyworm).
- 20+ businesses, including growers and all major chemical re-sellers in the area, were better equipped to make informed spray decisions after being supplied with the A1 poster. One grower commented when receiving a poster, *"This* {poster} *is useful because none of us have been given a poster with these pesticide charts before" (in reference to the Pesticide Impact Tables developed by Jessica Page et al* (VG16067).
- All brassica growers and agronomists surveyed indicated they were satisfied with Diamondback moth management (pers comm: July 2021) (Note: 2021 was considered a 'low' pressure year for Diamondback moth populations in the Lockyer Valley and this evaluation needs to continue into the summer season and beyond to develop a true picture of the effectiveness of the strategy).
- The model for extension used for the Diamondback moth project was found to be a useful framework for addressing other major production challenges in South-east Queensland such as Serpentine Leafminer and Fall armyworm.

New entrants project

As a result of project activities:

- Project participants each developed at least 1 new professional relationship and strengthened existing relationships
- 100% of project participants indicated they had increased their knowledge about protected cropping through the farmer-to-farmer learning experience.
- Growers collaborated to increase their shared learning: two producers invited the visiting growers to view their production facilities and shared their insights and experiences in protected cropping.

Monitoring and evaluation

Monitoring and evaluation was conducted based on the *Monitoring and Evaluation Plan VegNET Southern Queensland VG19010* which was approved by Hort Innovation at milestone MS103 (Appendix 1) for the five projects

- Regional capacity building
- Working in horticulture
- New entrants
- Languages other than English
- Diamondback moth management

This section outlines the methodology used to monitor and evaluate the projects. Results of the monitoring and evaluation activities is outlined in the section, *Outcomes*.

Regional capacity building project

A contact distribution list was maintained on an excel file and imported into an online e-news program (MailChimp). Changes to subscriptions (e.g., subscribers, un-subscribers, scrubbed contacts) were recorded in Excel to measure change in growth of the database.

An E-news software platform, MailChimp, was used for all e-news including distribution of quarterly newsletters. Statistical reports provided through MailChimp allowed audience tracking e.g.

- Subscribers, un-subscribers, scrubbed contacts
- Open rate
- Click rate

Hard copy questionnaires were provided at grower seminars. Questionnaires were deliberately kept anonymous as anonymity was considered to be useful in allowing participants to provide fast & honest feedback.

Questionnaires followed a standard format for each seminar:

- Rate each presentation for its' usefulness in increasing knowledge / awareness on a subject relevant to attendees' business (on a sliding scale where 1= not at all useful & 5 = extremely useful),
- Do you intend to make any changes to your business as a result of attending this seminar (Yes / No / Comments)
- Was this seminar useful for the purposes of networking (on a sliding scale where 1= not at all useful & 5 = extremely useful)

Hort Innovation funded RD&E references in e-news, newsletters and seminars was recorded in an excel file and editorials made available through regular updates to the Lockyer valley growers' website > newsletters.

Languages other than English

Development of a contact distribution list was maintained in an excel file. Where growers elected to subscribe to the e-news, this was also added to the regional capacity building project contact distribution list, however, often, growers did not elect to receive e-news.

Reaching out to growers was mostly done through 'cold calls. The project team identified protected cropping structures from Google Maps and visited these farms to make initial contact. Sometimes these farms were not horticultural farms but were actually piggeries or chicken sheds. Farmers were generally receptive to engagement however, language difficulties sometimes prevented engagement. Industry resources were often shared during

initial engagement to assist communication (use of images as aids to communication).

Ongoing farm visits allowed project participants to track changes in practice which was recorded as personal observations.

Quarterly e-news were distributed via MailChimp which allowed statistical tracking of open rates / click rates.

Factsheets were distributed through newsletter and enews and provided as hardcopies to participants.

The grower seminar was advertised by 'letter dropping' invites in English and Vietnamese language to all contacts and giving invites in-person where growers were home. Grower champions were also enlisted to assist with 'word of mouth' advertising for the seminar.

Traditional monitoring and evaluation planned for the LOTE seminar (similar to hard copy M&E used in the regional capacity building project) was abandoned on the day in recognition that language challenges would not make this method of evaluation effective. Instead, a simple 'show of hands' to the question (asked in Vietnamese by a grower champion) "have you learnt anything as a result of attending this session" was used.

New entrants

Grower engagement included traditional engagement pathways: one: one via phone or farm visits and inclusion in standard communication outputs (newsletters, enews etc.) as well as social media platforms (Facebook, Instagram, YouTube). Instagram and YouTube accounts were a new initiative in VegNET 2.0 in response to the new entrant's project in recognition that new entrants are active users of social media.

Images used to advertise working lunch seminars were sourced from social media platforms of emerging leaders (e.g. @kluckfarms, @hauserfarms @mitchbrim) as a way to engage with new entrants.

Working in Horticulture

Attendees at grower seminars were asked to complete a hard-copy questionnaire with the same format as used in the regional capacity building project, that is;

- Rate each presentation for its' usefulness in increasing knowledge / awareness on a subject relevant to attendees' business (on a sliding scale where 1= not at all useful & 5 = extremely useful),
- Do you intend to make any changes to your business as a result of attending this seminar (Yes / No / Comments)
- Was this seminar useful for the purposes of networking (on a sliding scale where 1= not at all useful & 5 = extremely useful)

Diamondback moth management

A pre-season DBM committee meeting was held to discuss DBM management including any management strategies / communications that needed to be implemented for the coming season. The industry development officer acted as organizer, facilitator and note-taker for the event and completed action items with support from the DBM committee.

An end of season survey* was conducted as 1:1 engagements via phone or on-farm with a broad cross-section of industry (growers, nursery, agronomists, researchers). The survey collected industry observations of DBM population, current practices, impact of project activities and gaps in RD&E. Responses were collated in a summary report and compared to an earlier benchmarking survey conducted in 2019. Findings from the survey will be used to formulate future communications and extension activities for DBM management.

*Note: this survey is ongoing– responses need to be captured into the warmer months (beyond the end of VegNET 2) when DBM pressure is expected to be higher to develop a true representation of how the strategy is performing.

Recommendations

It is recommended that the activities conducted through this project continue into VegNET 3.0, largely unchanged.

- The structure of grower seminars (short speaker slots followed by networking event) was acknowledged as an effective model for engagement, with seminars routinely obtaining excellent attendance and engagement by industry.
- Growers indicated regional newsletters and e-news were a preferred means of receiving regionally relevant news. The majority of growers indicated that they preferred hard-copy newsletters over electronic versions.

The Diamondback moth project could be expanded to include major pests of concern for the region, particularly ones where an area-wide management approach is applicable. The program (grower driven, regional steering committee, identification of RD&E gaps, action items and M&E) is considered an effective communication and extension model for the region and may be a useful model to address other regional pest challenges that may arise.

The process of developing a regional strategy and work plan over 12 months was considered slower then might be deemed desirable. Should this training module be delivered to other extension workers, the process could be expedited considerably and be completed in under 3 months, by being clear about the activities / outputs / time frames at the start of the program (i.e., provide a clear overview of the training program and stick to it).

Refereed scientific publications

None.

References

None.

Intellectual property, commercialisation, and confidentiality

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

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Appendices

Attached as separate files (Appendix 1 & 2)