impact update

Hort Innovation

Welcome to the first edition of Hort Innovation's new publication, **Impact Update** – a snapshot of your investments in action and how they are making an impact on the ground.

Plantings of new almond varieties in Mildura, Victoria

In this edition...

R&D: New almond varieties planted in Mildura

Hort Innovation's almond breeding program first began in 1997 and has since commercialised six new varieties that are performing better than previously available options. This long-standing investment runs a targeted breeding program to develop new almond varieties with improved production characteristics, while progressing the evaluation of varieties from earlier iterations of the program and from overseas breeding programs. The aim is to ultimately provide industry access to new varieties that are high yielding, with self-fertility, improved disease tolerance, closed shells and strong visual and eating qualities.

Research project lead Dr Michelle Wirthensohn from the University of Adelaide has been involved in the breeding program since its inception 22 years ago. She said the objective of the breeding program is to continue to develop new high-yielding self-fertile almond varieties with improved tree architecture, closed shell and disease resistance.

"When we first started this project more than two decades ago, the aim was to identify and breed new varieties so growers could have better long-term options. Back then there were only a few old varieties, and they lacked a strong taste profile and were mostly used for processing," she said. "We needed to investigate ways to create a sustainable domestic almond industry that was robust and resilient and could thrive in a number of challenging conditions."

"Disease resistance was important, as was producing high yield with the same water use. So, we set our sights on breeding varieties that would meet all of the industry's standards and have successfully completed field trials which have shown that these varieties will set fruit without any insect intervention."

Dr Michelle Wirthensohn said that Maxima and Mira were two of the five varieties that were released in 2016 and the initial aim for those varieties was higher productivity and self-fertility.

She said that "they are full siblings and come from the same cross, but Maxima didn't get the self-fertile gene. Maxima does produce a huge kernel though – where Nonpareil averages 1.2 to 1.3 grams per kernel, Maxima averages around 1.9 grams and some markets love that huge kernel. Mira is self-fertile and produces more than the Maxima but has a smaller kernel. With Mira's yield being higher in the long-term trials, it's currently coming out on top."

Meet Luke and Lucinda Englefield, almond growers in Mildura

Luke and Lucinda Englefield grow almonds in Mildura and have been involved in the industry for around a decade. Five years ago they made the decision to plant nine hectares of two new varieties (Maxima and Mira) developed through the almond breeding program.

"We decided to have a look at these varieties and began our research by talking with other growers, as well as the Industry Liaison Officer at the Almond Board of Australia, about the opportunities and risks involved," said Luke Englefield.

Plantings of new almond varieties in Mildura, Victoria

Harvesting time

Luke Englefield planting one of the new almond varieties

"We knew that almost 30 years of research had gone into getting the varieties to this point in the breeding program. We also trusted the people involved with steering the project and their desire to breed innovative varieties that are easier to farm in Australia and don't have as many of the problems that our current commercial varieties have."

"Previously we were dealing with two or three different types of kernel bugs that appear at harvest time. They're very hard to control and although we use orchard hygiene methods, it's not perfect. These new varieties don't have that problem because they've been bred to have different characteristics."

"We didn't want to continue dealing with the same issues the almond industry has had for the past 20 years when we could try something different that could be better. And so far, we've found these varieties easier to farm – we don't have to worry as much about the main pests that we don't quite know how to control. For us, the aim was to do better with less inputs. If I could plant more almond trees, I would choose to plant more of these varieties. One of them requires a lot less bees and they both require a lot less insecticides."

"The way I see it is that there's risk involved both ways. There's risk in continuing to do the same thing you've always done for 30 years, where you don't fully understand how to control the pests and diseases you're coming up against. But there's also risk in trying something new."

"At the moment we're seeing a lot of almond growers dipping their toes into trying the new varieties – starting with a small selection of their orchard before they make a larger commitment."

"There are royalties that need to be paid on every tree, which is a significant upfront cost in planting a new variety. However, when you compare that cost against 20 years of using extra efforts needed to control carob moth and other pests and diseases linked with the conventional varieties, you'll actually be in front."

"I think that increased pressures on bee supply for pollination will encourage other almond growers to consider new varieties that seem to be more efficient. Trees that need less bees and less chemical inputs, while still maintaining yields, are going to provide better returns for growers. At the moment it seems to be the more innovative leaders who are taking advantage of this opportunity, but for me it was very much a commercial choice. I guess I'll be able to tell you in 20 years whether the decision was a winner!"

Dr Wirthensohn said the breeding program is now aiming to produce varieties which are resistant to diseases such as almond hull rot – which costs the industry millions of dollars in production losses each year and bacterial spot disease – both common plant diseases that affect plant productivity.

"We're also looking to increase the diversification of current varieties for the almond industry by 2023; incorporating a selection of new self-fertile varieties with larger kernels, higher yields; and improved pollinators for Nonpareil," she said.

Hort Frontiers: Pilot program reduces fruit fly population in Cobram

The Hort Frontiers Fruit Fly Fund aims to control the fruit fly populations that impact the productivity of Australian horticulture industries. At the core of the Fruit Fly Fund is the ground-breaking $60 million SITplus partnership. The SITplus program pulls together some of the world's leading fruit fly experts and research organisations, to deliver an integrated solution to the management of Queensland Fruit Fly (Qfly).

The SITplus initiative has been a particular success in Cobram, Victoria. The pilot program involved the weekly release of over two million sterile fruit flies over the township of Cobram and, in partnership with the area wide management program of the Goulburn Murray Valley Regional Fruit Fly Group, resulted in an 83 per cent reduction of fruit fly activity within the town.

The success of the trial in Cobram is largely due to the collaboration between research funded through the Hort Frontiers strategic partnership initiative and local efforts to curb the impact of fruit fly in the area.

Meet the researchers, Professor Phil Taylor and Dr Bishwo Mainali

"The basic approach of the SITplus program is to rear millions of male fruit flies, sterilise them by radiation and release them into the wild, where they mate with females in the wild population. As the released flies are sterile, the females' eggs fail to hatch, and the next generation is greatly reduced," said Macquarie University's Professor Phil Taylor, who is the Director of the ARC Centre for Fruit Fly Biosecurity Innovation. "While the concept is simple, each operational step requires a huge effort of R&D to get it to work."

"We've been deeply impressed with what the community of the Goulburn Murray Valley has achieved alongside the SITplus program in their area. The release of sterile flies over Cobram aims to suppress an urban population and prevent it moving out into the surrounding horticulture. How the program is managed in town is absolutely critical to how growers are impacted by the efforts, and it was clear how connected the community in the Goulburn Murray Valley feels to horticulture. Thousands volunteered their own time to address an identified industry problem and their efforts have made a tangible difference to the horticulture industry in the area."

"The results we're seeing in Cobram as a direct result of the SITplus program are really quite exciting," said Dr Bishwo Mainali, the technical lead of the program at Macquarie University who oversees all the research and operations of the project. "What we have seen over the last three years is a greatly reduced Qfly population in Cobram, and the positive impacts of sterile releases were realised quite early following the start of the release trial."

"To measure the impact of the program, we use the township of Mooroopna in Victoria as a control site. Mooroopna is similar to Cobram in terms of climate and habitat, and originally had a comparable population of fruit flies. The sterile flies are released in Cobram, but not Mooroopna and we can measure the changes in the fruit fly population. We have found that the fruit fly population in Mooroopna is 8 to 10 times higher than in Cobram."

From L to R: Ross Abberfield, Professor Phil Taylor and Dr Bishwo Mainali

An example of the campaign materials used in Cobram to raise awareness about Qfly

"This trial has clearly demonstrated that the sterile insect technique is very effective in suppressing fruit fly populations. The next phase will be to broaden the program to other affected regions so that they can benefit from the technology and research."

Meet the GMV Area Wide Management Program Chair Tony Siciliano, and Program Coordinator Ross Abberfield

"From 2017 to 2019 our trapping data across the region recorded a 60 per cent reduction of Qfly across the whole Goulburn Murray Valley, and where we had the SIT trial in Cobram there was an 83 per cent reduction" said Tony Siciliano, President of the Cobram and District Fruit Growers Association and a commercial orchardist. "The area wide management platform creates the perfect environment for the release of sterile flies because we've already created the awareness and support within the urban community – and that's where the Cobram drop zone was. The urban community were in complete support, and when you combine these two strategies you get outstanding results".

Ross Abberfield is the Goulburn Murray Valley Regional Fruit Fly Coordinator, and his job is to lead the implementation of the multi-award-winning program in the region. The Goulburn Murray Valley (GMV) Regional Fruit Fly Group's activities are funded by the Victorian government, and Hort Innovation collaborates with them through the SITplus program. Fruit fly area wide management is about creating awareness, education and engagement across the community, industry and government to manage and reduce fruit fly, in one word, it's about "ownership".

"The fact that we've got such a high-class area wide management program in the area has enabled a really successful release of sterile fruit flies in the area. Going forward, our aim is to make our program more sustainable, and it would be great to see the sterile release program expanded across broader areas so that we can continue reducing Qfly populations and limit their impact on horticultural industries."

Meet Adrian Conti, a summerfruit grower in Cobram

Adrian Conti and his family own and operate 100 hectares of orchards in Cobram in Victoria and near Griffith in NSW. Adrian's family grow apricots, nectarines, peaches, plums, apples and pears, all sold for domestic and export markets.

Adrian said that "fruit flies are a pest no one wants, and the SITplus program has made all the difference in Cobram. Growers are happy, we're getting fruit to market and to my knowledge there hasn't been any commercial fruit from Cobram that has been infested with fruit fly and that's our number one goal. Having the SITplus program active in Cobram complements everything that we do – it's all about growing fresh produce that isn't damaged by pest or disease, and ensuring the consumer gets a better product."

Sterile fruit flies ready to be released

Chilled sterile fruit flies

International Trade: Summerfruit gains access to Vietnam

In a significant achievement for the domestic summerfruit industry, Australian peaches and nectarines have recently secured market access into Vietnam following successful negotiations between the two countries. This announcement comes after more than a decade of collaboration between the summerfruit industry, Summerfruit Australia, Hort Innovation and the Government.

Hort Innovation's Head of International Trade, Brei Montgomery, said that "there has been a huge effort over a sustained period of time to get this outcome for industry. As a protocol market, securing market access into Vietnam required a substantial body of work involving consulting with industry to set an export strategy, applying via the International Market Access Assessment Panel and a technical market access industry group supporting the Government with their negotiations with Vietnam."

The arrival of COVID-19 created some roadblocks in the market access process and the Government had to pivot in collaboration with the summerfruit industry. Negotiations culminated in a virtual inspection involving Vietnam Plant Protection Department, Department of Agriculture Water and Environment, Summerfruit Australia, Sharp Fruit, JD Conti, Cutri Fruit, Mattina Fresh, inspection and storage facility Valley Pack and treatment facility Steritech. The virtual visit took place at the height of the season over a four-day period and Summerfruit Australia CEO, Trevor Ranford noted the presentation of the Australian summerfruit industry was one of unity, professionalism, openness and humility.

Meet Adrian Conti, summerfruit grower from Cobram

Adrian Conti and his family own and operate 100 hectares of orchards in Cobram in Victoria and near Griffith in NSW. Adrian's family grow apricots, nectarines, peaches, plums, apples and pears, all sold for domestic and export markets. Adrian has been involved in the process of gaining market access into Vietnam for the past seven years, largely through his role as Deputy Chair of Summerfruit Australia, the industry representative body for summerfruit.

Adrian said that "Gaining access to access to Vietnam is great news for summerfruit growers and exporters. It's been a long run for industry getting to this point. Having a new market to complement our existing trade relationships allows us to diversify and mitigate risks."

Now it's up to the summerfruit industry to begin building the relationships needed with importers in Vietnam to begin sending their produce to the new market.

"Vietnam and China are similar markets in terms of the type of fruit, size and quality that consumers are looking for, the difference is the protocols that are required to export to them," said Adrian.

"From a practical point of view, growing and packing the fruit for Vietnam or China will look very similar. We'll designate which parts of our orchard we're intending to export to different markets by establishing perimeters and setting up the required methods for data collection. As per the protocols, produce for China will be fumigated and produce for Vietnam will undergo irradiation."

Successful trial shipment of peaches and nectarines

In April this year, the first shipment of peaches and nectarines was successfully sent to Vietnam as part of a trial program to test the new export pathway. Three summerfruit growers participated in this pilot, including VF Siciliano & Sons from Woorinen in Victoria.

VFS Export Manager, Colleen Dangerfield said that "we sent a very small trial shipment of white nectarines and white peaches to test the pathway and processes of the protocol. Working closely with the Department of Agriculture, Water and the Environment, as well as the Department of Foreign Affairs and Trading in Vietnam, ensured that the trial was very successful. I'm looking forward to sharing our insights with the rest of industry to ensure that the entire industry is well placed to take advantage of this new market next season."

Hort Innovation and market access

Market access for horticulture products to international markets is gained through negotiation between the Australian Government and the Governments of our trading partners. Hort Innovation plays a number of roles in these negotiations, including:

1. Investing levies for projects that develop the datasets that demonstrate that the phytosanitary method used on the produce will reduce the risk of pests and diseases identified by the market you want to trade with. This research is not guaranteed to provide the outcomes required, can take around five or more years and requires substantial levy investment. Once completed and successful, the dataset is sent to DAWE for review and to underpin their technical negotiations.
2. Investing in the development of an export strategy for the industry that prioritises which markets the industry wants to export to as a collective.
3. Hosting an independent panel that acts on behalf of the horticultural sector to provide transparent, unbiased and consistent market access advice to the Australian Government, the International Market Access Assessment Panel.
4. Supporting the Government with their negotiations; once the IMAAP panel have confirmed that the market access application meets the criteria, it is then passed onto the Department of Agriculture, Water and Environment to prioritise what markets and products in the pool they will negotiate next.

Hort Innovation also supports industry more broadly through trade development programs that deliver a range of activities designed to help growers take advantage of existing, new and emerging export opportunities. For the summerfruit industry, the current project *Summerfruit market access and trade development project* (SF19000) is delivered by Summerfruit Australia.

Marketing: Multi-industry approach generates high media-value

In a first for the lychee, passionfruit, papaya, persimmon and pineapple industries, Hort Innovation has taken a multi-industry approach to enable each industry's levy funds to go further with an extra $440,000 of media value secured through this collaboration.

A new media partnership with NewsCorp was established to deliver greater exposure for each individual industry. A multi-industry briefing process was undertaken where each fruit was able to retain its individual fruit presence, however the joint approach meant that by working collaboratively each individual industry was able to achieve 3.1 times the total media value from NewsCorp. This enabled greater consumer reach to ultimately encourage more Australian households to purchase lychee, passionfruit, papaya, persimmon and pineapple.

The digital marketing partnership included a range of activities bespoke to each industry, such as home page takeovers and the promotion of simple recipes on Taste.com.au, Australia's #1 food site. Taste.com.au reaches more than twice as many Australians compared to any other food media brand, with an audience of 3,358,000 consumers. Through this partnership, consumers were able to learn how to enjoy these fruits and understand more about the reasons why they should.

Hort Innovation's General Manager of Marketing, Jane Smith said that "By working together and taking a collaborative approach to a new media partnership, these individual marketing programs have been able to maximise the value of their levy spend. More consumers will have had the opportunity to be inspired by the content they saw on Taste.com.au, ultimately resulting in more purchases of delicious Aussie fruit."

The new approach also included a suite of new recipes and imagery for use across social media in each industry's individual marketing program, to inspire and encourage more Australian households to purchase.

Hear from papaya grower, Paul Fagg

"It makes sense for the smaller tropical categories to come together and pool resources. The smaller tropical categories have so much potential for growth through increasing household penetration and frequency of purchase. These categories collectively provide the consumer with supply over a 52 week period. This appeals to both national chains, independent retailers and consumers, providing colour, variety and versatility throughout the year. In addition, the tropical categories, and the farmers that grow them have a great story to tell in terms of nutritional value, provenance, and sustainability."

Data & Insights: Providing access to valuable data via the Harvest to Home platform

In 2021, Hort Innovation developed a Consumer Insights Strategy which focuses on building a detailed understanding of our consumers and the potential market opportunities for the horticulture sector. The Consumer Insights Strategy is underpinned by a number of multi-industry investments that work together to provide the necessary data and insights needed by our stakeholders.

One of these foundational investments is the continuation of our partnership with NielsenIQ, to give industry access to their Homescan panel which measures consumer purchasing behaviour and is the primary market read on retail consumer performance. A new five-year agreement is underway through the multi-industry investment *Consumer purchase and retail data* (MT21004) and this data source underpins the ***Harvest to Home*** platform. Through NielsenIQ's 10,000+ consumer panel, this investment provides industry with insights into household purchasing behaviour and channel performance.

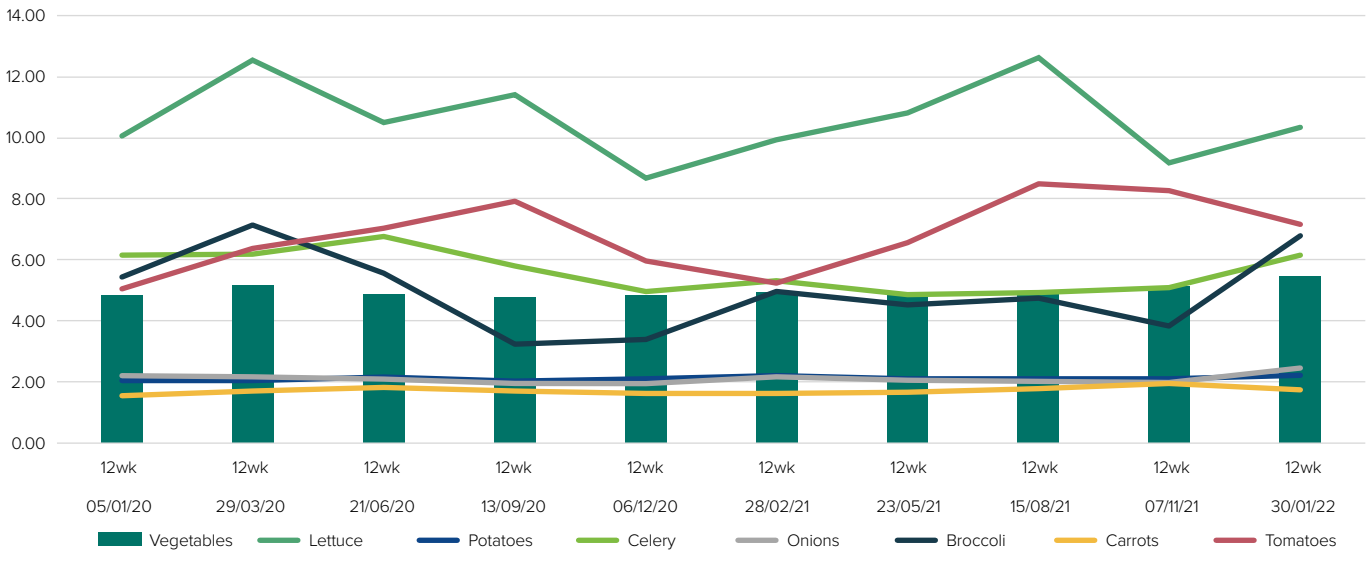
Through this investment, industry also have access to Homescan specialist servicing time to answer any further purchase-related queries they may have. Recently AUSVEG took advantage of this opportunity by reaching out to Hort Innovation for some additional data to help aid some of its advocacy on behalf of its members.

AUSVEG developed advocacy articles detailing the rapidly rising input costs that their growers are dealing with and compared these to the retail prices across key commodities which it demonstrated had remained relatively static overtime. As you can see in the chart, the NielsenIQ data provided AUSVEG with the necessary data to back up their claims. With growers continuing to bear the brunt of global trade conditions with rising chemical, fertiliser, fuel, lumber and labour costs, AUSVEG wanted to bring attention to farmgate prices in the current economic climate. Part of AUSVEG's work is to help educate and inform growers to be able to use this information within their business. Many growers have referenced this work during their negotiations with their buyers and are seeing the benefits. This information was picked up by multiple media outlets and continues to be a prevalent discussion point within industry and the broader community.

Providing relevant data is a way Hort Innovation can equip horticultural industry bodies to advocate for the betterment of growers. AUSVEG was also able to use this information to help better inform other industry bodies, via the NFF Horticulture Council, to help them understand what can be done in this space and how Hort Innovation can assist them with data.

Hort Innovation is looking forward to seeing how the Consumer Insights Strategy, and the investments that underpin it, will contribute positively to the horticulture sector.

Australia | Price per KG



Source: *NielsenIQ Homescan for the 52 weeks ending 30/01/2022 for the Australian market. Copyright © 2022 Nielsen Consumer LLC.*

Disclaimer: *NielsenIQ does not endorse any client claim or extrapolated opinion. NielsenIQ is an independent research agency and cannot support or advise on advertisement or marketing campaigns or slogans or similar publications. Hort Innovation may only make use of our name in association with the results it may reference in its claim. Hort Innovation may not state or imply that NielsenIQ is the source of the claim itself.*

Extension: Collaborating across the supply chain to set strategy

Hort Innovation's Regional Extension Manager for North-East Australia, Dr Olive Hood, has recently been working with the avocado, berry and macadamia industries to co-design their extension strategies. These strategies are being developed as part of their current levy-funded extension projects and will be used to guide further investment in these industries.

Dr Olive Hood, Regional Extension Manager

What is an extension strategy?

I think of extension as facilitating innovation. For me, that means providing the right conditions, networks and learning experiences in the areas that industry believes will generate the biggest impact. Assessing the current conditions and networks, finding the priority areas and identifying what needs to happen is the basis of an extension strategy. This process is best done in partnership with industry, where you can leverage each other's experiences and expertise.

What difference does it make to co-design a strategy?

When we co-design we are doing so because we think that by developing something together, we will get a better product or outcome. We believe that by bringing our collective knowledge and experience to the table we will generate a much fuller picture of the opportunities and what needs to happen for us to make the most of them.

Hear from Anne Larard, Industry Development Manager for Avocados Australia

"By bringing together different stakeholders across the avocado industry to co-design an extension strategy we have been able to gain a greater depth of understanding of our extension needs and challenges, and also generate a broader set of ideas due to the diversity in perspectives.

Having growers engaged in the process from the start not only encourages their future commitment to our extension activities, but also gives them greater insight into the value of this levy-funded project. Furthermore, by being more strategic in the way we target our efforts on priority extension activities and tools, we also ensure that the return on investment on grower levy funds is maximised.

A co-design approach should deliver more significant progress (in both scale and pace) towards industry goals due to the increased impact that results from the improved participation and the strategic focus of the extension services provided."

Who is involved?

Innovation usually requires several stakeholder groups to shift their approach at the same time for real, impactful change to occur. For example, on-farm pest and disease management is influenced by supply chain protocols, government policy and regulation, consumer sentiment, research and development, and service sector capacity and resources. This means all these stakeholder groups would need to be engaged in co-designing the opportunities and the best strategies for taking advantage of them.

What is your role?

We are working with the projects leads of several of our extension projects as they engage with their growers and service and supply chain participants to develop their extension strategies. As this is a new approach, we are learning together with them about how to best go about this and what works. We really appreciate the industries that have agreed to collaborate with us on this, and we can see the benefits from doing this in partnership to create more effective extension strategies.

What benefits does co-designing bring to growers?

We all benefit from a co-design approach. By sharing our understanding of our industry's priorities, conditions, networks and opportunities we learn from each other and gain a clearer understanding of our role and responsibility in promoting change. Industry benefits from the efficiencies and clarity that is gained when the people who support them have a shared goal and view on how to achieve it. Avoiding duplication, reducing mixed messaging and identifying clear gaps where resources are needed is essential. The result is a higher performing innovation system which means growers receive benefits from their innovation investments earlier and that those benefits are maximised.

Avocado growers meet in Ravensbourne for the South Queensland Regional Forum in February 2022

Connect with your research and development corporation.
Visit **www.horticulture.com.au** for more about Hort Innovation and our work on your behalf, including details of all our investments.

Communications Manager
Hort Innovation
Level 7, 141 Walker Street
North Sydney NSW 2060
Australia

Email: communications@horticulture.com.au
Phone: 02 8295 2300