

# What happened in the Vegetable Fund last year?

Annual Report 2021/22



# About Hort Innovation and the Vegetable Fund

Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australia's horticulture sector. We work closely with industry to invest the vegetable R&D levy, together with Australian Government contributions, into key initiatives for growers, through the Vegetable Fund. We're proud of the work we do to help drive productivity, profitability, and demand for vegetable growers and the horticulture sector.

Read on for an overview of what Hort Innovation delivered in the Vegetable Fund during the year.

We also encourage you to download a copy of the overarching Hort Innovation Annual Report 2021/22 at [www.horticulture.com.au/annual-report-portal](http://www.horticulture.com.au/annual-report-portal) to see how Hort Innovation worked to benefit the horticulture sector during the year.

## In this report...

**Vegetable Fund snapshot 1**

**Some of things delivered for you during the year 2**

**Here's how your R&D levy was invested over the year 3**

**Investments 4**

**Financial operating statement 8**

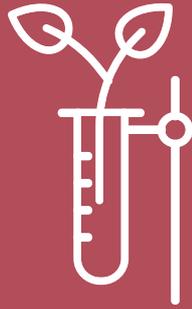
**Fund management 9**

**Meet a grower 10**

**Minor use permits 12**

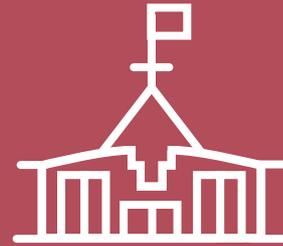
**Appendix: How strategic levy investments are made 13**





**\$15.67M**

invested in R&D



**\$10.77M**

in levies collected

by the Government and passed on to Hort Innovation for investment

### Industry facts



**\$899.8M**

Over the last eight years since 2012/13, the volume and value of vegetable production has increased by 253,317 tonnes (21 per cent) and \$899.8 million (46 per cent) respectively



**\$209M**

The value of fresh leviabile vegetable exports in 2020/21 was \$209 million, with 46 per cent generated from carrots (\$97 million)



**\$495M**

Vegetable crops with the highest farm-gate value in 2020/21 were leafy salad vegetables (\$495 million), Brussels sprouts (\$258.9 million), carrots (\$256 million), and parsley and other herbs (\$227.1 million)

These facts and more can be found in the Australian Horticulture Statistics Handbook, which is delivered by Hort Innovation each year. The handbook is packed with horticulture statistical information and analysis for some 75 categories. See [www.horticulture.com.au/horticulture-statistics-handbook](http://www.horticulture.com.au/horticulture-statistics-handbook).

### Consumer insights



**66.4**

On average, Australian households purchased vegetables 66.4 times in 2021/22.



**9.2M**

9.2 million households bought carrots, 7.3 million households bought capsicums and 8.8 million bought fresh salad



**14.1**

On average, Australian households bought cucumbers 14.1 times in 2021/22

These insights were made available through the Harvest to Home platform ([www.harvesttohome.net.au](http://www.harvesttohome.net.au)) delivered as part of an investment providing regular consumer behaviour data and insight reporting.

# Just some of the things delivered for you during the year



**Collaboration between the melon, onion and vegetable industries** on a new export program to build export capability and capacity – see [hortinn.com/mt21009](https://hortinn.com/mt21009)



**Access to consumer insights through multi-industry investments** to understand consumer behaviours, attitudes and purchase intentions – see [www.horticulture.com.au/vegetable](https://www.horticulture.com.au/vegetable)



**Rapid co-development of an integrated management strategy** to prepare the vegetable industry for the incursion of fall armyworm – see [hortinn.com/vg20003](https://hortinn.com/vg20003)



**Support for the National Bee Pest Surveillance program** to help safeguard honey-bee and pollinator-dependent industries in Australia – read more at [hortinn.com/mt21008](https://hortinn.com/mt21008)



**The industry communications program** delivering the *Vegetables Australia* magazine, AUSVEG weekly newsletter and much more – see [hortinn.com/vg18000](https://hortinn.com/vg18000)



**New VEGNET program** to support growers in adopting best practices on-farm – hear from some of the vegetable growers involved on [p10](#)



**HARVEST TO HOME**

**Vegetable Harvest to Home dashboards** providing regular household purchase data and insight reporting at [www.harvesttohome.net.au](https://www.harvesttohome.net.au)



**frontiers**

**Investments in the Hort Frontiers strategic partnership initiative** to address longer-term and often complex issues and opportunities critical to the future of Australian horticulture – see [www.horticulture.com.au/hort-frontiers](https://www.horticulture.com.au/hort-frontiers)\*

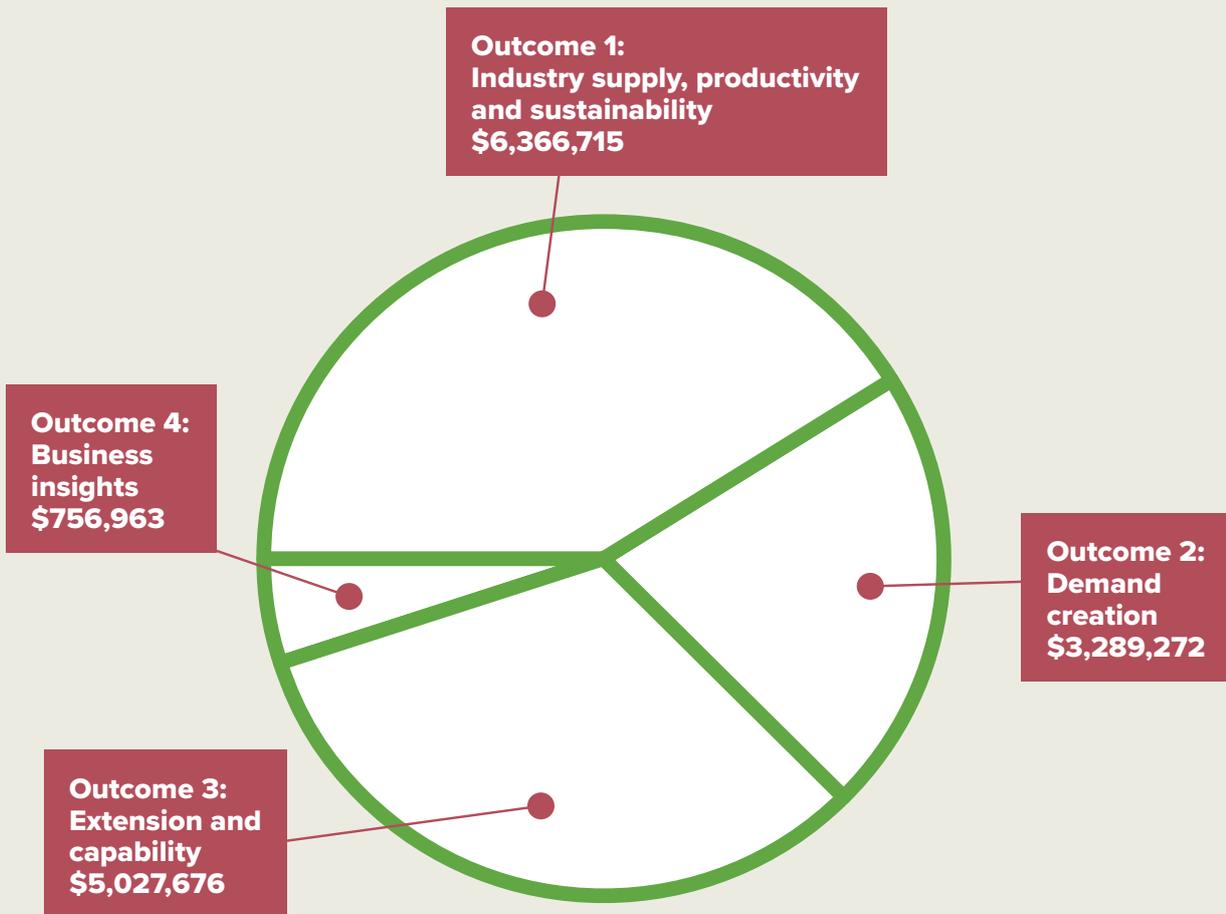


**Projects supported by grants secured by Hort Innovation**, ranging from cross-sector Rural R&D for Profit initiatives to horticulture-specific work to aid in access to crop protection products – see the Hort Innovation Annual Report 2021/22 for more details\*

You can visit [www.horticulture.com.au/vegetable](https://www.horticulture.com.au/vegetable) at any time to access information on new, ongoing and completed projects, and to download resources produced by your levy investments.

\*These initiatives were delivered outside of the Hort Innovation Vegetable Fund and, in most instances, did not involve the industry levy

# Here's how your R&D levy was invested over the year



The vegetable Strategic Investment Plan (SIP) guides investments specific to the Hort Innovation Vegetable Fund. The SIP features priority outcome areas identified and agreed upon by the industry. Hort Innovation works to invest in R&D initiatives aligned to these.

The above chart shows how project expenditure in the Vegetable Fund during 2021/22 was aligned to the SIP. We have allocated each project to a SIP outcome based on its primary objective.

# Which projects were in each of the SIP outcome areas?

## Outcome 1: Industry supply, productivity and sustainability

The Australian vegetable industry has increased profitability, efficiency and sustainability through innovative R&D, uptake of new technologies, sustainable best management practices (BMPs) and cultivars.

Project title and code	2021/22 investment	Status	More information
<b>SITplus: Port Augusta Qfly SIT factory pilot operation</b> (FF18003)	\$69,464	Ongoing	<a href="http://hortinn.com/ff18003">hortinn.com/ff18003</a>
<b>National Fruit Fly Council Phase 4</b> (FF20000)	\$8,000	Ongoing	<a href="http://hortinn.com/ff20000">hortinn.com/ff20000</a>
<b>Plant Biosecurity Research Initiative – Phase 2</b> (HA19007)	\$14,850	Ongoing	
<b>National tomato potato psyllid and zebra chip surveillance</b> (MT18008)	\$60,176	Ongoing	<a href="http://hortinn.com/mt18008">hortinn.com/mt18008</a>
<b>Parasitoids for the management of fruit flies in Australia</b> (MT19003)	\$20,000	Completed	<a href="http://hortinn.com/mt19003">hortinn.com/mt19003</a>
<b>Across horticulture support for export MRL compliance</b> (MT19006)	\$19,165	Ongoing	<a href="http://hortinn.com/mt19006">hortinn.com/mt19006</a>
<b>Field-based testing for fall armyworm, Spodoptera frugiperda</b> (MT19014)	\$12,900	Completed	<a href="http://hortinn.com/mt19014">hortinn.com/mt19014</a>
<b>Identifying potential parasitoids of the fall armyworm, Spodoptera frugiperda, and the risk to Australian horticulture</b> (MT19015)	\$54,166	Completed	<a href="http://hortinn.com/mt19015">hortinn.com/mt19015</a>
<b>Management strategy for serpentine leafminer, Liriomyza huidobrensis</b> (MT20005)	\$177,337	Ongoing	<a href="http://hortinn.com/mt20005">hortinn.com/mt20005</a>
<b>Regulatory support and coordination (pesticides)</b> (MT20007)	\$57,078	Ongoing	<a href="http://hortinn.com/mt20007">hortinn.com/mt20007</a>
<b>National Bee Pest Surveillance Program: Transition program</b> (MT21008)	\$50,169	Ongoing	<a href="http://hortinn.com/mt21008">hortinn.com/mt21008</a>
<b>iMapPESTS: Sentinel Surveillance for Agriculture</b> (ST16010)	\$1,753,692	Ongoing	<a href="http://hortinn.com/st16010">hortinn.com/st16010</a>
<b>Generation of data for pesticide applications in horticulture crops 2018</b> (ST17000)	\$35,356	Ongoing	<a href="http://hortinn.com/st16006-st17000-and-mt17012">hortinn.com/st16006-st17000-and-mt17012</a>
<b>Vegetable industry minor use program</b> (VG16020)	\$12,000	Ongoing	<a href="http://hortinn.com/vg16020">hortinn.com/vg16020</a>

Continued

## Investments

### Outcome 1: Industry supply, productivity and sustainability (continued)

Project title and code	2021/22 investment	Status	More information
<b>The EnviroVeg Program 2017-2022</b> (VG16063)	\$256,566	Completed	<a href="http://hortinn.com/vg16063">hortinn.com/vg16063</a>
<b>Research and operations to trial innovation glass and photovoltaic technologies in protected cropping</b> (VG16070)	\$30,000	Completed	<a href="http://hortinn.com/vg15038-and-vg16070">hortinn.com/vg15038-and-vg16070</a>
<b>Area wide management of vegetable diseases: viruses and bacteria</b> (VG16086)	\$2,460,502	Ongoing	<a href="http://hortinn.com/vg16086">hortinn.com/vg16086</a>
<b>National Vegetable Protected Cropping Centre</b> (VG17003)	\$800,000	Completed	<a href="http://hortinn.com/vg17003">hortinn.com/vg17003</a>
<b>Internal fruit rot of capsicum</b> (VG17012)	\$68,820	Ongoing	<a href="http://hortinn.com/vg17012">hortinn.com/vg17012</a>
<b>Vegetable Strategic Agrichemical Review Process (SARP) report updates</b> (VG18004)	\$24,200	Completed	<a href="http://hortinn.com/vg18004">hortinn.com/vg18004</a>
<b>Support services for VG16086</b>	\$1,288	Completed	
<b>Support services for VG18004 SARP reports</b>	\$18,400	Completed	
<b>Co-developing and extending integrated Spodoptera frugiperda (fall armyworm) management systems for the Australian vegetable industry</b> (VG20003)	\$42,586	Ongoing	<a href="http://hortinn.com/vg20003">hortinn.com/vg20003</a>
<b>Glasshouse films</b> (VG21006)	\$320,000	Ongoing	

### Outcome 2: Demand creation

Demand creation supports the Australian vegetable industry to develop existing and future domestic and international markets.

Project title and code	2021/22 investment	Status	More information
<b>Essential market access data packages</b> (MT14052)	\$139,941	Ongoing	<a href="http://hortinn.com/mt14052">hortinn.com/mt14052</a>
<b>Multi-industry export program (Vegetables, Onions and Melons)</b> (MT21009)	\$2,317,952	Ongoing	<a href="http://hortinn.com/mt21009">hortinn.com/mt21009</a>
<b>Australian horticulture international demand creation</b> (ST21007)	\$2,438	Ongoing	<a href="http://hortinn.com/st21007">hortinn.com/st21007</a>
<b>Tools and interventions for increasing children's vegetable knowledge</b> (VG16064)	\$665,600	Ongoing	<a href="http://hortinn.com/vg16064">hortinn.com/vg16064</a>
<b>Alternative disinfestation for market access for crops affected by tomato potato psyllid</b> (VG17015)	\$163,342	Ongoing	<a href="http://hortinn.com/vg17015">hortinn.com/vg17015</a>

## Investments

### Outcome 3: Extension and capability

Improved capability and an innovative culture that maximises investments in productivity and demand and builds a resilient Australian vegetable industry.

Project title and code	2021/22 investment	Status	More information
<b>VegNET – Victoria (South-East, West and Northern Regions)</b>	\$36,207	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNET – Gippsland</b>	\$13,324	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNET Tasmania</b>	\$28,019	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>Attracting new entrants into Australian horticulture – promoting careers in horticulture</b> (LP15006)	\$42,000	Ongoing	<a href="http://hortinn.com/lp15006">hortinn.com/lp15006</a>
<b>Advancing women’s leadership across the Australian horticultural sector</b> (LP16000)	\$12,000	Completed	<a href="http://hortinn.com/lp16000">hortinn.com/lp16000</a>
<b>Leadership development program</b> (MT18016)	\$1,493	Completed	<a href="http://hortinn.com/mt18016">hortinn.com/mt18016</a>
<b>VegPRO education and training initiative (VegPRO)</b>	\$24,660	Completed	<a href="http://hortinn.com/vg16031">hortinn.com/vg16031</a>
<b>Soil wealth and integrated crop protection – phase 2</b> (VG16078)	\$652,987	Ongoing	<a href="http://hortinn.com/vg16078">hortinn.com/vg16078</a>
<b>National vegetable industry communications program</b> (VG18000)	\$592,134	Ongoing	<a href="http://hortinn.com/vg18000">hortinn.com/vg18000</a>
<b>VegNET – Wide Bay Burnett</b>	\$36,207	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNET – Southern Queensland</b>	\$50,621	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNET – NSW</b>	\$120,680	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNET SA</b>	\$63,832	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNET – WA</b>	\$10,728	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNET NT</b>	\$48,207	Completed	<a href="http://hortinn.com/vegnet2">hortinn.com/vegnet2</a>
<b>VegNet 3.0</b> (VG21000)	\$3,053,916	Ongoing	<a href="http://hortinn.com/vg21000">hortinn.com/vg21000</a>
<b>Demonstrating the benefits of building capability and capacity in extension delivery in the vegetable industry</b> (VG21002)	\$90,823	Ongoing	<a href="http://hortinn.com/vg21002">hortinn.com/vg21002</a>
<b>Annual Vegetable Industry Seminar 2022-2024</b> (VG21003)	\$149,839	Ongoing	<a href="http://hortinn.com/vg21003">hortinn.com/vg21003</a>

## Investments

### Outcome 4: Business insights

The Australian vegetable industry is profitable through informed decision-making using consumer knowledge and tracking, trade data, production statistics and forecasting, and independent reviews.

Project title and code	2021/22 investment	Status	More information
Vegetable cluster consumer insights program (MT17017)	\$238,594	Completed	<a href="http://hortinn.com/mt17017-vegetable">hortinn.com/mt17017-vegetable</a>
Horticulture trade data (MT19005)	\$6,026	Ongoing	<a href="http://hortinn.com/mt19005">hortinn.com/mt19005</a>
Consumer demand spaces for horticulture (MT21003)	\$69,631	Ongoing	<a href="http://hortinn.com/mt21003">hortinn.com/mt21003</a>
Consumer behavioural data program (MT21004)	\$251,155	Ongoing	<a href="http://hortinn.com/mt21004">hortinn.com/mt21004</a>
Seasonal horticulture labour accommodation study (MT21007)	\$20,914	Ongoing	
Economic contribution of Australian horticulture (MT21010)	\$64,066	Ongoing	<a href="http://hortinn.com/mt21010">hortinn.com/mt21010</a>
Foodservice foundational market insights (MT21011)	\$30,478	Completed	<a href="http://hortinn.com/mt21011">hortinn.com/mt21011</a>
Pilot program: Consumer usage, attitude and brand tracking (MT21201)	\$15,731	Completed	<a href="http://hortinn.com/mt21201">hortinn.com/mt21201</a>
Consumer usage and attitude tracking 2022/23 (MT21202)	\$60,370	Ongoing	<a href="http://hortinn.com/mt21202">hortinn.com/mt21202</a>



# Financial operating statement

## Vegetable Fund Financial operating statement 2021/22

	R&D (\$)	Total (\$)
	2021/22 July – June	2021/22 July – June
<b>OPENING BALANCE</b>	<b>2,974,316</b>	<b>2,974,316</b>
Levies from growers (net of collection costs)	10,767,735	10,767,735
Australian Government money	9,568,484	9,568,484
Other income*	32,793	32,793
<b>TOTAL INCOME</b>	<b>20,369,012</b>	<b>20,369,012</b>
Project funding	15,669,105	15,669,105
Consultation with and advice from growers	32,945	32,945
Service delivery	2,314,675	2,314,675
<b>TOTAL EXPENDITURE</b>	<b>18,016,725</b>	<b>18,016,725</b>
<b>CLOSING BALANCE</b>	<b>5,007,251</b>	<b>5,007,251</b>
Levy collection costs	319,353	319,353

\* Interest, royalties

**Levy collection costs** – These are the costs associated with the collection of levies from industry charged by Levy Revenue Services (LRS)

**Service delivery** – Also known as Corporate Cost Recovery (CCR), this is the total cost of managing the investment portfolio charged by Hort Innovation

# Making sure that levy investment decisions align with industry priorities

## What will be the Vegetable Fund's focus over the next five years?



Hort Innovation developed the vegetable Strategic Investment Plan (SIP) in 2021 to reflect current priorities for the vegetable industry, involving extensive consultation with vegetable growers and industry stakeholders, including AUSVEG. The SIP is the roadmap that helps guide Hort Innovation's oversight and management of individual levy industry investment programs.

The vegetable SIP lays the foundation for decision-making in levy investments and represents the balanced interests of the vegetable industry. The most important function of the SIP is to make sure that levy investment decisions align with industry priorities.

The vegetable SIP identifies four outcome areas that will contribute to the productivity and profitability of the sector. They are:

- Industry supply, productivity and sustainability
- Demand creation
- Extension and capability
- Business insights.

## What projects will the Fund be investing in next year?

The vegetable Annual Investment Plan (AIP) 2022/23 details how Hort Innovation spends levy funds over 12 months. The vegetable industry SIP guides investment decisions, and our consultation process prioritises investments based on potential impact and levy fund availability.

Hort Innovation publishes Annual Investment Plans each year over the lifespan of the SIP and advises industry stakeholders via various communication channels.

Hort Innovation will continue to report on fund performance regularly, focusing on outcomes and the impact of investments.



Visit [www.horticulture.com.au/vegetable-fund-management](http://www.horticulture.com.au/vegetable-fund-management) to view both documents and better understand how Hort Innovation invests your levy.

# VegNET 3.0 delivers valuable Agtech knowledge to vegetable growers

## A nationally-coordinated, regionally-delivered extension program for vegetable growers

The investment *VegNet 3.0 (VG21000)* is tasked with keeping Australian vegetable growers informed about current R&D activities, results and resources – supporting the adoption of industry best practice and bolstering vegetable productivity and profitability in key growing areas across the country.

The program is nationally coordinated by AUSVEG and delivered on-the-ground by regional development

officers (RDOs) in key vegetable-growing regions who are responsible for developing and executing regional extension plans. This includes identifying each region's key priority issues and key regional resources and links – a critical step in ensuring growers receive assistance and information that meets their needs and will help them grow better crops and operate more efficient and profitable businesses.

### Spotlight: Agtech focus yields results for South Australian vegetable industry

In late 2021, regional VegNET SA provider AUSVEG SA led an innovative program to engage with Agtech start-ups in South Australia to improve engagement and knowledge sharing between growers and Agtech companies in the state. These activities were aimed at exposing growers to new technologies which can save time and resources in their businesses.



*Chris Musolino, vegetable grower from South Australia.*

VegNET SA has developed and delivered a comprehensive program of events in the Agtech space and has been able to attract additional resourcing for their South Australian program through Agrifutures Australia. Events held to date include an introductory Agtech breakfast and tour of growing regions which provided critical introductions between Agtech companies and growers interested in pursuing Agtech opportunities on their farms.

This initial event was attended by over 35 growers and Agtech companies and provided a catalyst for a number of trials and interactions between the companies and growers. As a result of the event, several growers are trialling new sales management applications, water management technologies, field robotic spraying technology and other technologies.

## Meet a grower



Following on from the initial breakfast, VegNET SA conducted significant follow-up work to assist Agtech companies and growers in facilitating several distributed trials and implemented regular catch-ups with leaders of the SA Agtech Meetup group.

In addition to trial work, VegNET SA partnered with Agrifutures Australia to deliver a dedicated workshop to growers in June, which provided support and information on how to implement Agtech on their properties and develop a specialised Agtech adoption plan. These workshops were very well received by industry. They provided critical support to growers in deciding which emerging technologies to look at and have a comprehensive way of supporting trials within their business to maximise success.

These activities show how VegNET SA has developed a comprehensive and strategic program of activities around Agtech adoption in South Australia as a crucial part of their regional focus on improving efficiency and tech adoption in our industry. As part of the process, they developed a series of connected initiatives to engage growers, with a focus on facilitating trials, showcasing local technologies and providing international learning opportunities.

As part of this process, VegNET SA developed not just a one-off workshop but a comprehensive program of events to support industry on its Agtech journey.

Regarding outcomes, VegNET SA has supported successful trials and engagements between emerging Agtech companies and the South Australian industry and delivered several events showing substantial knowledge gains as part of their monitoring and evaluation activities.

VegNET SA's focus on the Agtech program over the past year and a half has provided a strong base of knowledge and connections to support South Australian growers to adopt Agtech in their farming operations.

“

*With input costs on the rise, using advanced technology and robotics means we can cut down on costs and be more competitive in the market. Having trials and events that bring tech onto farm is extremely valuable is getting it right.”*

**Chris Musolino, T. Musolino and Co.**

# Minor use permits

The Hort Innovation Vegetable Fund supports the submission of applications for new and renewed minor use permits for the industry, as well as data generation activities to support chemical permits and registrations, and strategic agrichemical reviews.

Together these efforts provide industry access to safe, relevant and effective chemicals to manage pests, weeds and diseases.

For full details on these activities and links to relevant information, visit [hortinn.com/vegetable-minor-use](http://hortinn.com/vegetable-minor-use).

Through the *Vegetable industry minor use program* (VG16020) levy funds and Australian Government contributions are used to submit renewals and applications for minor use permits for the vegetable industry as required. These submissions are prepared and submitted to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

You can access a table of all current vegetable minor use permits from [hortinn.com/vegetable-minor-use](http://hortinn.com/vegetable-minor-use), where you'll also find details of other activities and resources in the chemical space. All current permits and the conditions of their use are also searchable at [portal.apvma.gov.au/permits](http://portal.apvma.gov.au/permits), while permit updates are circulated as they happen in Hort Innovation's *Growing Innovation* e-newsletter, which you can sign up for at [www.horticulture.com.au/sign-up](http://www.horticulture.com.au/sign-up).

## Keep up to date!

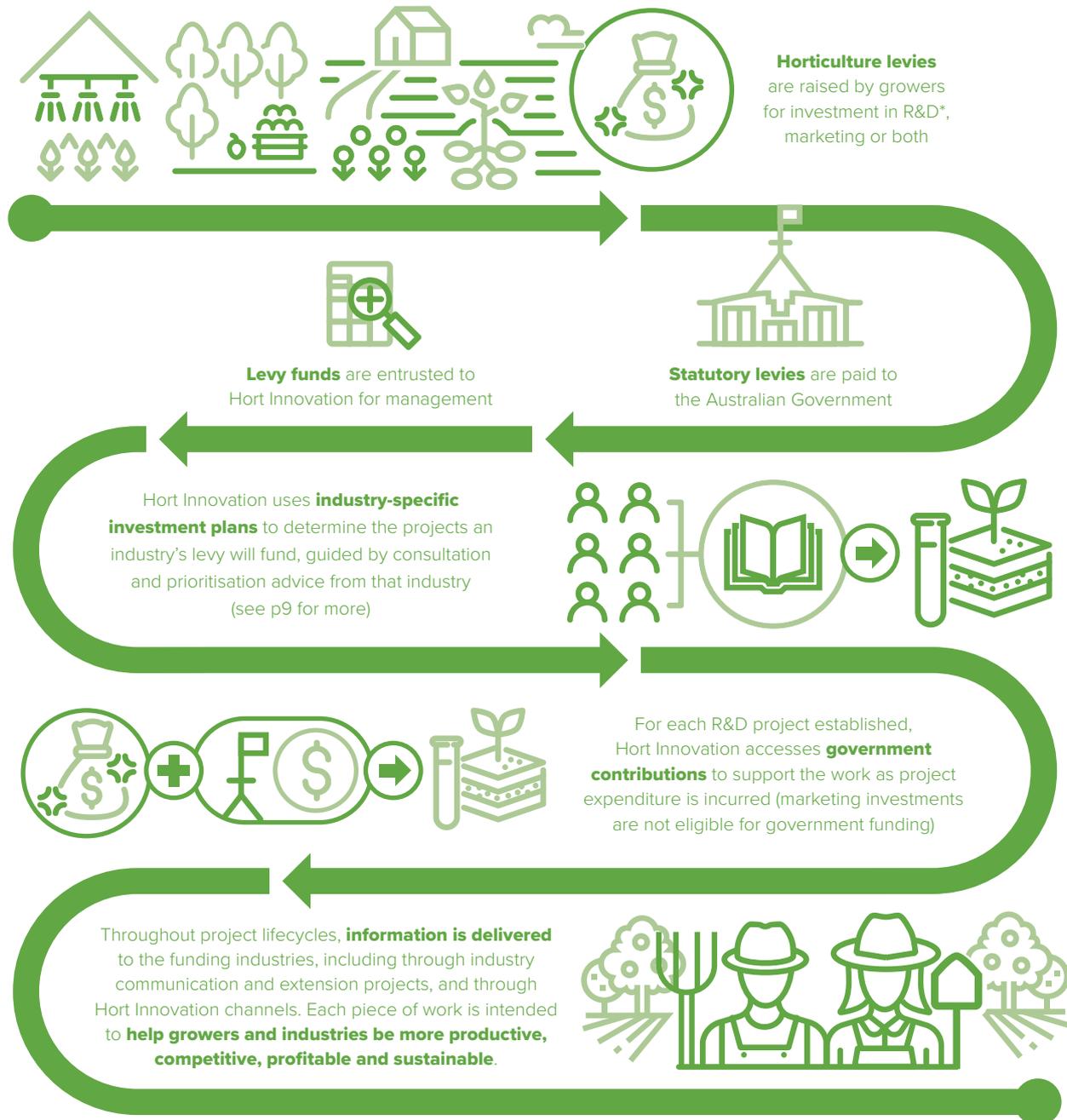
Find monthly minor use permit updates in our *Growing Innovation* e-newsletter.

Sign up for free at [www.horticulture.com.au/sign-up](http://www.horticulture.com.au/sign-up).



# How strategic levy investment are made in the Vegetable Fund

The below diagram shows how Hort Innovation makes strategic levy investments on behalf of horticulture industries. The vegetable R&D levy was invested this way during the year, guided by the vegetable Strategic Investment Plan 2022-2026 and advice from the industry’s investment advisory panel.



\* Encapsulating extension and international trade

To learn more about funding specific to the Hort Innovation Vegetable Fund, visit [www.horticulture.com.au/vegetable](http://www.horticulture.com.au/vegetable). During the year, other sources of funding were also used to support activities for the benefit of Australian horticulture, including grant funding secured by Hort Innovation, co-investment dollars brokered through our Hort Frontiers initiative and centralised strategic levy reserve.

# Hort Innovation

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