

# Mushroom Annual Investment Plan 2022/23



# Industry position

The domestic mushroom industry cultivates a range of edible mushrooms for human consumption, including *Agaricus bisporus* (button, cup, flat and brown mushrooms) as well as exotic mushroom varieties including shimeji and oyster. Mushroom production occurs in most states near population centres.

The Australian mushroom industry produced 68.936 tonnes with a value of \$393.10 million in 2020/21.

A large amount (97%) of mushrooms produced are consumed through the fresh supply chains with less than 1% of production exported and less than 3% of production used in processing. There are limited export market opportunities due to the high cost of production in Australia and shelf-life limitations. Prepacked and value-added mushrooms, such as sliced mushrooms, are growing market segments. Foodservice is an important sector for the industry, with 26% (\$125m) of fresh supply sent to foodservice in 2020/21 and 74% (\$360 million) sent to retail.

Current mushroom industry challenges and opportunities include:

- Input costs continue to be a major industry challenge, with labour and transport costs seeing large increases along with farm supplies. Delays with imports due to the shipping crisis are likely to continue to challenge the industry and increase costs of farm inputs for the next 12-months
- International mushroom industry research collaboration and grower engagement opportunities e.g., research on sustainable high yielding peat replacement with alignment to Australian commercially available and viable resources
- Expanding data and insights with further understanding of domestic market segmentation i.e., foodservice, consumer data (consumer demand) and building new forecasting data (supply)
- Building new research and development opportunities in health and nutrition that positions mushrooms as a truly unique value proposition to consumers, the health and nutrition industry, and the foodservice industry
- Improving understanding of sustainability and efficiency including waste product development and packaging alternatives
- Developing fit-for-purpose pest and disease management strategies and research into new biological agents
- Supporting further development and usage opportunities for the Marsh Lawson Mushroom Research Centre (MLMRC)
- Biosecurity risks, pest/disease management and industry preparedness present both a challenge and opportunity in which Australian mushrooms will be collaborating with industry, Hort Innovation and Plant Health Australia in the coming years.

Further background on the mushroom industry and its priorities can be found in the [mushroom Strategic Investment Plan \(SIP\) 2022-2026](#). Further information on industry statistics can be found in the [Australian Horticulture Statistics Handbook](#).

The key challenges for the mushroom industry are: driving demand; export; and improving production efficiencies.

## Mushroom production

Mushroom production volume and value from 2012/13 to 2025/26, showing the predicted production trend for the next five years, can be seen in **Figure 1**. Future performance has been projected based on the five-year levy income forecast.

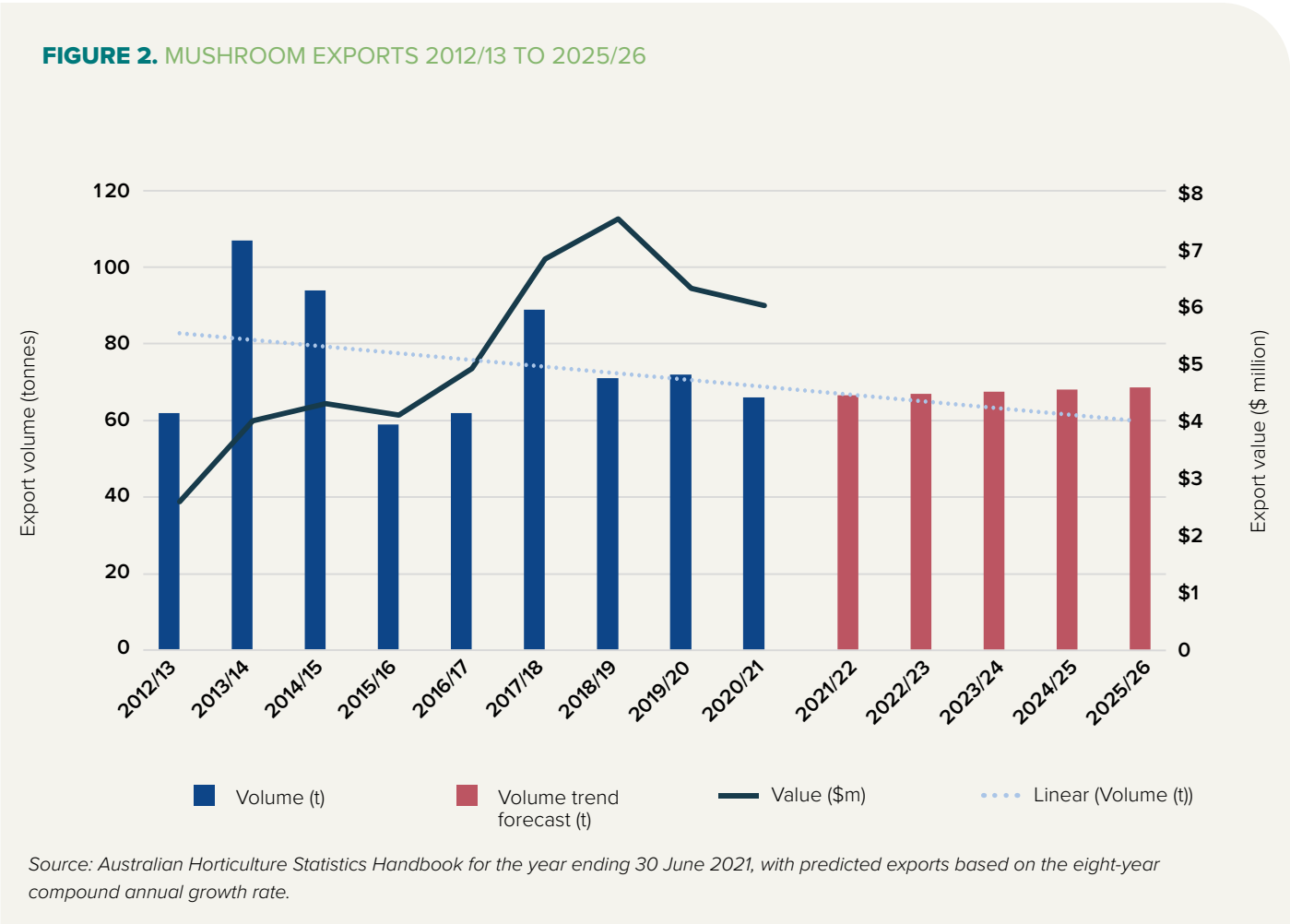


### Production trends:

- Mushroom production volume has not fluctuated significantly over the past eight years, with 65,268 tonnes produced in 2012/13 compared to 68,936 tonnes in 2020/21. COVID-19 disruptions saw production drop from a peak of 72,006 tonnes in 2018/19
- Over the same period, the value of production increased from \$301 million in 2012/13 to \$393 million in 2020/21.

## Mushroom exports

Mushroom industry export volume and export value from 2012/13 to 2025/26, showing expected exports over the next three years is 201 tonnes, can be seen in **Figure 2**.



## Export trends:

- Negligible amounts of fresh mushrooms are exported due to the high costs of production in Australia.

# Investment advice and consultation

The mushroom Annual Investment Plan (AIP) 2022/23 was presented to the mushroom Strategic Investment Advisory Panel (SIAP) (**Table 1**) in May 2022. An ideation workshop was held with the mushroom SIAP, AMGA and the Marsh Lawson Mushroom Research Centre (MLMRC) committee in December 2021.

**TABLE 1. MUSHROOM SIAP AND BERRIES AUSTRALIA BOARD**

Name	Organisation
David Tolson	Grower
Michael Kertesz	MLMRC representative
Tim Adlington	MLMRC representative
Kyle Davies	Grower
Geoff Martin	Australian Mushroom Growers Association
Georgia Beattie	Grower, Australian Mushroom Growers Association
Kevin Tolson	Grower
Leah Bramich	Australian Mushroom Growers Association (Interim panelist)
Matthew Fensom	Grower
Mick Surridge	Australian Mushroom Growers Association

## The investment process

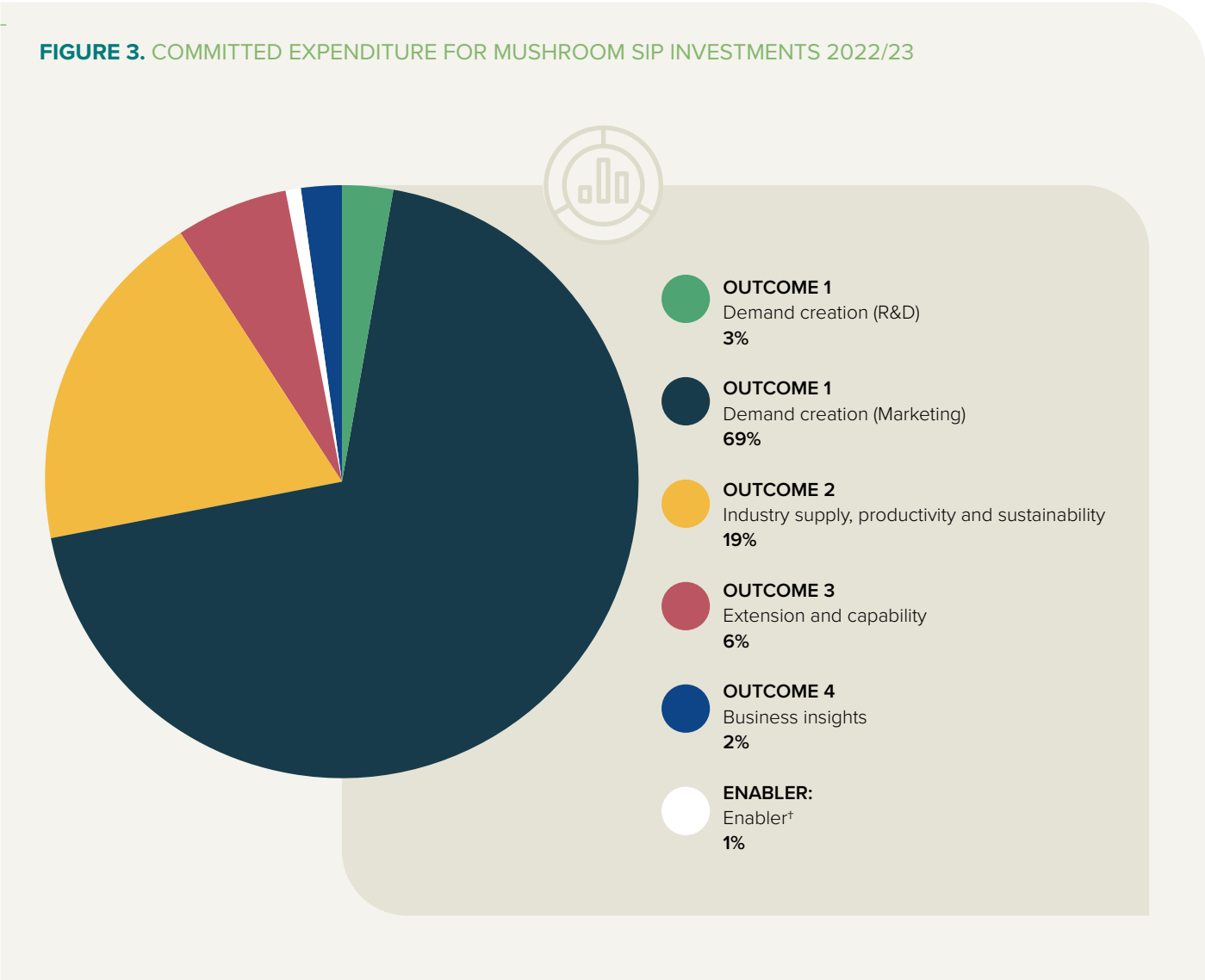
Investments specific to the Mushroom Fund are guided by the industry's SIP and AIP. The SIP provides an overarching roadmap for industry to follow, and the AIP details how levy dollars will be spent each year to achieve industry goals.

Learn about how Hort Innovation makes investment decisions, and the process for making investments on our website [here](#), or watch a video about how investment decisions are made at the mushroom 'fund management' page on our website [here](#).

# Current investments

The mushroom SIP details the industry’s strategic goals centred around four outcome areas: demand creation (both R&D and marketing based); industry supply, productivity and sustainability; extension and capability; and business insights. Under each of those outcomes, there are industry-specific strategies and key performance indicators (KPIs) that provide guidance on how the mushroom industry will work towards achieving the outcomes. **Figure 3** below identifies committed investment expenditure in each of the SIP outcome areas for 2022/23.

**FIGURE 3. COMMITTED EXPENDITURE FOR MUSHROOM SIP INVESTMENTS 2022/23**



*\* Enabler: projects that support the broader delivery of the industry’s project investments. Examples of enabler projects include annual reporting and monitoring and evaluation capacity.*

**Table 2** indicates the current invested projects for 2022/23 that are aligned to the respective outcomes and strategies for the Mushroom Fund. A full report on the Mushroom Fund can be found in the [mushroom Annual Report 2020/21](#), and the Annual Report 2021/22 will be published in October this year [here](#).

**TABLE 2. CURRENT INVESTED PROJECTS IN THE MUSHROOM FUND**

Outcome	Strategy	Project code	Project title	Delivery partner	Start date	End date	Life of project value
1. Demand creation	1. Consumer demand	<a href="#">MU20003</a>	Educating the food industry about Australian Mushrooms	Australian Mushroom Growers Association	13/7/21	30/7/24	\$545,203
1. Demand creation	1. Consumer demand	<a href="#">MU20001</a>	Mushrooms and their potential health benefits of lowering blood cholesterol	CSIRO	7/9/21	13/2/26	\$471,250
1. Demand creation	1. Consumer demand	MU21610 <sup>M</sup>	Mushroom Creative Social & PR	TBWA	27/10/21	30/6/23	\$581,078
1. Demand creation	1. Consumer demand	MT20600 <sup>M</sup>	Media strategy, planning and buying services	Atomic Search	26/10/20	30/7/23	\$465,717
1. Demand creation	1. Consumer demand	MU21620 <sup>M</sup>	Mushroom website and EDM	Bite Communications	1/11/21	30/9/22	\$80,000
1. Demand creation	1. Consumer demand	MU21600 <sup>M</sup>	FY2022 mushroom media	Atomic Search	19/4/22	31/7/22	\$1,480,000
1. Demand creation	1. Consumer demand	MU21503 <sup>M</sup>	Mushrooms in-store sampling program	DIRECT 2 C	4/5/22	1/10/22	\$199,946
1. Demand creation	1. Consumer demand	MU21501 <sup>M</sup>	Grassroots product demos and events program – mushroom marketing plan 30/06/2023	Australian Mushroom Growers Association	6/5/22	31/8/22	\$200,000
1. Demand creation	1. Consumer demand	MU21502 <sup>M</sup>	Food service program – mushroom marketing plan 30/06/2023	Australian Mushroom Growers Association	6/5/22	31/8/22	\$300,000
2. Industry supply, productivity and sustainability	1. Production systems	<a href="#">MU17004</a>	Optimising nitrogen transformations in mushroom production	University of Sydney	23/1/19	31/12/23	\$745,400
2. Industry supply, productivity and sustainability	1. Production systems	<a href="#">MU17006</a>	Developing a database of bio-markers for compost quality control to maximise mushroom production yield	University of Sydney	17/7/19	28/2/24	\$586,350
2. Industry supply, productivity and sustainability	1. Production systems	MU21001	Risk analysis and management strategies for potential contamination of mushroom compost	University of Sydney	28/6/22	31/10/24	\$343,225
2. Industry supply, productivity and sustainability	2. Waste reduction	<a href="#">MU21006</a>	Recycling spent mushroom substrate (SMS) for fertiliser in a circular economy	Kevin George Wilkinson	26/6/22	30/3/24	\$212,940

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## CURRENT INVESTED PROJECTS (continued)

Outcome	Strategy	Project code	Project title	Delivery partner	Start date	End date	Life of project value
2. Industry supply, productivity and sustainability	4. Biosecurity preparedness	<a href="#">MU18006</a>	Development of a biosecurity plan for Australian mushrooms	Plant Health Australia	3/6/20	19/4/25	\$147,973
2. Industry supply, productivity and sustainability	4. Biosecurity preparedness	<a href="#">MU21002</a>	Desktop review of pathway risks for the mushroom industry – Agaricus mushrooms and growth substrate imports	Applied Horticulture Research	21/3/22	30/9/22	\$37,800
2. Industry supply, productivity and sustainability	5. IPDM	<a href="#">MU21007</a>	Pest and disease management and research services	Tasmanian Institute of Agriculture	8/7/22	6/7/27	\$998,814
2. Industry supply, productivity and sustainability	6. Production	<a href="#">MU21004</a>	Marsh Lawson Mushroom Research Centre of Excellence	University of Sydney	23/6/22	31/5/25	\$651,600
2. Industry supply, productivity and sustainability	7. SARP	<a href="#">MT21005</a>	Strategic Agrichemical Review Process (SARP) – Updates	AGK Services	17/11/21	15/4/23	\$8,000
2. Industry supply, productivity and sustainability	8. Regulatory support	<a href="#">MT20007</a>	Regulatory support and response co-ordination (pesticides)	AKC Consultancy	2/8/21	1/7/24	\$26,996
2. Industry supply, productivity and sustainability	8. Regulatory support	<a href="#">MU16002</a>	Mushroom industry minor use program	Hort Innovation	1/7/22	30/6/23	\$3,700
2. Industry supply, productivity and sustainability 3. Extension and Capability	4. Biosecurity preparedness 1. Extension capability	<a href="#">MU20006</a>	Mushroom industry crisis and reputation risk management	Australian Mushroom Growers Association	25/6/21	1/6/26	\$397,323
3. Extension and Capability	1. Extension capability	<a href="#">MU20000</a>	Extension and adoption for food safety, quality and risk management	Australian Mushroom Growers Association	6/12/20	1/11/25	\$405,019
3. Extension and Capability	1. Extension capability	<a href="#">MU21003</a>	Mushroom industry communications program	Applied Horticulture Research	22/3/22	31/3/27	\$1,009,200
3. Extension and Capability	1. Extension capability	<a href="#">MU21008</a>	Mushroom industry conference	Australian Mushroom Growers Association	29/6/22	30/12/22	\$85,000
4. Business insights	1. Consumer insights	<a href="#">MT21003</a>	Consumer demand spaces for horticulture	Kantar Insights Australia	17/1/22	15/7/22	\$20,382
4. Business insights	1. Consumer insights	<a href="#">MT21004</a>	Consumer behavioural data program	Nielsen Connect Australia	29/3/22	20/11/26	\$252,609
4. Business insights	1. Consumer insights	<a href="#">MT21201</a>	Pilot program – Consumer usage, attitude and brand tracking	Fifty-Five 5	22/4/22	31/7/22	\$13,697

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## CURRENT INVESTED PROJECTS (continued)

Outcome	Strategy	Project code	Project title	Delivery partner	Start date	End date	Life of project value
4. Business insights	1. Consumer insights	<a href="#">MT21011</a>	Foodservice foundational market insights	KPMG	9/5/22	8/7/22	\$17,336
4. Business insights	1. Consumer insights	MT21012	Creative campaign evaluation	Cubery	13/5/22	29/7/22	\$4,685
4. Business insights	1. Consumer insights	<a href="#">MU21005</a>	Mushroom price elasticity of demand	NCEconomics	13/5/22	29/7/22	\$86,550
4. Business insights	1. Consumer insights	<a href="#">MT21202</a>	Consumer usage and attitude tracking – 2022/23	Fifty-Five 5	30/6/22	31/7/23	\$41,373
4. Business insights	2. Production forecasts	<a href="#">MT21010</a>	Economic contribution of Australian horticulture	International Economics Unit Trust	7/4/22	11/7/22	\$10,324
4. Business insights	2. Production forecasts	MT21007	Seasonal horticulture labour accommodation study	Strategic Project Partners	30/5/22	12/8/22	\$8,945
Enabler <sup>†</sup>	Enabler <sup>†</sup>	<a href="#">MT21006</a>	Australian Horticulture Statistics Handbook 2021-22 to 2023-24	Freshlogic	29/4/22	25/2/25	\$66,944
Enabler <sup>†</sup>	Enabler <sup>†</sup>	<a href="#">MT21015</a>	Horticulture impact assessment program 2020/21 to 2022/23	Ag Econ	6/5/22	30/11/24	\$20,062
Enabler <sup>†</sup>	Enabler <sup>†</sup>	MU22910	Grower advice and consultation	Hort Innovation	1/7/22	30/6/23	\$32,000

<sup>†</sup> Enabler: projects that support the broader delivery of the industry's project investments. Examples of enabler projects include annual reporting and monitoring and evaluation capacity.

<sup>M</sup> Projects funded by the marketing levy

Key for project codes:

Projects starting with MU are funded by the mushroom levy only

Projects starting with MT are funded by multiple industries, including with mushroom levy contribution

## Financial statements

View the Mushroom Fund's most up-to-date financial operating statement [here](#) and the annual project summary [here](#) on the Hort Innovation website.

# Recommended investments in 2022/23

The mushroom SIAP met on 25 March and 8 September 2022 to discuss, provide advice on, and prioritise recommendations on R&D investment for 2022/23. Links to the meeting summaries can be found below and the investment recommendation is listed in **Table 3** and **4**. The mushroom SIAP is currently considering investment in a Mushroom Marketing Plan 30/06/2023 (**Table 5**).

## SIAP meeting summaries:

Mushroom SIAP meeting on 25 and 26 May 2022: [Download summary](#)

Mushroom SIAP meeting on 8 September 2022: *Forthcoming*

## R&D Fund investment recommendations (in order of priority)

**TABLE 3. MUSHROOM SIAP R&D INVESTMENT RECOMMENDATIONS**

Priority	Investment	Outcome	Strategy
1	Marsh Lawson Mushroom Research Centre of Excellence	2. Industry supply, productivity and sustainability	6. Production
2	Non-synthetic alternatives to complement current pest and disease management practices in mushrooms	2. Industry supply, productivity and sustainability	5. Integrated pest and disease management

**TABLE 4. MUSHROOM R&D SIAP R&D INVESTMENT RECOMMENDATIONS (SIAP MEETING 25 AND 26 MAY 2022)**

Priority	Investment	Outcome	Strategy
1	Alternate casing substrate, beyond Peat and sustainable transition	2. Industry supply, productivity and sustainability	1. Production systems 6. Production
2	The future of packaging, alternate packaging trials product integrity	2. Industry supply, productivity and sustainability	3. Supply chain collaboration
3	Scientific basis for a mushroom food group in the Australian Dietary Guidelines	3. Extension and capability	1. Extension capability
4	Online resource platform for mushrooms aimed at health care and food service professionals	3. Extension and capability 1. Demand creation	1. Extension capability 2. Market access
5	Mushroom industry lifecycle analysis to understand Eco credentials and risks	2. Industry supply, productivity and sustainability	2. Waste reduction
6	Vitamin D Health claim submission	1. Demand creation	1. Consumer demand
7	Mushroom industry National conference / roadshow 2023-2026	3. Extension and capability	1. Extension capability

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8	PhD program to study if we have novel mushroom Virus in the Australian mushroom industry	2. Industry supply, productivity and sustainability	4. Biosecurity preparedness
9	Mushroom international study tours – inbound and outbound	3. Extension and capability	1. Extension capability

TABLE 5. MUSHROOM SIAP MARKETING INVESTMENT RECOMMENDATIONS (CURRENTLY IN CONSIDERATION)

Priority	Investment	Outcome	Strategy
1	Mushroom Marketing Plan 30/06/2023	1. Demand creation	1. Consumer demand

**Note:** Wherever possible, investments will be aligned to form multi-industry projects, and all investments are subject to funding availability. If investments do not occur in this financial year, then they will be reconsidered and reprioritised for the mushroom AIP 2023/24.

Find out more information on the Mushroom Fund  
at [www.horticulture.com.au/mushroom](http://www.horticulture.com.au/mushroom)