Persimmon

Strategic Investment Plan

2022-2026

Hort Innovation
Strategic levy investment

PERSIMMON FUND

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Communications Manager
Hort Innovation
Level 7, 141 Walker Street
North Sydney NSW 2060
Australia
Email: communications@horticulture.com.au
Phone: 02 8295 2300

EXECUTIVE SUMMARY

The overarching strategic intent of this Strategic Investment Plan (SIP) is to grow the total value of the Australian persimmon industry by concentrating on improved and consistent product quality to drive increases in domestic and international consumer demand.

The persimmon SIP 2022-2026 provides a roadmap to guide Hort Innovation's investment of persimmon industry levies and Australian Government contributions, ensuring investment decisions are aligned with industry priorities.

The Australian persimmon industry situation in 2019/20 is described on ***page 4*** with further information provided in ***Appendix 1***. The industry has remained stable over the past five years, with persimmon production reaching 2,771 tonnes in 2019/20 and is set to remain stable in the coming five years. This is mainly due to the limited availability of rootstocks and the emergence of disease-like symptoms impacting on new plantings. Persimmons are produced primarily in southeast Queensland, with other major production areas including the Sydney Basin in New South Wales, Sunraysia, the Goulburn and Murray Valley regions in Victoria, the South Australian Riverland and south-west corner of Western Australia.

The strategic intent of the persimmon SIP provides a summary of how the persimmon industry will drive change over the life of the SIP. This will ultimately come about by growers having access to healthy high quality planting material, and the tools required to manage pests and disease to increase productivity and meet the demands of consumers both domestically and internationally.

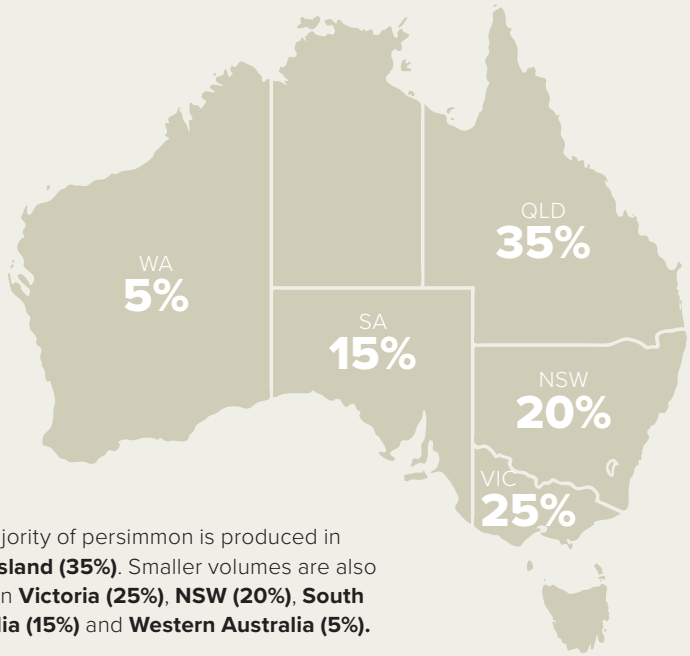
The financial estimates give an indicative overview of the funding availability for the period of FY2022-FY2026.

Although a major portion of the persimmon research and development (R&D) fund is currently allocated to key projects, available funds for investment will increase over the life of the SIP due to current projects concluding. Careful prioritisation of future investment needs will be required when the funds to invest become available in FY2023.

The four outcome areas of this SIP cover significant themes under which programs and investments will be focused. These are listed in priority order for the persimmon industry. Demand creation continues to be crucial for the industry, with a particular focus on establishing in-season awareness and consideration of Australian persimmons. Under the outcomes of productivity, strategies to develop new tools for managing emerging pests and diseases and access to healthy high quality planting material is the industry's highest priority. Extension and communication, best management practices (BMPs) and new information, particularly relating to priority areas, are key to the industry's success.

The key performance indicators (KPIs) detail how the impact of each strategy will be measured, for example, improved consideration by consumers during the niche seasonal window; new information on the management of pests and diseases; rootstock propagation to reduce crop losses and improve orchard uniformity respectively; and tools for growers to support access to and adoption of BMPs.

PRODUCTION REGIONS:



The majority of persimmon is produced in **Queensland (35%)**. Smaller volumes are also grown in **Victoria (25%)**, **NSW (20%)**, **South Australia (15%)** and **Western Australia (5%).**

PRODUCTION WINDOW:

Feb-Jun

NUMBER OF GROWERS:

80

PER CAPITA CONSUMPTION:

0.13 kg

in 2019/20

PRODUCTION VOLUME:

2,771 tonnes

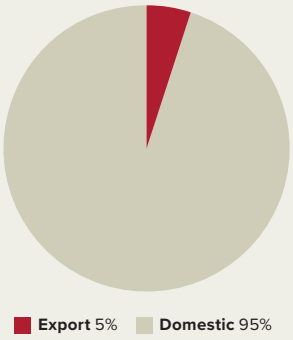
in 2019/20

FARMGATE VALUE OF PRODUCT:

$11 million

in 2019/20

EXPORT/DOMESTIC:



VARIETIES:

Sweet varieties (non-astringent) such as

Izu, Jiro & Fuyu

95%

Original varieties (astringent) such as

Hachiya & Rojo Brillante

5%

THE PERSIMMON STRATEGIC INVESTMENT PLAN

The persimmon SIP is the roadmap that will guide Hort Innovation's oversight and management of the persimmon industry's investment programs. It lays the foundation for decision-making in investments and represents the balanced interest of the whole industry. The important function of this SIP is to ensure that the investment decisions align with persimmon industry priorities.

Hort Innovation has led the process for preparing the persimmon SIP, listening and engaging with levy payers and key stakeholders including Industry Representative Bodies (IRBs) and expertise available through advisory mechanisms and delivery partners. The renewal process involved consultation with and input from a wide range of levy payers, objective analysis of performance and learning from the previous SIP, as well as environmental scanning to identify emergent trends and issues that could impact on future industry profitability and sustainability.

Hort Innovation has valued the support, advice, time, and commitment of all stakeholders that contributed to producing this SIP, especially persimmon growers.

The whole-of-company approach taken by Hort Innovation to produce this SIP has harnessed existing external and internal knowledge, learning, partnerships and relationships. The output is a tailored plan with which the persimmon industry can be confident of its strategic intent, including visibility on how investment impacts will be identified. Specific investments to address the SIP strategies and align with industry strategic priorities will be outlined in detail via the persimmon Annual Investment Plan (AIP). The AIP will be published each year over the lifespan of the SIP and detail the investments that will be prioritised based on potential industry impact, as well as the availability of levy funds. Hort Innovation will advise industry stakeholders when the AIP has been published via established communication channels each year. The AIP will be developed with input from the persimmon Strategic Investment Advisory Panel (SIAP), IRBs and other key stakeholders.

Producers in the persimmon industry pay levies to the Department of Agriculture, Water and the Environment, which is responsible for the collection, administration and disbursement of levies and charges on behalf of Australian agricultural industries.

Agricultural levies and charges are imposed on primary producers by Government at the request of industry to collectively fund R&D, marketing, biosecurity, and residue testing programs.

Levy is payable on persimmons that are produced in Australia and either sold by the producer or used by the producer in the production of other goods. The R&D levy rate on persimmon is set at 3.75 cents per kilogram. The marketing levy is set at 2.5 cents per kilogram.

Hort Innovation has developed this SIP for the persimmon industry to strategically invest the collected persimmon levy funds into the priority areas identified and agreed by the industry.

This SIP represents the Australian persimmon industry's collective view of its R&D and marketing needs over the next five years (2021-2026). Learning, achievements and analysis of the previous SIP, consultation with Australian persimmon levy payers, and synthesis of various strategic documents have been incorporated into the development of this SIP. ***Appendix 3*** acknowledges the people who were consulted in the preparation and validation of this SIP. Statistics and data within this publication are sourced from the Australian Horticulture Statistic Handbook 2019/20 and other documents unless stated otherwise and are listed in ***Appendix 4***. A list of acronyms used within the document is available in ***Appendix 5***.

Financial estimates

The annual revenue from levy income and Australian Government contributions for eligible R&D set the overall budget parameters for the SIP. Importantly, a portion of these funds is already committed, as the industry has current multi-year projects for R&D and marketing activities. In addition, the levy income from year to year will vary due to changes in seasonal and market conditions.

The financial estimates used for the purpose of developing this SIP are presented in ***Table 1*** below and are indicative. The intention of the table is to offer a strategic overview of the industry fund at a specific point in time, and the figures will be regularly reviewed to reflect the latest information for the industry and any changes in investment priority. Further details will be available within the AIP each year.

TABLE 1. Indicative financial estimates for the persimmon SIP over the life of the SIP

	2022 $	2023 $	2024 $	2025 $	2026 $
R&D					
Balance end FY2021	**20,712**				
Estimated levy funds (growers)	87,000	87,000	87,000	87,000	87,000
Australian Government contribution	77,353	55,765	94,176	51,882	54,647
Current investments	131,500	64,800	160,100	23,200	52,900
New investments	–	30,000	–	65,000	40,000
Total project investments	131,500	94,800	160,100	88,200	92,900
CCR	23,206	16,729	28,253	15,565	16,394
Projected end balance	36,000	68,700	68,200	91,800	113,200
MARKETING					
Balance end FY2021	**63,676**				
Estimated levy funds (growers)	60,000	60,000	60,000	60,000	60,000
Current investments	52,000	–	–	–	–
New investments	–	50,000	50,000	40,000	40,000
Total project investments	52,000	50,000	50,000	40,000	40,000
CCR	13,000	12,500	12,500	10,000	10,000
Projected end balance	61,900	61,600	61,400	71,100	80,800

Disclaimer: *All figures are indicative only and may change depending on actual income and expenditure.*

Balance end FY2021 – The closing balance of the fund as at 30 June 2021
Estimated levy funds – Net levy income/revenue that is generated and collected by levy revenue services (LRS)
Australian Government contribution – Amount of contribution from the Australian Government on R&D levy-funded expenditure
Current investments – Current estimated value of contracted projects
New investments – The estimated dollar value that is available for potential new investments for industry subject to industry advice
CCR – Corporate cost recovery: the cost to implement and manage R&D and marketing investment programs for each industry
Projected end balance – Forecast of the anticipated final position of the fund

PERSIMMON INDUSTRY OUTCOMES

The overarching strategic intent of this SIP is to grow the total value of the Australian persimmon industry by concentrating on improved and consistent product quality to drive increases in domestic and international consumer demand.

Industry outcomes

Outcome statements identified and prioritised by the persimmon industry have been prepared under four key areas of: demand creation; industry supply, productivity and sustainability; extension and capability; and business insights.

OUTCOME 1: Demand creation
Contribute to improving consumer knowledge, attitudes and purchase intent to drive volume growth.

Demand creation will support the persimmon industry to develop existing and future domestic markets.

The strategic intent of this outcome is to maintain and strengthen consumer demand as the foundation for sustainable expansion of persimmon production and consumption in the domestic market. It means the persimmon industry is investing to:

- Broaden consumer awareness so that persimmon is more top of mind and purchased more frequently
- Support product positioning with consistent quality, evidence of beneficial product health attributes and responsible industry production practices
- Develop strong relationships across the supply chain with a shared goal to grow the category.

OUTCOME 2: Industry supply, productivity and sustainability
Improve industry productivity (inputs/outputs) to maintain local competitiveness and viability of supply.

Supply and productivity will be supported through improvements to production efficiencies which will drive profitability outcomes, while ensuring long-term sustainability outcomes.

The strategic intent of this outcome is to accelerate the application of production practices that optimise returns and reduce risk to growers. Achieving the outcome will involve:

- Developing and optimising fit-for-purpose sustainable pest and disease management strategies
- Productive working relationships between Australian and international researchers to access and leverage world-class production knowledge
- Proactively monitoring potential crop protection regulatory threats and having access to a broader suite of effective, socially acceptable and environmentally sound crop protection solutions.

OUTCOME 3: Extension and capability
Building capability and innovative culture.

Building capability and an innovative culture will support industry cohesion and increase knowledge, attitudes, skills and aspirations (KASA) to use investment outputs across the supply and demand initiatives to better manage risk and create positive change.

The strategic intent of the outcome is to manage knowledge, relationships, systems and processes required to communicate and work effectively with internal and external stakeholders. Achieving the outcome will involve:

- A change in knowledge, KASA and practice for grower/industry profitability and sustainability through use of BMPs and innovation
- Increased on-farm use of R&D outcomes that will build a stronger, more resilient industry, in addition to improved networks and cross-industry collaboration.

OUTCOME 4: Business insights
Measure industry supply (production) and demand (consumer behaviour) data and insights to inform decision-making.

Business insights will support the industry to keep abreast of market and industry trends to drive informed decision-making.

The strategic intent of this outcome is to deliver data and insights which is foundational to achieving success in the other three outcome areas of demand creation; industry supply, productivity and sustainability; and extension and capability.

Achieving the outcome will involve reliable baseline data and analysis to provide insights and understand current and emerging trends. Key investments will support the provision of consumer knowledge and tracking, production statistics and forecasting to enable better decision-making process by industry and individual businesses.

These investments underpin and are complementary to delivery of the other outcome areas.

PERSIMMON INDUSTRY STRATEGIES

Strategies to address industry investment priorities

The strategies and identified impacts for each of the key outcome areas are described in the tables below. The highest priority investments lay the foundation for the SIP, and its implementation will require a balanced approach to ensure the industry has a high likelihood of success over the short term (0-3 years), medium term (3-5 years) and long term (5-10 years).

The ability to deliver on these strategies (and subsequent investments) will be determined by the ability of the statutory levy to provide adequate or sufficient resources. Further resources and efficiencies may become available through alternative funding sources such as Hort Frontiers strategic partnership initiative, external grants and/or cross-industry initiatives.

OUTCOME 1: Demand creation
Demand creation supports the persimmon industry to develop existing and future domestic markets.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Increase domestic consumer demand for Australian persimmons through improving knowledge, attitudes and purchase intent	• Increased consumer demand for Australian persimmons • Increased awareness of health benefits of persimmons

OUTCOME 2: Industry supply, productivity and sustainability
The Australian persimmon industry has increased profitability, efficiency and sustainability through innovative R&D, sustainable BMPs and varieties.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Develop and validate rootstock clonal propagation methods to improve orchard uniformity	• New knowledge on rootstock propagation to improve orchard uniformity available for growers
2. Evaluate the performance of scion and rootstock varieties while continuing to develop high-health and quality planting material	• Causes of disease-like symptoms in new persimmon plantings are understood and BMP is identified • BMP for the production of healthy clonal rootstock is understood by nurseries • Identification of scion and rootstocks suitable for Australia • New knowledge on the performance of scion and rootstock varieties available for growers
3. Develop and optimise fit-for-purpose sustainable pest and disease management strategies	• Reduced crop loss by sustainable pest and disease management practices
4. Improve industry preparedness and resilience to biosecurity threats	• Reduced crop loss through faster responses to plant pests and improved on-farm biosecurity measures

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OUTCOME 2: Industry supply, productivity and sustainability
The Australian persimmon industry has increased profitability, efficiency and sustainability through innovative R&D, sustainable BMPs and varieties.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
5. Prioritise the major crop protection gaps through a Strategic Agrichemical Review Process (SARP)*	• Available registered or permitted pesticides are evaluated for overall suitability against major disease, insect pests and weed threats. The SARP aims to identify potential future solutions where tools are unavailable or unsuitable
6. Support and co-ordinate crop protection regulatory activities with the potential to impact plant protection product access, both in Australia and internationally*	• Regulatory Risk Assessments have informed proactive strategic priority setting to avoid pest management gaps in the event access or use is negatively impacted
7. Generate residue, efficacy and crop safety data to support applications to the Australian Pesticides and Veterinary Medicines Authority (APVMA) that seeks to gain, maintain or broaden access to priority uses for label registrations and/or minor use permits for crop protection needs*	• Crop protection solutions meet industry priority needs as identified in the industry SARP or biosecurity plan

OUTCOME 3: Extension and capability
Improved persimmon industry capability and an innovative culture maximises investments in productivity and demand.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Deliver communication and extension capability to support positive change in the areas of sustainable production, pest and disease management, breeding and biosecurity	• A change/progression in awareness, knowledge and attitudes for grower profitability and sustainability which support the adoption of best practice and innovations

OUTCOME 4: Business insights
The Australian persimmon industry is more profitable through informed decision-making using consumer knowledge and tracking, production statistics and forecasting and independent reviews.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Increase industry alignment with quality and brand-positioning opportunities driven by consumer insights*	• Provision of business insights to deliver against demand, supply and extension outcomes
2. Use production forecasts to inform long-term and/or in-season market planning and supply strategies	• Increased industry or other stakeholder capacity

** Foundational investments provide data and information that underpin the delivery of other SIP outcome areas and will be aligned to this strategy. Foundational investment areas include:*

- *Consumer behavioural data*
- *Consumer usage and attitudes, and brand health tracking data*
- *Impact assessments*
- *Trade data*
- *Crop protectant data.*

PERSIMMON SIP MONITORING AND EVALUATION

The persimmon SIP Monitoring and Evaluation (M&E) Framework development has been informed by Hort Innovation's Organisational Evaluation Framework.

Progress against the SIP will be reported in Hort Innovation publications and through industry communication channels. The SIP outcomes and strategies are used to inform Key Performance Indicators (KPIs) that in turn drive the investments and individual projects to deliver on the SIP. Projects responsible for delivering the strategy aligned with each KPI will collect the data.

An M&E and reporting framework is shown below. The framework shows what will be measured to demonstrate progress against the SIP and how metrics will be tracked. Reporting on KPIs will be processed through various formal channels to inform industry and government investors of progress, performance, and impact. Data sources to support M&E will be identified and collected as part of the requirements for each levy investment.

Hort Innovation will facilitate the regular review of the SIP to ensure it remains relevant to industry.

Persimmon SIP Monitoring and Evaluation Framework

The persimmon SIP M&E Framework is shown below. It includes KPIs and data collection methods both at a macro/industry (trend) level and at more specific SIP strategic level/s.

OUTCOME	STRATEGIES	KPIs
Demand creation		
Outcome 1: Demand creation supports the Australian persimmon industry to develop existing and future domestic markets.	1. Increase domestic consumer demand for Australian persimmon through improving knowledge, attitudes and purchase intent	• Positive influence on consumer preference, knowledge, attitudes, and purchase intent • Use of nutritional information to support consumer demand

OUTCOME	STRATEGIES	KPIs
Industry supply, productivity and sustainability		
Outcome 2: The Australian persimmon industry has increased profitability, efficiency and sustainability through innovative R&D, sustainable BMPs and varieties.	1. Develop and validate rootstock clonal propagation methods to improve orchard uniformity	• Improved orchard uniformity
	2. Evaluate the performance of scion and rootstock varieties while continuing to develop high-health and quality planting material	• Development of rootstock standards
	3. Develop and optimise fit-for-purpose sustainable pest and disease management strategies	• Development of pest and disease management strategies that mitigate crop loss in collaboration with growers
	4. Improve industry preparedness and resilience to biosecurity threats	• Maintenance/tracking of the implementation of an industry biosecurity plan
	5. Prioritise the major crop protection gaps through a SARP*	• Coordinated industry priority setting with a clear outlook of gaps and risks in existing pest control options • Industry priority needs published and shared with stakeholders, including registrants
	6. Support and co-ordinate crop protection regulatory activities with the potential to impact plant protection product access, both in Australia and internationally*	• Regulatory Risk Assessments maintained
	7. Generate residue, efficacy and crop safety data to support applications to the Australian Pesticides and Veterinary Medicines Authority (APVMA) that seeks to gain, maintain or broaden access to priority uses for label registrations and/or minor use permits for crop protection needs*	• Data to support applications to the APVMA and the establishment of Maximum Residue Limits (MRLs)
Extension and capability		
Outcome 3: Improved capability and an innovative culture in the Australian persimmon industry to maximise investments in productivity and demand.	1. Deliver communication and extension capability to support positive change in the areas of sustainable production, pest and disease management, breeding, and biosecurity	• Establishment of a baseline and then increased share of the industry with positive change in KASA, practice and implementation concerning targeted high priority areas

OUTCOME	STRATEGIES	KPIs
Business insights		
Outcome 4: The Australian persimmon industry is more profitable through informed decision-making using consumer knowledge and tracking, production statistics and forecasting and independent reviews.	1. Use consumer insights to drive industry alignment with quality and brand-positioning opportunities*	• Delivery of consumer insights strategy • Evidence that consumer insights inform strategic market engagement and BMPs on farm • New consumer knowledge available for growers

** Foundational investments provide data and information that underpin the delivery of other SIP outcome areas and will be aligned to this strategy. Foundational investment areas include:*

- *Consumer behavioural data*
- *Consumer usage and attitudes, and brand health tracking data*
- *Impact assessments*
- *Trade data*
- *Crop protectant data.*

Reporting framework

Hort Innovation will use dynamic reporting aligned to the Organisational Evaluation Framework to report regularly on progress and performance. Reporting will be processed through formal channels to inform industry and government investors.

A review of investment performance against the respective industry outcome and/or strategy-level KPIs for the persimmon SIP will be completed annually as the primary reporting mechanism. The SIP performance report will provide:

- Evidence of progress towards achieving the industry-specific outcomes and strategies through an assessment of the KPIs identified in the SIP
- Evidence of progress towards cross-industry investment strategies and outcomes. This will involve Hort Innovation's whole-of-horticulture reporting obligations and corporate plan, annual reports and Hort Innovation's Annual Operating Plan.

SIP performance reports will also inform the Australian Government of progress towards achieving government priorities. In particular, reporting will support Hort Innovation to meet the Performance Principles and requirements contained in the Deed of Agreement 2020-2030.

COLLABORATION AND CROSS-INDUSTRY INVESTMENT

Based on advice from industry throughout the engagement process, Hort Innovation understands that Australian horticulture industries have common issues, and in turn we have identified prospective areas for collaboration and cross-industry or regional investment.

These opportunities have been included as strategies across multiple industry SIPs where relevant and required. By delivering more multi-industry collaboration in research, development and extension (RD&E), marketing and international trade, Hort Innovation aims to support more effective and efficient outcomes for growers and the wider horticulture sector. This includes driving investment through the Hort Frontiers strategic partnership initiative. Importantly, while this approach acknowledges there is value in solving issues across industries and regions, it does not reduce the importance of industry-specific initiatives.

Cross-industry/regional R&D opportunities identified for the persimmon industry include:

- Protected cropping
- Pest management.

Cross-industry areas of collaboration for demand driving outcomes provide the opportunity to advance the prosperity of the sector through gaining efficiencies in the delivery of the program and contributing to stronger overall outcomes. By collaborating as one sector to win the hearts and minds of the consumers, in addition to individual demand driving programs, there is the potential to enhance the total category value proposition, contributing to driving returns for Australian growers.

Areas of consideration for collaboration for demand-driving outcomes across the lifespan of the 2022-2026 SIP include:

- All-of-horticulture consumer marketing campaigns designed to drive awareness, consideration, and purchase behaviour change
- Communications to bring horticulture to top of mind (saliency) and reposition the benefits to Australian and international consumers
- Retail partnerships to advance total category and shopper demand-driving programs
- A global brand platform to reinforce the unique selling proposition of Australian-grown horticultural produce and drive preference with international consumers.

Strategic science and research focus

Collaboration across the agriculture research community is essential, including with IRBs and organisations such as the CSIRO, universities, private enterprise and state government agencies. Hort Innovation is a member of the National Horticulture Research Network (NHRN) together with other senior horticultural R&D representatives from state and Australian Government agricultural agencies. The NHRN is responsible for the development and implementation of the broader Horticulture RD&E Strategy under the National Primary Industries RD&E Framework.

During the engagement process, key delivery partners were contacted including lead agencies within the NHRN Framework as well as specific delivery partners for each industry. The lead agency involved with the persimmon industry investment program, NSW Department of Primary Industries (NSW DPI), was engaged during the development of this SIP to ensure consideration and strategically aligned priorities for the persimmon industry. In addition, strategic priorities and opportunities identified by Persimmons Australia Inc. have been considered in the development of the persimmon SIP where applicable.

TABLE 2. Government and key agency priorities

Persimmons Australia Inc. priorities	NSW DPI priorities	Rural RD&E for Profit priorities	Australian Government Science and Research priorities
Increase orchard productivity and reduce costs of production Consistent fruit quality Increased demand by increasing awareness Maximising export opportunities	Introduction and evaluation of new varieties Clonal propagation for rootstock development New markets for early maturing varieties	Advanced technology Biosecurity Soil, water and managing natural resources Adoption of R&D	Food Soil and water Advanced manufacturing Environmental change Health

This SIP has been developed alongside the government and key agency priorities listed in ***Table 2***, with consideration of issues faced by the persimmon industry. These strategic areas further emphasise the opportunity and importance of cross-industry and regional collaboration. All the priority areas are of importance to Australian horticulture, and these will play a role in driving the efficiency and effectiveness of investment across the sector.

Annual investment planning

Specific investments to address the SIP strategies and align with industry strategic priorities will be outlined in detail each year via the persimmon AIP. Investment decisions are guided by the SIP and prioritised based on potential industry impact, as well as the availability of levy funds each year. The AIP will be developed with input from the persimmon SIAP, which is made up of growers and other industry representatives as well as IRBs and other key stakeholders. Wherever possible, investments will be aligned to form multi-industry projects to increase the efficiency of funding availability. Details of the SIAP can be found on the Hort Innovation website here, and the AIP will be published on the same page each year.

Investment opportunities through Hort Frontiers

Innovation is key to the future success of Australian horticulture. The next evolution of the long-range, higher risk and transformational R&D that has the potential to make a significant impact will be possible through Hort Innovation's Hort Frontiers strategic partnership initiative.

Hort Frontiers is a strategic partnership initiative that facilitates collaborative, cross-industry investments focused on the longer term and more complex themes identified as critical for Australian horticulture by 2030. The partnership framework is currently being established and will include a number of key investment themes for potential investment to guide the initiative and drive transformational R&D across horticulture. Key investment themes will include:

- Environmental sustainability (water, soil and climate)
- Pollination
- Green cities
- Biosecurity
- Health, nutrition and food safety
- Advanced production systems
- International markets
- Leadership
- Novel food and alternate uses (waste reduction).

The development of these areas for investment will benefit all of horticulture, with support from partners with aligned priorities to co-invest in deliverables identified that require alternative funds available outside the levy. Hort Frontiers is being developed to align with the Australian-grown Horticulture Sustainability Framework and invest in specific impact areas to drive innovation and sustainability initiative.

The persimmon industry views a number of these investment areas as opportunities for success into the future, including:

- Health, nutrition and food safety
- Leadership.

Partnering with Hort Frontiers on these areas would provide the persimmon industry with opportunities for access to world-class research, specialised project management teams and large-scale R&D.

Australian-grown Horticulture Sustainability Framework

Hort Innovation has developed the Australian-grown Horticulture Sustainability Framework, aiming to strengthen the horticulture industry's sustainability to meet the changing expectations and needs of growers, consumers, the community, investors and governments. The framework applies across the whole of Australian horticulture, including fruits, vegetables, nuts, nursery stock and turf. Through widespread consultation with industry and external groups, proposed sustainability goals and indicators were identified and are detailed within the framework. The framework is aligned to the UN Sustainable Development Goals.

Four key pillars were identified in the framework (***Figure 1***).

FIGURE 1. Four key pillars of the Australian-grown Horticulture Sustainability Framework

The framework should be cross-referenced when undertaking prioritisation of investments. At the time of publication, Hort Innovation is working with industry groups regarding the overall responsibility for the framework, setting and reporting progress against the framework targets and performance measures.

View the Australian-grown Horticulture Sustainability Framework on the Hort Innovation website here.

Table 3 provides examples of persimmon SIP strategies that illustrate how the industry is already aligning to the framework.

TABLE 3. Persimmon SIP strategy examples showing how the industry is already aligning to the Australian-grown Horticulture Sustainability Framework

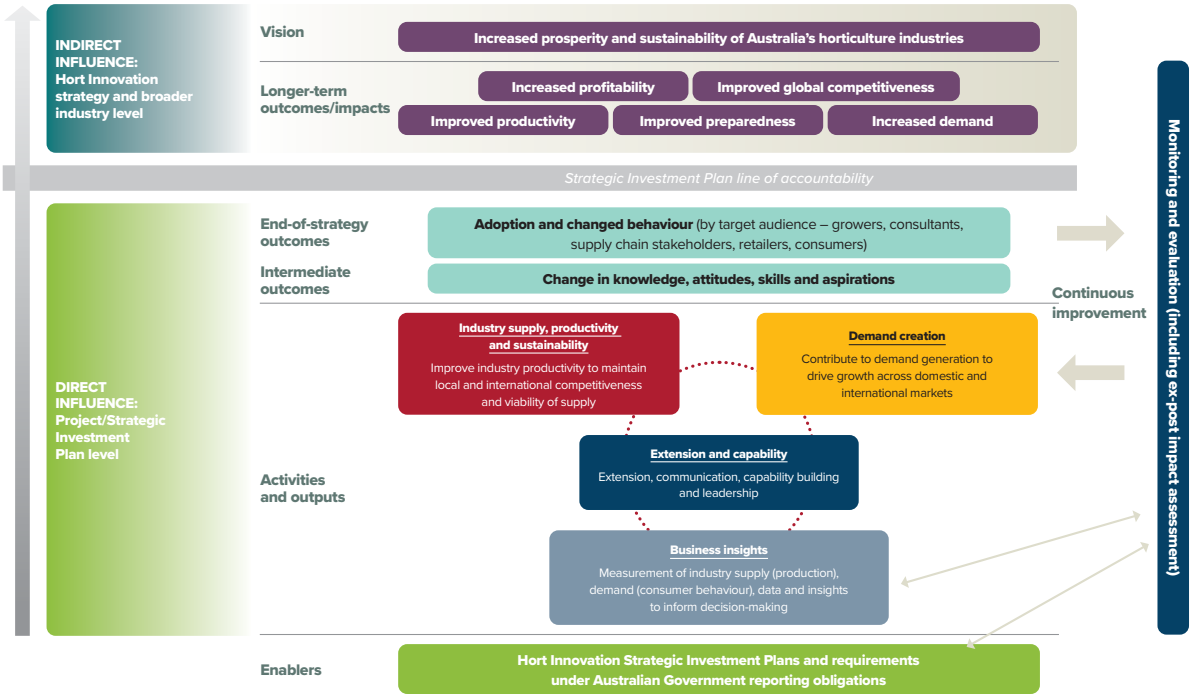
Strategy	Potential benefit or impact	Sustainability goal
Increase domestic consumer demand for Australian persimmons through improving knowledge, attitudes and purchase intent	• Positive influence on consumer preference, knowledge, attitudes, and purchase intent • Use of nutritional information to support consumer demand	Nourish & Nurture
Develop and optimise fit-for-purpose sustainable pest and disease management strategies	• Reduced crop loss by sustainable pest and disease management practices	Planet & Resources
Deliver communication and extension capability to support positive change in the areas of sustainable production, pest and disease management, breeding, and biosecurity	• A change/progression in awareness, knowledge and attitudes for grower profitability and sustainability which support the adoption of best practice and innovations	People & Enterprise
Improve industry preparedness and resilience to biosecurity threats	• Reduced crop loss through faster responses to plant pests and improved on-farm biosecurity measures	Planet & Resources
Evaluate the performance of scion and rootstock varieties while continuing to develop high-health and quality planting material	• Development of tree stock standards	People & Enterprise

HORT INNOVATION

Strategic Investment Plan logic

The SIP logic (***Figure 2***) identifies how investment activities and outputs (delivered through each SIP outcome area) will support changes in industry KASA, which drive adoption and behaviour change. Beyond the SIP, investment will contribute to driving longer-term impacts for the sector like increased preparedness, demand, productivity, global competitiveness and profitability. Realising these impacts will support Hort Innovation's vision of increased prosperity and sustainability of Australia's horticulture industries.

FIGURE 2. Strategic Investment Plan logic



Aligning to Hort Innovation investment priorities

Hort Innovation is committed to sustainable growth in horticulture, with the overarching aim of increasing the sector's value to $20 billion by 2030. We will do this through implementing the strategic plan and investments against the three core pillars, committed to:

1. Drive knowledge and innovation into horticulture industries
2. Deliver the highest value R&D, marketing and international trade investments across industries now and into the future
3. Enable activities that drive all strategic imperatives.

Hort Innovation is governed by a Deed of Agreement with the Australian Government, which allows for the transfer and investment of levies and Australian Government contributions. As a Research and Development Corporation (RDC), Hort Innovation is able to leverage industry levy investments in RD&E with Australian Government contributions up to a value of 0.5% of the industry's gross value of production. All investments made by Hort Innovation are thoroughly considered to ensure they contribute to our guiding performance principles:

- Productivity
- Profitability
- Preparedness for future opportunities and challenges
- Competitiveness
- Demand: demonstrates how productivity, preparedness and demand lead to profitability and competitiveness and sustainability.

APPENDICES

APPENDIX 1: Industry context

Industry supply chain

The Australian persimmon industry is small, seasonal and geographically diverse, with production occurring in most states except for Tasmania and the Northern Territory. There are approximately 80 persimmon growers across Australia, while agronomists, consolidators, wholesalers, exporters and distributors also support the supply chain. Most Australian persimmons are supplied for the fresh domestic market, and there is a small export trade. Negligible volumes of persimmons are processed, with drying being the most common form of processing.

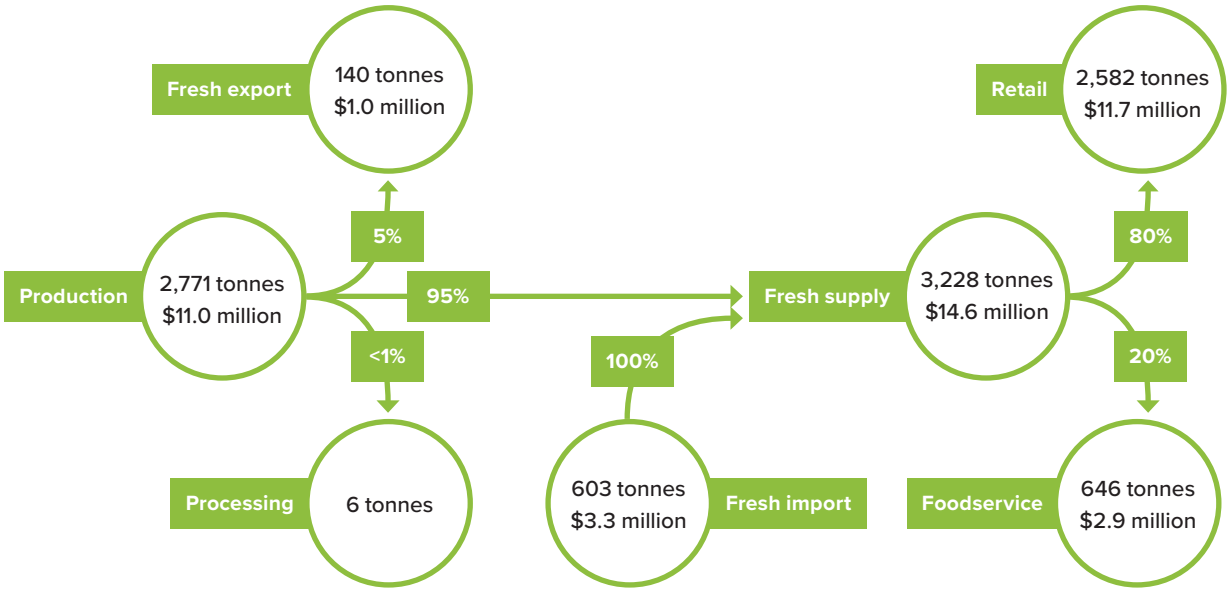
Persimmon production is labour intensive. For example, at harvest, the fruit is clipped from the tree, placed in bins and transported into the pack house where it is polished and packed by hand. The delicate nature of the fruit makes automation difficult, thus production units tend to be small and intensive.

There has been a significant proliferation of new plantings, particularly in the southern and western growing regions. The increased use of trellising methods including the palmette system have led to higher planting densities, improved picking and pruning and increased the efficiency of orchards.

Depending on the scale of operation, most growers have their own on-farm grading equipment, packing and cooling facilities, enabling them to do their own packing once the fruit is handpicked. The fruit is supplied to the central markets, supermarkets, farmers' markets, independent retailers and sold at the farmgate.

Persimmons are mostly grown for the domestic retail market with 5% of production exported and a very small amount being processed.

FIGURE 3. Persimmon supply chain, 2019/20



Source: *Australian Horticulture Statistics Handbook (2019/20)*

Domestic consumers and drivers of demand

The domestic fresh market is the most important channel for the Australian persimmon industry and accounted for 95% of the total production volume in 2019/20. The domestic market has remained steady in recent years. Sweet persimmons were introduced in the 1990s because they have a greater degree of acceptability with consumers and are more versatile.

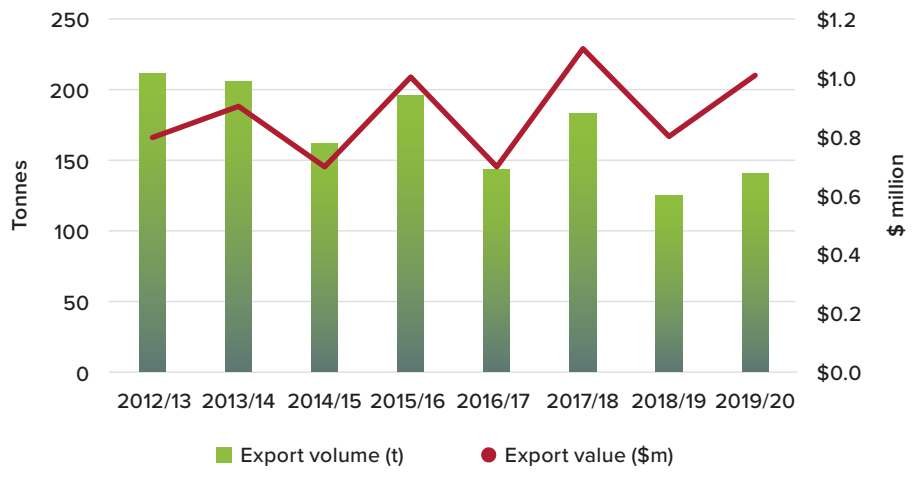
Qualitative research of 200 shoppers completed in 2019 found that only 27% have heard of persimmons before with 8% claiming to be a regular consumer through the season. The main barrier to purchase was found to be awareness, with improved seasonal awareness and selection/storage being the most useful areas to encourage more consumption[1]. These findings are consistent with previous consumer research completed in 2013[2], where 73% of respondents reported that they haven't previously purchased the fruit. Almost half of non-consumers reported that the main reason for not buying the fruit was the lack of knowledge about persimmons, while a third indicated not knowing how to consume them. In store purchase decisions make up 63% of persimmon buyers, which highlights the importance of point-of-sale promotional material.

Strategic industry promotions have focused on consumer communication and education about the Australian persimmon season through social media, events and influencers. The flagship promotional initiative for the industry has been the annual sampling event that is delivered for the Sydney Royal Easter Show.

An estimated 9% of households purchased persimmons in 2019/20, with per capita consumption of 130 grams, based on the volume supplied.

Export markets

FIGURE 4. Persimmon exports, 2012/13 to 2019/20



Source: *Australian Horticulture Statistics Handbook (2019/20)*

Export volumes have been declining over recent years, from 210 tonnes in 2012/13 to 140 tonnes in 2019/20 valued at $1.01 million. Over the same period the Free on Board (FOB) unit export value has nearly doubled, from $3.67 per kilogram in 2012/13 to $7.23 per kilogram in 2019/20, indicating that persimmons are achieving higher values in export markets (***Figure 4***). Exports represented approximately 5% of production.

Persimmons are primarily exported to Singapore, Malaysia and Hong Kong, accounting for 84% of export volume in 2019/20. Small volumes of persimmons have been exported to Qatar and the United Arab Emirates.

1 Hort Innovation (2019). Joint tropical marketing opportunity – persimmons and custard apples.

2 Swinbourne, A., 2013/14 domestic marketing final report. 2014, Horticulture Australia Limited.

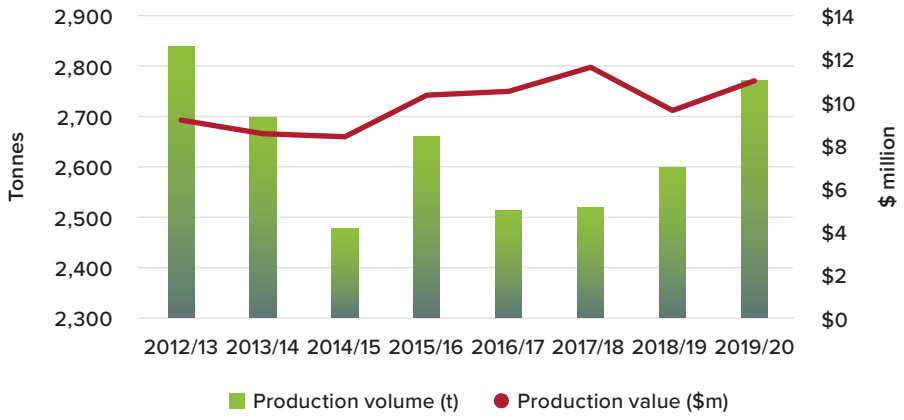
Potential expansion into the east Asian markets of South Korea, Taiwan, Japan and China is constrained due to current quarantine restrictions. Access to Thailand is available through an international market access to protocol.

Long term development of export markets requires a clear, multi-staged strategy. Industry access to markets can take up to ten years to achieve the required level of unrestricted trade but this will always be dependent on the ability of the country supplying to maintain acceptable fruit quality and acceptable protocols. Building grower and industry capability and consistency in existing export markets provides an important learning and testing ground in harvest, postharvest, logistics and marketing that is vital in building long term export markets.

Small volumes of persimmons are imported from New Zealand immediately following the Australian domestic season.

Industry production

FIGURE 5. Persimmon production, 2012/13 to 2019/20



Source: *Australian Horticulture Statistics Handbook (2019/20)*

The major states for persimmon production are Queensland (35%), followed by Victoria (25%), New South Wales (20%), South Australia (15%) and Western Australia (5%). Production is mainly between February and June, peaking in March to May.

Persimmon production has remained relatively stable since 2012/13, with 2,771 tonnes being produced in 2019/20 (***Figure 5***). Recent plantings of sweet persimmons in southern and western states are expected to significantly increase volumes as the trees come into bearing age.

There are two varieties of persimmon grown in Australia. Original persimmon varieties, which are astringent such as Hachiya and Rojo Brillante make up 5% of production, while sweet persimmon varieties, which are non-astringent such as Izu, Jiro and Fuyu make up 95%. Although the non-astringent varieties Fuyu and Jiro were only introduced into Australia in the late 1970s, they now account for over 90% of the volume of production.

The industry values the potential benefits of being able to extend the period that fruit can be supplied to the market, support consumer knowledge and awareness through increased availability of persimmons. Several options are available to achieve this outcome increasing the range of varieties available, developing supply in new regions to lengthen existing supply periods, management practices and using post-production techniques that extend the life of the product. Effective cold storage techniques can increase storage life from the existing 2 weeks to 8-10 weeks. Early- and late-season varieties that extend the season are also an option.

Existing practices of producing new trees using seedling rootstocks can produce significant variability in tree growth and yields which impacts on profitability. The development of a viable clonal propagation technique for rootstocks will have a significant positive impact on the industry. For this purpose, industry has invested in breeding projects with Hort Innovation such as *National persimmon varietal evaluation program 2018-2023* (PR17000), which is tasked with delivering superior and locally adapted rootstocks and continued import and evaluation of new persimmon varieties.

TABLE 4. Seasonality of Australian persimmons

STATE	2019/20 TONNES	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
New South Wales	554												
Victoria	693												
Queensland	970												
Western Australia	139												
South Australia	416												
Imported	602												

Availability legend		High		Medium		Low		None

Source: *Australian Horticulture Statistics Handbook (2019/20)*

APPENDIX 2: Persimmon industry situation analysis

At the time of refreshing the SIP in 2021, the global coronavirus (COVID-19) pandemic continues to affect horticulture industries to varying degrees. The outcome and ultimate impact of the pandemic are unknown. Investment areas that may be influenced over the period of this SIP include export and trade relationships, domestic and international demand, logistics and supply chain, labour supply – all have potential impacts on grower profitability.

Environmental, economic and social sustainability are vitally important to Australian horticultural growers and industries. Customers, consumers, and investors also seek information about the sustainability and ethics of how their food is produced. Sustainability is particularly crucial as topics such as climate variability, health and ethics continue to shape the social, environmental, and political landscape for agricultural industries. The impact of these issues may have influence on a whole range of investment areas for horticulture from production practices and land management, demand and reputation of products, quality expectations and cultural/community engagement.

Strengths, weaknesses, opportunities and threats

Table 5 has been used to analyse the persimmon industry's strengths, weaknesses, opportunities, and threats (SWOT). The SWOT tool assists the industry to build on what works, observe what is lacking, minimise risks, and take the greatest possible advantage of chances for success.

TABLE 5. Persimmon SWOT analysis

The persimmon industry	
Strengths	• Positive association with persimmon attributes such as exotic, healthy fruit, attractive, easy to eat and sweet • Highly competitive due to counter-seasonal supply capacity • Proximity to Asian markets • Compact growth habit of plantings • The geographical dispersion of production regions makes the industry less vulnerable to severe weather events, as well as enabling a distributed supply
Weaknesses	• Limited access to effective disease and pest control techniques are registered for use on persimmons • Difficulty in gaining access to nearby Asian markets • Prices are sensitive to fluctuations in supply • Increasing setup, production and supply chain costs • Lack of appropriate supply chain and production data to help overcome supply peaks and troughs • Ageing growers, combined with difficulties in identifying new/younger growers • Lack of clonal rootstocks means that crops are inconsistent from tree to tree • Low consumer awareness of persimmons domestically

The persimmon industry	
Opportunities	• Increased immigration from Asia to Australia provides market growth opportunities domestically, given the popularity of the fruit among Asian cultures • Value-add channel to be explored as currently an underutilised avenue to market • Potential increase in domestic demand due to consumer trends towards healthier food options • Potential to better manage supply into market • Development of clonal propagation for rootstocks • Interaction and interchange with other producing countries • Positive assessment of new cultivars may lead to a future introduction of varieties that meet consumer expectations • Consumers are becoming more aware of the different uses and attributes • Utilisation of postharvest cold storage to extend fruit life • Potential to take a long-term strategic approach to export development and put in place the foundations to be successful • Develop trade with existing export markets • Increase consumer association of Persimmon with seasonality (Autumn) and target consumption as a whole fruit to drive volume • Introduction of crop forecasting • Advances in protected cropping to improve production • Multi industry approach to clonal rootstocks
Threats	• Poor performing rootstocks • Emergence of disease-like symptoms impacting on new plantings • Impacts of bird damage on fruit quality • Production costs such as crop protectants, water, energy, and labour are growing at a faster pace than crop returns • Lack of year-round availability • Lack of shelf space on retailer displays

APPENDIX 3: People consulted

The following people are acknowledged for their contribution to the persimmon SIP development process.

NAME	INDUSTRY ROLE	REGION
Alison Fuss	Persimmon SIAP member; Program Reference Group member; Executive Officer, Persimmons Australia Inc.	Toowoomba, QLD
Brett Guthrey	Program Reference Group member; Persimmon SIAP member; Grower	Cobbitty, NSW
Rodney Dalton	Persimmon SIAP member; Grower	Lockyer Valley, QLD
Brett Del Simone	Grower	Perth Hills, WA
Paul Civa	Grower	Perth Hills, WA
Craig Burne	Grower	Renmark, SA
Chris Stillard	President, Persimmon Australia Inc.; Program Reference Group member; Grower	Barooga, NSW
Stephen Jeffers	Program Reference Group member; Secretary, Persimmons Australia Inc.; Grower	Woombye, QLD
Tom Dunn	Vice President, Persimmons Australia Inc.; Grower	Blackbutt, QLD
Warren Waddell	Committee member, Persimmons Australia Inc.; Grower	Galston, NSW
Mark Slim	Committee member, Persimmons Australia Inc.; Grower	Thirlmere, NSW
Henry Chmielewski	Committee member, Persimmons Australia Inc.; Grower	Perth Hills, WA
Nick Hobbs	Program Reference Group member; Grower	Renmark, SA

APPENDIX 4: Reference material

Footnotes

1. Hort Innovation (2019). Joint tropical marketing opportunity – persimmons and custard apples
2. Swinbourne, A., 2013/14 domestic marketing final report. 2014, Horticulture Australia Limited

Reference documents

Horticulture Innovation Australia Limited, 2012, Persimmon Strategic Investment Plan 2012-17

Horticulture Innovation Australia Limited, 2019, Growing into the Future: Strategy 2019-2023

Hort Innovation, 2019, Joint tropical marketing opportunity – persimmons and custard apples

Horticulture Innovation Australia Limited, 2020, Australian Horticulture Statistics Handbook 2019/20

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Persimmons Australia Inc., 2021, https://www.persimmonsaustralia.com.au/

APPENDIX 5: List of acronyms

AIP	Annual Investment Plan
APVMA	Australian Pesticides and Veterinary Medicines Authority
BMP	best management practice
CSIRO	Commonwealth Scientific and Industrial Research Organisation
FOB	Free on Board
FY	financial year
IRB	Industry Representative Body
KASA	knowledge, attitudes, skills and aspirations
KPI	key performance indicator
M&E	monitoring and evaluation
MRL	Maximum Residue Limit
NHRN	National Horticulture Research Network
NSW DPI	NSW Department of Primary Industries
R&D	research and development
RDC	Research and Development Corporation
RD&E	research, development and extension
SARP	Strategic Agrichemical Review Process
SIAP	Strategic Investment Advisory Panel
SIP	Strategic Investment Plan
SWOT	strengths, weaknesses, opportunities, and threats

Hort Innovation

Horticulture Innovation Australia Limited
ACN 602 100 149

Level 7, 141 Walker Street
North Sydney NSW 2060 Australia

02 8295 2300 | communications@horticulture.com.au

www.horticulture.com.au