



# Mushroom Fund

Annual Report 2018/19

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**The projects in this report have been funded by Hort Innovation using sources including the mushroom levy, Australian Government contributions and, in some instances, co-contributions from a variety of sources.**



## Just some of the things your fund delivered in 2018/19:

- ✓ **The industry communications program**, delivering the *Australian Mushrooms Journal*, *Industry Update* emails and more (p8)
- ✓ **The mushroom Harvest to Home dashboard** providing regular consumer behavioural data and insight reporting, at [www.harvesttohome.net.au](http://www.harvesttohome.net.au)
- ✓ **AGORA**, the industry's knowledge database for pest and disease management ([agora.australianmushrooms.com.au](http://agora.australianmushrooms.com.au))
- ✓ A host of **new work into composting** to improve mushroom production (p7)
- ✓ **Initiatives to educate** health professionals, the foodservice industry and children on all things mushrooms (from p9)
- ✓ A highly visible and multi-pronged **domestic marketing campaign** (p15)
- ✓ **New final research reports and grower resources**, with several now available from [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom)

### 2018/19 SNAPSHOT

**\$2.15**  
**MILLION**

INVESTED  
IN R&D

**\$2.83**  
**MILLION**

INVESTED IN  
MARKETING

**30**

ACTIVE R&D  
INVESTMENTS

## Welcome

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Hort Innovation is the grower-owned, not-for-profit research and development corporation (RDC) for Australia's horticulture sector. It's our job to work with industry to invest the mushroom R&D and marketing levies, as well as Australian Government contributions, into key initiatives for growers.

The 2018/19 financial year was another great year of growing better, together – with strong investments, closer connections and critical collaborations being forged.

There was more than \$2.15 million invested into R&D through the Hort Innovation Mushroom Fund across the year, to support the industry in being as productive and profitable as possible. This included the establishment of close to 20 new investments, including work allowing the mushroom industry to join forces with other horticulture industries for maximum efficiency and impact across shared issues and opportunities.

Meanwhile in marketing, the Hort Innovation Mushroom Fund saw some \$2.83 million invested in 2018/19 into a range of activities to raise the profile and consumption of Australian mushrooms.

Read on to learn more about all of this work. And remember to take advantage of the Hort Innovation website at [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom), where you can search and find information relating to investments, past and present, at any time. The new site and its Mushroom Fund section were launched in 2018/19.

Finally, during the year there were many opportunities for Hort Innovation to connect with you, the growers. A big thank you in particular to everyone who came to our early-2019 regional roadshows to feed into the development of the new Hort Innovation Strategy 2019-2023 (read more at [www.horticulture.com.au/strategy-2019-2023](http://www.horticulture.com.au/strategy-2019-2023)).

You can reach out to us at any time to learn more about our work, to submit ideas for investments, or to simply have a chat about your industry. You'll find details of specific staff at [www.horticulture.com.au/get-in-touch](http://www.horticulture.com.au/get-in-touch), or can otherwise email [communications@horticulture.com.au](mailto:communications@horticulture.com.au) or call our general line on 02 8295 2300.



## Additional value in the year

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During 2018/19, Hort Innovation was proud to deliver extra value to the mushroom industry, outside of levy-funded initiatives within the Mushroom Fund. Here's a quick look at just some examples.

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### The new Hort Innovation website, with dedicated Mushroom Fund section

You can now visit [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom) to quickly search and find mushroom investment information and updates, project resources, and growing tips and advice from Hort Innovation's R&D work. You can also download full final research reports direct from the site, access key contact information, share your ideas and feedback, and so much more.

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### The Australian Horticulture Statistics Handbook

Each year Hort Innovation delivers an *Australian Horticulture Statistics Handbook* packed with horticulture statistical information and analysis for use by specific industries and the wider sector. The handbook combines all available data on production, international trade, processing volumes and fresh market distribution for some 75 categories. The 2017/18 edition, released in early 2019, is available from [www.horticulture.com.au/horticulture-statistics-handbook](http://www.horticulture.com.au/horticulture-statistics-handbook).

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### Hort Frontiers projects

With seven investment areas, Hort Innovation's Hort Frontiers strategic partnership initiative is about collaborative, cross-industry work to address longer-term, complex issues and opportunities identified as critical for the future of Australian horticulture. While industry levies can be invested into Hort Frontiers projects upon the advice of the relevant Strategic Investment Advisory Panels, the bulk of funding comes from broad-reaching funding relationships that are secured by Hort Innovation, plus support from the Australian Government. Learn about all of the projects and what they're delivering for you at [www.horticulture.com.au/hort-frontiers](http://www.horticulture.com.au/hort-frontiers).

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### Grant funding

In 2018/19, Hort Innovation delivered \$6.7 million worth of investments involving grant funding across the horticulture sector. To do so, we applied for and secured a range of competitive grants on behalf of industry, including through the Australian Government's Rural R&D for Profit program, Improved Access to AgVet Chemicals initiative, and Agricultural Competitiveness White Paper. With projects across a range of issues and opportunities, there are initiatives in there to directly and indirectly benefit the mushroom industry.

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## Making investments in 2018/19

Hort Innovation is dedicated to making the right investments at the right time and in the right areas, in line with identified priorities for the industry.

### Where the funding comes from

The mushroom industry's grower-raised statutory R&D and marketing levies are collected by the Australian Government and entrusted to Hort Innovation as the RDC for Australian horticulture. It's then our responsibility to work with the industry to invest these levies – together with Australian Government contributions in the case of R&D – into strategic initiatives for the benefit of growers.

Additional funding streams can also come into play, such as co-investment dollars from sources including project partners, and grant funding that Hort Innovation secures on behalf of industry.

### How decisions are made

Investment decisions in the Hort Innovation Mushroom Fund are guided by the industry's Strategic Investment Plan (SIP). This document was developed through close consultation with growers and other industry stakeholders, and outlines specific investment priorities, strategies and themes. An at-a-glance version can be found at [www.bit.ly/mushroom-plan](http://www.bit.ly/mushroom-plan), or find the full version at [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom).

The SIP is currently used like a 'roadmap' by the mushroom Strategic Investment Advisory Panel (SIAP) – a panel made up of growers and other industry representatives that's tasked with providing advice to Hort Innovation on potential levy investments.

### Turning ideas into investments

Great investments start with great ideas, and Hort Innovation encourages all growers and other industry participants to share their thoughts and suggestions for the work they want to see. Ideas can be submitted any time via Hort Innovation's investment idea form at [www.bit.ly/concept-form](http://www.bit.ly/concept-form).

Ideas that are selected for investment are worked into project proposals by Hort Innovation. These are then made public for potential delivery partners to submit responses. Current opportunities are always listed at [www.horticulture.com.au/delivery-partners](http://www.horticulture.com.au/delivery-partners).

Responses are assessed, often with the assistance of industry, and the best delivery partner for the work is chosen. A contract is then issued and the work begins.

### Keeping track of investments

All investments in the Hort Innovation Mushroom Fund are detailed on the 'Your investments' page at [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom). We also send news and alerts to Hort Innovation members and contacts – if you haven't already, you can sign up for free at [www.horticulture.com.au/sign-up](http://www.horticulture.com.au/sign-up).

Importantly, the industry's levy-funded communications program is tasked with providing growers with regular information on levy-related activity. See p8 for more.



### New investment analysis

You can now clearly see how investments in the Hort Innovation Mushroom Fund align to the industry's SIP, with new and interactive investment analysis information available from [www.bit.ly/mushroom-investment](http://www.bit.ly/mushroom-investment). The analysis currently shows the allocation of funding against each of the mushroom SIP outcomes from the start of the SIP (2016/17) to the end of 2018/19, and gives an indication of the projects that are aligned to each outcome.

## R&D project list 2018/19

NEW INVESTMENTS IN 2018/19	
MU17001	Mushroom industry conference partnership*
MU17002	Educating health professionals about Australian mushrooms
MU17004	Optimising nitrogen transformations in mushroom production
MU17005	Mushroom production waste streams – novel approaches to management and value creation
MU17006	Developing a database of bio-markers for compost quality control to maximise mushroom production yield
MU17007	Feasibility of compost substrate alternatives for mushroom production
MU17008	Understanding and managing the impacts of climate change on Australian mushroom production
MU18000	Mushroom foodservice farm tours*
MU18001	Mushroom industry communication program
MU18002	Agri-technology investment opportunities in the mushroom industry
MU18004	Mushroom consumer research*
MU18005	Australian Mushrooms – conference support*
MU18007	Australian Mushrooms crisis and risk management
MT18001	Foodservice syndicated market reports
MT18002	Foodservice custom research reports*
MT18009	Ex-post impact assessment – industry specific
MT18011	Ex-post impact assessment
MT18015	Phenomenon extension project*
MT18018	Generation of data for pesticide permit applications in horticulture crops 2019/20

\* These flagged projects both began and ended in 2018/19

ONGOING INVESTMENTS IN 2018/19	
MU16000	Food safety and QA risk management
MU16002	Mushroom industry minor use program
MU16003	Pest and disease management and research services
MU16004	Marsh Lawson Mushroom Research Centre (MLMRC)
MT17015	Consumer behavioural and retail data for fresh produce
ST16008	AgVet collaborative forum
ST17000	Generation of data for pesticide applications in horticulture crops 2018 <sup>^</sup>

<sup>^</sup> Activities for the mushroom industry under this investment are funded wholly through the government's AgVet grant program

INVESTMENTS COMPLETED IN 2018/19	
MU15001	Communication program for the Australian mushroom industry 2016-2019
MU16005	Food safety for the Australian mushroom industry
MU16006	Mushroom industry data collection project <sup>†</sup>
MU17000	AMGA project advice

<sup>†</sup> This investment was terminated during the financial year, upon the agreement of industry (via the mushroom Strategic Investment Advisory Panel), Hort Innovation and the MU16006 project team

During the 2018/19 financial year, all levy paying horticulture industries also contributed to a small selection of across-industry projects addressing issues that affect horticulture as a whole. Details of all investments that Hort Innovation manages can be found at [www.horticulture.com.au](http://www.horticulture.com.au).



**But wait, there's more.**  
**To see what Hort Innovation delivered across the entire horticulture sector in 2018/19, download the full Hort Innovation Annual Report 2018/19 from [www.horticulture.com.au/annual-report-portal](http://www.horticulture.com.au/annual-report-portal).**

## R&D report

Take a closer look at some of the key investments in the Hort Innovation Mushroom Fund during 2018/19. Any resources from these and other levy-funded projects – such as fact sheets, guides and more – are published on your grower page at [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom) as they become available.

### *Mushroom production waste streams – novel approaches to management and value creation (MU17005)*

NEW IN 2018/19

**Key research provider:** Xinoa

This investment is looking at potential value-adding or cost-saving opportunities relating to waste from Australian mushroom businesses – including spent mushroom compost and unused mushroom stems. This involves the project team investigating currently available technologies relating to waste stream management from across the world, and identifying those approaches that are the most promising for application in the Australian mushroom industry.

### *Optimising nitrogen transformations in mushroom production (MU17004)*

NEW IN 2018/19

**Key research provider:** The University of Sydney

This project will ultimately help mushroom growers to optimise the rate and timing of nitrogen additions, to achieve maximum yield and nutritional value.

The project team are currently exploring the fate of nitrogen used in mushroom production and composting, including developing a better understanding of the microorganisms that are involved in transforming the nitrogen that is added throughout the mushroom production process into other forms. They are also looking at ways and timings to maximise nitrogen use efficiency and promote nitrogen retention for composting, and more. A best practice guide for growers will be produced out of the project findings.

### *Developing a database of bio-markers for compost quality control to maximise mushroom production yield (MU17006)*

NEW IN 2018/19

**Key research provider:** The University of Sydney

The quality and yield of button mushroom crops is critically dependent on the quality of compost used. This investment is exploring how microbial populations within compost can be used to understand, measure and manipulate compost quality.

The project team's work involves investigating microbial populations across a range of mushroom composting facilities. This includes looking at the microbial population dynamics at different points along the composting timeline, how they align with other compost quality indicators, and correlating everything back to mushroom crop yield and quality.

The research will culminate in a database of compost 'bio-markers' (microbe indicators) for the industry, which will be able to be used to assist in maximising productivity and crop outcomes.

### *Feasibility of compost substrate alternatives for mushroom production (MU17007)*

NEW IN 2018/19

**Key research provider:** Murrang Earth Sciences

Wheaten straw is currently the most common carbon source used in mushroom compost production, but is predicted to become more difficult to acquire and more expensive over time. So to help future-proof the mushroom industry, this investment is exploring alternative sources of carbon.

The research team is looking at the physical and chemical properties, compost quality, relative benefits and potential risks of a range of possible carbon sources. They hope to be able to present a selection of new sources or options – such as partial substitutions – for industry to consider for compost production.

The work will also produce clear guidance and case studies to assist in the adoption of alternative substrates.





## Agri-technology investment opportunities in the mushroom industry (MU18002)

NEW IN 2018/19

**Key research provider:** KPMG

The appetite and potential for implementing technology solutions along the mushroom value chain is growing, and with it the potential to lower production costs, increase yields and improve product qualities.

This investment is helping the Australian industry explore the current global landscape of agri-technology solutions being used in mushroom growing, with a focus on those that may be most advantageous for Australian growers.

## Understanding and managing the impacts of climate change on Australian mushroom production (MU17008)

NEW IN 2018/19

**Key research provider:** Applied Horticultural Research

Climate variability and change present a range of potential risks to the technical and economic viability of Australian mushroom growers, compost producers and support industries. This investment is identifying these climate-related risks as they occur across production regions, now and into the future. It is also working with industry on a regional basis to look at how to manage these risks and how to reduce greenhouse gas emissions to help mitigate them, while providing education on how improving environmental performance can be used to a marketing advantage.

## Mushroom industry communications program (MU18001)

NEW IN 2018/19

**Key research provider:** Team Rowley

Beginning in 2019 to carry on from the now-concluded **Communication program for the Australian mushroom industry 2016-2019 (MU15001)**, this investment delivers effective and timely communications to ensure Australian mushroom growers and other industry stakeholders are kept up-to-date with the latest mushroom R&D and marketing investments, developments and outcomes, and other industry news and information.

Like its predecessor, the new program produces and maintains a number of regular communication channels, including but not limited to:

- » The quarterly *Australian Mushrooms Journal*, delivered electronically
- » The monthly *Industry Update* e-newsletter
- » Support with the maintenance and upgrading of AGORA, the industry's pest and disease knowledge management and communication system that is housed within the industry website, [www.australianmushrooms.com.au](http://www.australianmushrooms.com.au)
- » YouTube videos on R&D investments.

If you're involved in the mushroom industry and don't currently receive the industry magazine or newsletter, contact Chris Rowley at [chrisrowley@optusnet.com.au](mailto:chrisrowley@optusnet.com.au) to be added to the distribution list. Likewise, if you have team members or know of any additional people that would benefit from a wider understanding of the issues affecting the industry, encourage them to be in touch.

## Australian Mushrooms crisis and risk management (MU18007)

NEW IN 2018/19

**Key research provider:** Porter Novelli

This investment is refreshing and maintaining a crisis and reputation risk management plan for the Australian mushroom industry. In the event of an issue or crisis, having a clear plan in place ensures the industry is prepared with the information and processes needed to respond effectively, responsibly and in a coordinated, unified way. A plan, and the relevant training this project will deliver, also ensures that stakeholders involved in crisis response for the industry understand the process and are equipped and ready to be involved.

## Educating health professionals about Australian mushrooms (MU17002)

NEW IN 2018/19

**Key research provider:** Nutrition Research Australia

This education program is all about delivering research and information on the nutritional benefits of mushrooms to Australian health professionals including dietitians, nutritionists, GPs and more. The project team is bringing together the latest science on the health benefits of mushrooms, and using this for the development and dissemination of evidence-based messages and tools. The ultimate goal is to educate and empower these health professionals to in turn motivate their patients and clients to include mushrooms in their diets.

Apart from reviewing and consolidating research, specific project activities include a review of the health and science section of the [www.australianmushrooms.com.au](http://www.australianmushrooms.com.au) website,

presentations at relevant professional conferences, the distribution of materials such as brochures and e-newsletters, and other engagement activities for health professionals such as webinars and an expert roundtable event.

## Phenomenom extension project (MT18015)

NEW IN 2018/19 & NOW COMPLETE

**Key research provider:** Edible Adventures Productions

With a focus on educating kids about veggies, the Phenomenom initiative ([www.phenomenom.com.au](http://www.phenomenom.com.au)) was initially delivered through the Hort Innovation Vegetable Fund. Through this subsequent investment, Phenomenom was expanded to include both mushrooms and onions, to help increase education around and attitudes towards these foods.

The work resulted in the addition of new online Phenomenom resources for kids, their teachers, parents and caregivers, including 'webisode' (video) content with mushrooms and onions, and downloadable teaching resources featuring Australian mushroom and onion growers. New audio podcast material was also developed.

Survey results following the release of the new material found that two thirds of students were more interested in learning about food and nutrition, more than two thirds wanted to try more vegetables, and a quarter would ask their family to try more mushrooms. Of the teachers surveyed about Phenomenom and its resources, 70 per cent thought it was "better than any other teaching resource" and were highly likely to share and recommend to others.

Full details can be found in the project's final research report, which can be downloaded from [www.bit.ly/mt18015](http://www.bit.ly/mt18015).



## Mushroom foodservice farm tours (MU18000)

NEW IN 2018/19 & NOW COMPLETE

**Key research provider:** Straight to The Source

This investment was all about educating the Australian foodservice industry about mushrooms. During 2019, it facilitated a series of mushroom farm tours for chefs and hospitality professionals in New South Wales, South Australia, Victoria and Queensland.

The events showcased how Australian mushrooms are grown, and provided a better understanding of and connection to the people involved in the industry (from growing and harvesting through the supply chain). It also provided education on the versatility of mushrooms in culinary applications, the health benefits of using them, and new and novel ways to use mushrooms in cooking.

The tours included interactive cooking activity using locally sourced produce in each state. Here the objective was to increase the culinary confidence of the participants and to help stimulate new ideas for using mushrooms in innovative ways, upskilling culinary literacy for all participants.

Feedback from attendees was positive with 100 per cent of the 75 decision-making chefs indicating that the tour had enhanced their knowledge of how Australian mushrooms are grown and cultivated. Every attendee indicated that they would recommend this tour to other chefs in their network.

## Foodservice custom research reports (MT18002)

NEW IN 2018/19 & NOW COMPLETE

**Key research provider:** Food Industry Foresight

This multi-industry market research investment delivered key insights around the foodservice industry for the mushroom, avocado and onion industries. It produced information such as the total foodservice market sizes for the products, along with details on trends and opportunities. The information will be available for use in any future levy-funded projects and programs targeting the foodservice sector, from commercial businesses and staff to related training institutes and their students.

## Mushroom consumer research (MU18004)

NEW IN 2018/19 & NOW COMPLETE

**Key research provider:** Fiftyfive5

This investment undertook consumer research to deliver insights specifically around the key Australian Mushrooms target audience of 'less confident cooks'. Its findings will be used to inform future Hort Innovation Mushroom Fund marketing activities, and will be available as insights for the mushroom industry at large.

The work also identified key targets and opportunities for growth in the future.



Some of the findings included that there has been a significant increase in the proportion of home-cooked meals containing mushrooms, and attitudes towards mushrooms continue to become more positive. The work also identified that there is still room to grow, with 'disengaged cooks' presenting the largest growth opportunity for the industry.

## Mushroom industry conference partnership (MU17001)

NEW IN 2018/19 & NOW COMPLETE

**Key research provider:** Australian Mushroom Growers' Association

This investment supported the Australian Mushroom Growers' Association 2018 Conference, which was held in Sydney in October 2018. Held every two years, the event is a chance for mushroom industry participants to come together to connect with and learn from each other and from expert speakers. In 2018, attendees heard about everything from new and exotic mushrooms and their opportunities in Australia, to vital information on food safety. Hort Innovation was in attendance to present information from the levy-funded R&D and marketing programs, too.

## Food safety for the Australian mushroom industry (MU16005)

NOW COMPLETE

**Key research provider:** Fresh Produce Safety Centre A-NZ

This investment investigated food safety risks within mushroom production systems. It was responsible for:

- » Bringing together existing research and information on food safety in Australia's mushroom industry, and on foodborne pathogens including listeria species, salmonella species and *E. coli*
- » Conducting surveys on mushroom farms to look at pathogen loads in compost, on casing and on fresh mushrooms over a 12-month period
- » Using a lab-based trial to investigate the potential for change in microbial loads over time for a range of processing and food chain scenarios.

## Food safety and QA risk management (MU16000)

**Key research provider:** Scheme Support Services

Beginning in early 2017, this project is building on the foundations of the industry's long-running Food Safety and Quality Assurance Risk Management Service (FSQARMS) program. It provides an effective risk management mechanism at both an individual business and broader industry level, through programmed, proactive and reactive activities.

The project aims to raise awareness across a broad range of risk management areas, and to provide mushroom growers with the knowledge and tools to better manage those risks. Through collaboration and information sharing, the project acts as a conduit to both raise and address issues in the food

safety and wider compliance space. The strategic direction for risk management activities is informed through input to and outputs from this initiative.

This investment is closely linked to other Hort Innovation Mushroom Fund projects including MU16003, described below.

## Pest and disease management and research services (MU16003)

**Key research provider:** University of Tasmania

Beginning in late 2017, this investment is about assisting growers in understanding and managing key pests and diseases of mushrooms.

It is tasked with delivering new farm-focused resources and education, and with maintaining AGORA, the industry's web-based pest and disease management knowledge database, which was established in earlier levy-funded work. Accessing AGORA via [agora.australianmushrooms.com.au](http://agora.australianmushrooms.com.au) requires an assigned username and password. If you're unsure of your details, require access for new staff members, or would like to arrange a time for a phone tutorial on how to use AGORA, contact Judy Allan at [judyallan@bigpond.com](mailto:judyallan@bigpond.com).

The project's ultimate goal is to reduce the threat and costs of both endemic and exotic mushroom pests and diseases. Specific activities over the course the work include:

- » Conducting a review of new and emerging pathogens, including the bacterial *Janthinobacterium agaricidamnosum*, *Burkholderia gladioli pv agaricola*, *Ewingella americana* and *Psuedomonas agarici*; the fungal *Syzygites megalocarpus*, *Mycogone perniciosa* and *Trichoderma aggressivum*; and the viral mushroom X virus
- » Creating new and emerging symptom recognition resources for use on-farm
- » Delivering grower alerts about any activity of the pathogens in Australia
- » Delivering updates and information to growers at industry events and in the levy-funded *Australian Mushrooms Journal*.

## Marsh Lawson Mushroom Research Centre (MLMRC) (MU16004)

**Key research providers:** The University of Sydney and Applied Horticultural Research

Beginning in mid-2017, this project supports the running and development of the Marsh Lawson Mushroom Research Centre (MLMRC) at the University of Sydney. The MLMRC is a world-class facility dedicated to mushrooms, and the research that takes place there will help the mushroom industry drive innovation, adopt best practice and tackle issues, while encouraging new expertise in the industry.

Continued >>



During the life of the project, the facility will grow in size and capability, with the addition of new growing rooms and a purpose-built compost research facility.

There is a steering committee for the centre and its work, which has aligned the operation of the MLMRC to the mushroom industry's Strategic Investment Plan and will help progress research needs and ideas that will be fulfilled through the centre.

### Consumer behavioural and retail data for fresh produce (MT17015)

**Key research provider:** Nielsen

This multi-industry investment is tasked with providing regular consumer behaviour data and insight reporting to a range of industries, through the Harvest to Home platform ([www.harvesttohome.net.au](http://www.harvesttohome.net.au)).

The platform has a dedicated dashboard for mushrooms, making data and reporting easily accessible for industry participants. The information is intended to assist growers and supply chain partners in decision-making for their businesses and, for the wider industry, the data and insights are available to support strategic activities, as well as Hort Innovation Mushroom Fund marketing plans.

### Mushroom industry minor use program (MU16002)

**Key research provider:** Hort Innovation

Through this project, levy funds and Australian Government contributions are used to submit renewals and applications for minor use permits for the mushroom industry as required. These submissions are prepared and submitted to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

For more on minor use permits, including a list of permits, see p13.

All current minor use permits for the industry are searchable at [portal.apvma.gov.au/permits](http://portal.apvma.gov.au/permits). Permit updates are also circulated 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).

### Data generation investments (ST17000 and MT18018)

NEW IN 2018/19 (MT18018)

**Key research providers:** Eurofins and Peracto

The generation of pesticide residue, efficacy and crop safety data is required to support label registration and minor use permit applications made to APVMA which, when approved, provide access to safe and effective chemicals for the management of pests, weeds and diseases.

The projects *Generation of data for pesticide applications in horticulture crops 2018 (ST17000)* and *Generation of data for pesticide permit applications in horticulture crops 2019/20 (MT18018)* are responsible for generating the data needed to support a range of registration and minor use applications across a variety of horticulture crops, including mushrooms. Work for the mushroom industry under ST17000 is funded wholly by grant funding secured by Hort Innovation under the Australian Government's Access to Industry Uses of Agricultural and Veterinary (AgVet) Chemicals program.

### Impact assessment work

During 2018/19, Hort Innovation engaged independent consultants to evaluate the impact of our R&D investments. This included looking across a random sample of all Hort Innovation R&D projects completed in the 2017/18 financial year, plus a specific look at the impact of work within the Hort Innovation Mushroom Fund. The assessments revealed a range of economic and social benefits being generated for growers, supply chain participants and the community at large. The results also highlighted the value of these benefits in monetary terms.

Results and information on the whole-of-R&D impact assessment, facilitated through the project *Ex-post impact assessment (MT18011)*, can be found at [www.horticulture.com.au/mt18011](http://www.horticulture.com.au/mt18011). The work specific to the Mushroom Fund took place through the investment *Ex-post impact assessment – industry specific (MT18009)* and you can download a fact sheet on the results, plus find full assessment documents, at [www.horticulture.com.au/mt18009](http://www.horticulture.com.au/mt18009).



**To keep up to date with the latest information on new, ongoing and recently completed R&D investments throughout the year – and to search and find resources and reports from these investments – visit [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom).**

## Minor use permits

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The Hort Innovation Mushroom 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 for the management of pests, weeds and diseases.

For full details on these activities and links to relevant information, visit [www.bit.ly/minor-use-mushroom](http://www.bit.ly/minor-use-mushroom).

### Permits in 2018/19

During the 2018/19 financial year, successful renewal applications for PER14350 (issued as PER87515) and PER14949 were prepared by Hort Innovation and submitted to the APVMA, facilitated through the *Mushroom industry minor use program* (MU16002).

Details for these and all other permits can be found in the following table.



## Current permits

Below is a list of minor use permits for the mushroom industry, current as of 19 September 2019.

PERMIT ID	DESCRIPTION	DATE ISSUED	EXPIRY DATE	PERMIT HOLDER
PER12172 Version 4	Pyrethrins + piperonyl butoxide (Pyzap Insecticide) / Mushrooms / Mushroom flies  <i>Please note: This permit formerly covered SUPAPY Insecticide, but this product has since been registered by Botanical Resources Australia</i>	01-Jul-10	30-Sep-22	Australian Mushroom Growers' Association (AMGA)
PER12645 Version 2	Prochloraz (Octave WP Fungicide) / Mushrooms / Cobweb disease	01-Apr-12	31-Mar-22	AMGA
PER12782 Version 2	Bioresmethrin + piperonyl butoxide (David Grays Thermal Fogging and ULV Insecticide) / Mushroom compost manufacturing and operation halls / Mushroom flies and mosquitoes (NSW only)	07-Aug-13	30-Sep-20	ELF Farm Supplies
PER12847 Version 2	Abamectin / Cultivated mushrooms / Red pepper mites, mushroom pygmy mites and soilborne nematodes of the family <i>Rhabditidae</i>	15-Apr-14	30-Jun-22	AMGA
PER12965 Version 2	Imazalil (Imazagard) / Cultivated mushrooms ( <i>Agaricus bisporus</i> only) / Green mould	31-Jul-12	31-Jul-22	AMGA
PER87515 (replaced PER14350)	<i>Bacillus thuringiensis</i> subsp. <i>israelensis</i> serotype H14 (Vectobac WG Biological Larvicide) / Mushrooms / Sciarids	15-Mar-19	30-Jun-24	Hort Innovation
PER14949 Version 2	Carbendazim (Howzat SC fungicide) / Mushrooms / Dry bubble, wet bubble and green mould	16-Mar-16	28-Feb-21	AMGA

All efforts have been made to provide the most current, complete and accurate information on these permits, however you should always confirm all details on the APVMA website at [portal.apvma.gov.au/permits](http://portal.apvma.gov.au/permits). Details of the conditions of use associated with these permits can also be found on the APVMA site.

**Minor use permit updates are circulated in Hort Innovation's e-newsletter, *Growing Innovation*. Don't yet receive it? Sign up for free at [www.horticulture.com.au/sign-up](http://www.horticulture.com.au/sign-up).**

## Marketing report

Hort Innovation is responsible for investing the mushroom marketing levy into a range of activities which drive awareness and consumption, under the Hort Innovation Mushroom Fund. Read on for a snapshot of activities and results from 2018/19.

Embedding key messages of taste, ease and health – and keeping mushrooms top of mind on the path to purchase – the 2018/19 marketing program included a full mix of activities. These ranged from TV and digital advertising, to high-impact in-store sampling, an ongoing social media campaign, an ambassador strategy and more.

### Advertising activity

#### Television

Television played a key role in driving mass awareness of campaign communications and ensured key Australian Mushrooms messages were shared to a wide audience.

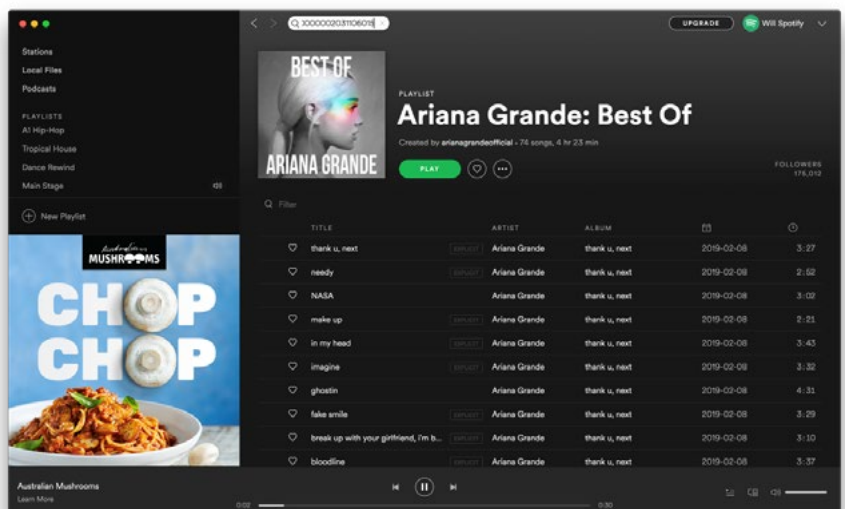
The television campaign hit the air in an initial five-week burst from August to September 2018. From March to April 2019 a second burst was run across key metro and regional networks including Seven, Nine, Ten, WIN, Southern Cross Austereo (SCA) and Prime. The campaign took advantage of the strong opening programming schedule of 2019 which included programs such as *My Kitchen Rules*, *Bachelor in Paradise*, *Dancing With The Stars* (featuring Australian Mushrooms Ambassador Miguel Maestre) and *Married At First Sight*.

This was also bolstered by advertising during news and current affairs programs such as *The Project*, *Nine News* and *A Current Affair*.

The aim of the television campaign was for 33 per cent of the target audience to see the ad at least two times. Across both metro and regional markets the campaign successfully reached or surpassed this goal. Sydney and Brisbane metro markets reached a total of 35 per cent of the target audience each, while 37 per cent were hit in regional southern New South Wales and 47 per cent in regional Tasmania. Australian Mushrooms appeared in eight out of the top 10 metro television programs during the campaign.

#### Radio and Spotify

From February to March 2019 Australian Mushrooms partnered with Nova and Australian Radio Network (ARN) to drive awareness and frequency of mushroom messaging on radio in key metro markets. Activities focused on peak commute timings, on stations such as KISS, Nova, 96 FM, and Cruise 132.3. Sydney, Melbourne, Adelaide and Perth hit campaign targets of reaching at least 29 per cent of the audience twice throughout the campaign, with Adelaide







hitting a total of 37 per cent of the audience twice. Meanwhile, 351 bonus spots were secured across both ARN and Nova, equating to a total value of over \$300,000 extra airtime.

Ad recall increased following the campaign, with key message take outs being 'versatile, yummy, delicious, and easy.' Some 14 per cent of surveyed listeners also said they had bought mushrooms as a result of hearing the Australian Mushrooms spot on radio recently.

Music streaming service Spotify was used to complement the radio schedule and to target a younger audience who have a strong affinity for food and cooking. During the campaign period, 114,623 people between the ages of 18 to 34 were reached and 148,061 opportunities for people to see the content were served, surpassing the campaign target of 140,000. The most popular playlists that Australian Mushrooms appeared within were Spotify's Chill (28.79 per cent), Workout (15.59 per cent), Party (11.47 per cent), and Travel (10.16 per cent) playlists.

## Digital

Supporting television activity, Australian Mushrooms digital activity ran from mid-August to December 2018 and again from early March to June 2019 across catch-up TV and YouTube – utilising FlyBuys data to strategically target specific consumer segments. The strategy consisted of Australian Mushrooms' standard 15-second video ad on catch-up television, with a non-skippable ad format used across popular programming such as *MasterChef*, *House Rules*, *Lego Masters* and *The Voice*. On YouTube, six-second bumper ads featured three different creatives across the campaign period, including Mushroom Spaghetti, Pizza and Omelettes. The Spaghetti creative drove the highest number of served impressions and had the highest completion rate at 86 per cent. However, Pizza and Omelette also had strong completion rates at 85.8 per cent and 83 per cent respectively. On YouTube mushrooms also saw an over-delivery of impressions by 206 per cent.

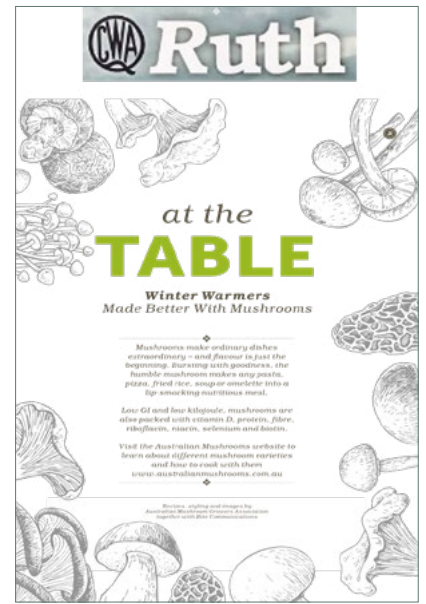
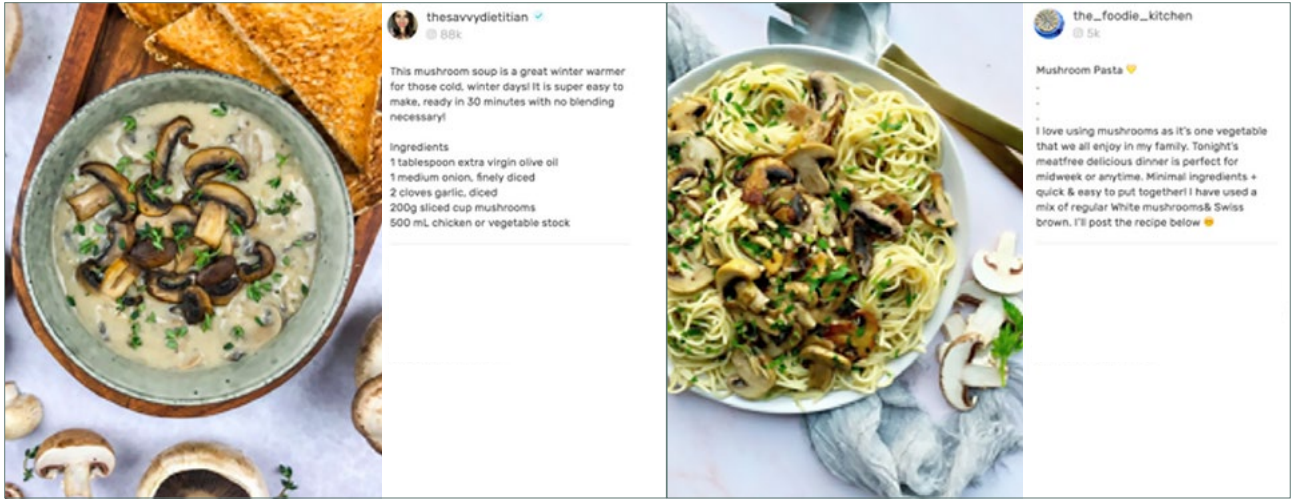
All platforms achieved above campaign benchmark results. Looking at the second lot of activity in 2019, in total there were 2,684,436 opportunities for people to see the content. All channels surpassed the aim of a 70 per cent ad completion rate and 70 per cent ad viewability, finishing with an overall viewability rate of 90 per cent and a total ad completion rate of 92 per cent.

## Out of home

To extend reach and drive frequency of key messages, out-of-home advertising was placed on digital screens in major shopping centres, on billboards, on major roads and on street furniture from August to October in 2018 and again from March to May 2019. This reinforced the key messages in consumers' minds, helped to drive action before entering a store and was a critical step on the path to purchase journey. The aim of the campaign was to reach a total of 2.2 million people per campaign burst at least 11 times via street furniture, and 5.2 million people at least nine times via digital shopping centre screens. In total the street furniture reached over 2.3 million people, while the shopping centre digital screens reached over 5.9 million people during March to May 2019.

## Social media

The Australian Mushrooms 'always on' approach to social media ensures that mushrooms are top of mind for consumer's year-round. During 2018/19, the Facebook page ([www.facebook.com/AustralianMushrooms](https://www.facebook.com/AustralianMushrooms)) continued to grow, delivering 5.6 million impressions between March and June 2019 alone, with 179,000 engagements (likes, comments, shares, link clicks and photo views) and an above average engagement rate of seven per cent. Top performing Facebook posts included a vegetarian mushroom, tomato and cashew salad recipe, and Miguel Mastro's black skin roasted mushroom chicken recipe.



The Australian Mushrooms Instagram page (@australianmushrooms) was used to inspire with delicious recipes and was supported with recipes created by Miguel and curated winter warming recipes coordinated through activity with influencer platform TRIBE. Between March and June 2019 alone, Instagram delivered a total of 1.8 million impressions, 187,000 engagements and achieved a strong engagement rate of 15 per cent. Top performing Instagram posts included a mushroom stuffed potato cake recipe, and Miguel's sautéed mushrooms.

### Public relations (PR)

With recipe inspiration acting as a primary means to attract consumers, Australian Mushroom recipes continued to gain coverage in mainstream media. To kick off the winter season, there was also outreach to Melbourne media and influencers to help drive awareness, education and inspiration through high reaching coverage. This involved the distribution of 15 hampers containing fresh mushrooms, sourdough, Miguel's recipe cards and winter cooking tips and tricks for mushrooms.

This approach gained significant coverage including in *Woman's Day*, a five page spread in *Ruth Magazine* and features by influencers The Nutrition Guy and nutritionist Steph Geddes.

### Brand ambassador

Celebrity chef and television personality Miguel Maestre continued to share his love for mushrooms across traditional media and social channels in 2018/19. Miguel's 'one roll mushroom wonders' recipe was featured within *Woman's Day*, and Miguel was busy engaging



with consumers at events across the country. At the Sydney Royal Easter Show and Melbourne's Good Food and Wine show Miguel demonstrated how to make his delicious mushroom paella and used Facebook Live to engage with the wider community.

Earlier in the financial period, Miguel took part in a publishing house tour, visiting the offices of Pacific Magazines and Bauer Media to cook and showcase family-friendly mushroom recipes, and take part in interviews. From this there were more than a dozen high-profile media inclusions.

## In-store sampling

Australian Mushrooms increased its in-store presence via two bursts of in-store sampling activity in 2018/19 – from the first week of November to early December 2018, and again from mid-February to mid-March 2019. Consumers had the chance to try mushroom dishes in Coles, Woolworths and independent supermarkets in New South Wales, Victoria, Queensland, South Australia and Western Australia. More than 550 sampling sessions took place and, on average, 80 samples and 70 recipe brochures were handed out per session.



## Website and consumer e-newsletter

The consumer-facing Australian Mushrooms website

([www.australianmushrooms.com.au](http://www.australianmushrooms.com.au)) has continued to grow with over 37,000 new users visiting the site between May and July 2019. The monthly mushroom e-newsletter that consumers can sign up to via the website has continued to drive traffic back to the site, reaching a growing database of over 35,000 subscribers, and browse time on the site is on the rise with users spending an average of five minutes on each recipe page. The most visited pages on the site include 'Best Ever Mushroom Sauce,' 'Mushroom Parmigiana' and 'Steak with Mushroom Sauce.'

## Events

During 2018/19 the Australian Mushrooms brand continued having a presence at various events around Australia, serving mushrooms up to consumers from the eye-catching Australian Mushrooms caravan. Some of these events included:

» **The Royal Queensland Show (Ekka)** in August 2018 – this is the largest annual event of its kind in Queensland. More than 400,000 people visited the show over 10 days, also making it the best-attended event per capita in Australia.

- » **The Sydney Royal Easter Show** in April 2019 – which drew more than 900,000 people over 12 days, a 14 per cent increase on the previous year.
- » **The Melbourne Good Food and Wine Show** in June 2019 – with more than 29,000 people attending.

At the events, the Australian Mushrooms caravan prepared and served three different recipes for the crowds: Chilli Mushroom Con Carne, Best Ever Mushroom Sauce and Thai Mushroom and Chicken Meatballs. Brochures with the three recipes were also handed out.

At the Ekka and Sydney Show, live demonstrations were conducted, with chefs preparing the dishes on display and explaining the steps. As a real highlight, Australian Mushrooms ambassador Miguel attended one day of the Sydney event and two days of the Melbourne Good Food and Wine Show, cooking his Paella-la-Maestre and serving it to the crowd. He also conducted a Q&A session at the Melbourne event.

In total, some 29,000 samples and 30,000 brochures were distributed at the Ekka; 36,200 samples and 29,250 brochures in Sydney; and 8850 samples and 12,750 brochures in Melbourne.

The events were also an opportunity for people to sign-up for the website's e-newsletter database.

## Financial statement

### Financial operating statement 2018/19

	R&D (\$)	MARKETING (\$)	TOTAL (\$)
	2018/19 July – June	2018/19 July – June	2018/19 July – June
<b>OPENING BALANCE</b>	<b>2,013,922</b>	<b>-418,378</b>	<b>1,595,544</b>
Levies from growers (net of collection costs)	1,276,789	3,525,198	4,801,987
Australian Government money	1,263,986	–	1,263,986
Other income*	42,767	-21,921	20,846
<b>TOTAL INCOME</b>	<b>2,583,542</b>	<b>3,503,276</b>	<b>6,086,819</b>
Project funding	2,150,975	2,832,917	4,983,892
Consultation with and advice from growers	21,896	10,160	32,056
Service delivery – base	88,479	117,039	205,518
Service delivery – shared	146,622	193,950	340,572
Service delivery – fund specific	120,000	189,898	309,898
<b>TOTAL EXPENDITURE</b>	<b>2,527,973</b>	<b>3,343,963</b>	<b>5,871,936</b>
Levy contribution to across-industry activity	57,432	–	57,432
<b>CLOSING BALANCE</b>	<b>2,012,060</b>	<b>-259,065</b>	<b>1,752,995</b>
Levy collection costs	2,546	7,633	10,178

\* Interest, royalties



# **Connect with your levy!**

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