

# HORTICULTURE

in south australia



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## **Introduction**

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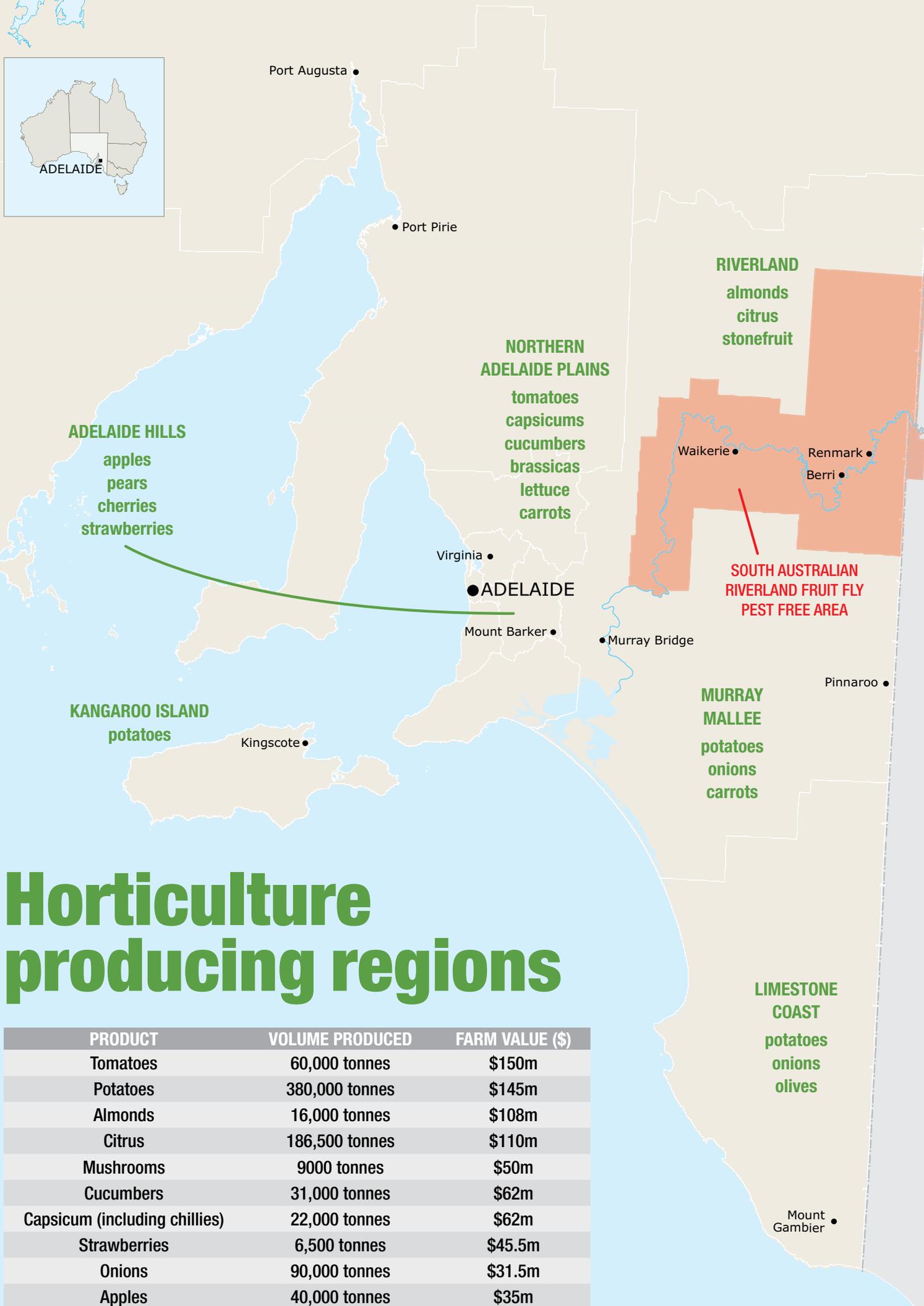
South Australia is a global leader in the production of premium, environmentally clean, safe and advanced horticultural crops.

Tomatoes, potatoes, citrus and almonds lead the vast array of fruit and vegetable crops produced in South Australia.

In 2017-18, the horticulture industry contributed \$1.6 billion to South Australia's economy.

Passion, innovation and an unwavering commitment to quality is driving the South Australian horticulture industry into a new era of prosperity.

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# Horticulture producing regions

PRODUCT	VOLUME PRODUCED	FARM VALUE (\$)
Tomatoes	60,000 tonnes	\$150m
Potatoes	380,000 tonnes	\$145m
Almonds	16,000 tonnes	\$108m
Citrus	186,500 tonnes	\$110m
Mushrooms	9000 tonnes	\$50m
Cucumbers	31,000 tonnes	\$62m
Capsicum (including chillies)	22,000 tonnes	\$62m
Strawberries	6,500 tonnes	\$45.5m
Onions	90,000 tonnes	\$31.5m
Apples	40,000 tonnes	\$35m

(2016-2017)

# Why South Australia?

Home to **Australia's National Almond Centre of Excellence**



Australia's **second biggest exporter** of:

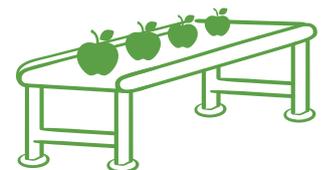
- Potatoes (30% of all 2017–18 Australian exports)
- Almonds (28% of all 2017–18 Australian exports)
- Citrus (30% of all 2017–18 Australian exports)



Number one in protected cropping in Australia, with more than 700 hectares of greenhouses



Australia's number one producer of onions. In 2015–16, SA accounted for 48% of Australia's total onion production<sup>1</sup>



High number of professional, vertically integrated businesses across the supply chain



Australia's number one producer of fresh potatoes. In 2015–16, SA accounted for 34% of national fresh potato production<sup>2</sup>



Home to the world-leading national **Sterile Insect Technology facility** (producing sterile Queensland fruit flies)



South Australia is a leader in irrigation

## Government Supporting Innovation

### Irrigation and water use

South Australia may be the driest state in the driest continent, but this was a challenge the state's horticulture industries have been happy to accept.

South Australia is now a global leader in water use efficiency and irrigation systems.

The Goyder Water Institute and International Centre of Excellence in Water Resources Management are both based in South Australia and bring together the state's leading water research capabilities.

The South Australian Government, in partnership with industry, has supported water efficiency transformation across the agriculture and horticulture industries, ensuring a sustainable source of water into the future.

Two of the more important recent programs to support industry in its efforts to drive sustainable and efficient water use are:

### South Australian River Murray Sustainability Program

The \$265 million South Australian River Murray Sustainability (SARMS) Program is investing in irrigation efficiencies, water returns, irrigation industry assistance and regional economic development under the \$240 million Irrigation Industry Improvement Program (3IP) and the \$25 million Regional Economic Development Program.

Projects are reshaping the region, including the reconfiguration of irrigation and production systems, expansion of netting over crops, changes in crop types, and increased value-adding to products and processes through innovations such as automated fruit and vegetable packing machines.

### Northern Adelaide Irrigation Scheme

Producing fresh, premium foods to meet changing consumer needs and ensuring a reliable and sustainable food supply to meet global demand are two significant challenges facing Australia's horticulture industry.

The South Australian Government is growing the capacity of the Northern Adelaide Plains region to ensure the long-term viability of its horticulture industry and the social and economic future of its communities.

Through the Northern Adelaide Irrigation Scheme (NAIS), the government will help secure large volumes of affordable, high security, recycled water for the region.

An additional 12 gigalitres (GL) per year of recycled water suitable for irrigation will be sourced from the Bolivar Waste Water Treatment Plant, increasing the reuse of treated water from this site by 60 percent.



Sundrop Farms at Port Augusta

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## Advanced Production Systems

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Technologically advanced and sustainable horticulture is a key focus in South Australia.

Industry and government are investing in high tech infrastructure, including the construction of the southern hemisphere's largest climate controlled glasshouse, and seawater and solar-fed greenhouse facility.

These initiatives will ensure high value, premium crops can be grown for new and existing markets.

Developing new varieties suited to the changing consumer preferences and increasing water use efficiencies are also a focus of the South Australian horticulture industry.

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### Using seawater and solar for advanced production

Global agribusiness Sundrop Farms is reimagining agriculture with its desert site at Port Augusta, where the abundant local resources of seawater and sunlight are being used to produce food at a lower cost than in traditional glasshouses. Sundrop Farms employs leading edge technology to grow high quality produce all year round in arid climates. It has expanded its Port Augusta operations by 20 hectares.



### Apple grading technology increasing quality and quantity

Adelaide Hills business Ceravolo Orchards is achieving new levels of quality and quantity, following an investment in a new apple grading system. A critical part of the system, the blemish grader digitally detects blemishes and imperfections with a high degree of sensitivity and accuracy. The new grading equipment is allowing Ceravolo Orchards to better meet customer requirements and grow their business.

### Citrus producers netting water savings

The Arnold brothers of Pyap Produce in the Riverland were among the first in the Riverland to net their citrus orchard. Using funding from the South Australian River Murray Sustainability (SARMS) Program, the Arnolds netted 20 hectares of oranges and mandarins.

And they couldn't be happier with the results. They are seeing improved quality of the fruit, better yields and the water savings are exceeding their expectations. Plus, the produce is now returning more value for the water they are using on the farm.





Fruit fly traps are regularly checked

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## Biosecurity

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### Protecting our industry

Australia values strong and open trade relationships with our international partners. Australia has excellent food safety, pest and disease management, and animal and plant production systems. This makes it possible to export high quality agricultural commodities to our partners in Asia and around the world.

Australia is fortunate to be free from many pests and diseases that affect trade in agricultural commodities. This is actively protected through our strict biosecurity arrangements.

### South Australia – Fruit Fly Free

Australia is a large country characterised by different climates and different geographic regions. The cold areas in South Australia provide less favourable conditions for fruit flies.

Domestically, South Australia is the only mainland state recognised as being free of fruit flies. This enables interstate movement of fruit from all of South Australia without the need for disinfestation treatments for fruit fly.

### Riverland Pest Free Area

Internationally, South Australia's Riverland production area is a recognised Pest Free Area (PFA), and is free of both Queensland fruit fly and Mediterranean fruit fly. The PFA is maintained in accordance with the International Plant Protection Convention's (IPPC) International Standard for Phytosanitary Measures (ISPM26).

Geographically, the Riverland production area is naturally protected by a vast arid buffer between interstate areas in which fruit fly are present and the Riverland Pest Free Area. This dry interior is an unsuitable environment for fruit flies and provides a natural barrier preventing incursion of the pest.

The Riverland PFA is recognised by international markets, including the United States, Thailand, Japan and New Zealand. The PFA status allows produce from the Riverland to be shipped directly to these countries without the need for disinfestation treatments for fruit fly, thereby reducing costs and delays across the supply chain. This also results in a key market advantage as products reach markets in a premium condition, often with a longer shelf life.

The South Australian citrus industry is the main benefactor of the Riverland's Pest Free Area status, exporting \$131 million worth of citrus in 2017–18.

### Prevention Measures

The South Australian Government is committed to protecting South Australia's fruit fly free status. In 2017–18 the estimated farm-gate value of the state's produce vulnerable to fruit fly infestation, including wine grapes and almonds, was \$1.2 billion.

Every year the South Australian Government spends about \$5 million to ensure we continue to keep fruit fly and other plant pests out of the state. This is achieved through a range of prevention, detection and eradication measures approved under the ISPM and undertaken by the Government of South Australia.

Phytosanitary measures that are undertaken to protect South Australia from fruit fly include:

- Maintenance and monitoring a surveillance network of more than 7,500 trap sites across the state and over 100,000 site visits to fruit fly trap sites by inspectors
- Biosecurity border controls: four quarantine stations located on major South Australian highways and more than 730,000 vehicles checked each year
- Regularly serviced quarantine bins are located at key entry points to the state for travellers to dispose of any fruit that could pose a risk to our PFA status
- Random roadblocks are carried out on roads with disposal bins, where travellers will be fined if found with restricted items
- Industry engagement and coordination to ensure industry are proactive in their protection of the PFA
- Employment of a dedicated Riverland Fruit Fly Coordinator to work with industry

- Research and development to improve monitoring and control capabilities
- Regular auditing of certified businesses importing fruit fly host produce into the state
- An annual community awareness campaign is delivered to ensure the public and travellers know what they need to do to keep South Australia fruit fly free and how important this is for producers.

### Additional Measures: National Sterile Insect Technology facility

A new \$3.8 million, world-leading National Sterile Insect Technology (SIT) Facility was commissioned at Port Augusta in 2016. Located 300 km from Adelaide in the state's dry, arid north, the SIT facility is assisting in the fight against Queensland fruit fly nationally.

When full production is reached, this high-tech facility will be able to produce up to 20 million sterile male Queensland fruit fly (Q-fly) each week. The sterile male flies will be released to mate with females, collapsing wild populations in fruit fly affected horticulture growing regions across Australia and New Zealand.



SARDI researchers examining potatoes

## Research and Development

### South Australian Research and Development Institute

The South Australian Research and Development Institute (SARDI), a division of PIRSA, is the State Government's principal research institute.

For 25 years, SARDI has delivered practical science to make South Australia's agriculture, food, fisheries, aquaculture, aquatic and bioscience enterprises profitable, internationally competitive and ecologically sustainable.

The Waite Research Precinct in Adelaide, which includes SARDI's Plant Research Centre, has the largest concentration of expertise in the southern hemisphere in plant biotechnology, cereal breeding, sustainable agriculture, wine and horticulture, and land management.

### SARDI research in horticulture includes:

- DNA testing (PreDicta) for a range of soil-borne plant pathogens in horticulture.
- Developing diagnostic technologies to enhance pest and disease identification and management in horticultural crops including almonds, potatoes and citrus.
- Identifying soils best suited to use of recycled water and evaluating new water resources to sustainably expand irrigated horticulture in the Northern Adelaide Plains.
- Precision irrigation and fertigation, to overcome rootzone salinity under low water or poor water quality conditions.
- Developing a male only, sterile, temperature sensitive Queensland fruit fly for area wide fruit fly management of horticulture industries.



South Australia's almond industry is significant

### **Loxton Research Centre**

The Loxton Research Centre is a showcase of South Australia's extraordinary River Murray region, supporting and promoting South Australia's global reputation as a leader in agriculture and a quality producer of food and wine.

The centre is a collaborative hub, bringing together industry, research, education and government to drive agriculture and business innovation in South Australia, Australia and globally.

It's home to the Centre of Excellence for the Australian Almond Industry, which is championing groundbreaking research for this important horticultural industry.

Since its opening, the centre has welcomed several new tenants, including the Regional Development Association, hosted numerous workshops and conferences as well as its first SALA art exhibition. And its builders, the Riverland-based company Michael Kregar Building even won Master Builders SA 2017 Building Excellence Awards for Excellence in a Commercial/Industrial Building for its work on the centre.

### **Almond Centre of Excellence**

A 60-hectare trial site at the National Almond Centre of Excellence is aiming to improve productivity and profitability for the Australian almond industry.

The site at Loxton, in the SA Riverland, is being developed into an experimental, world-leading orchard through a partnership between the South Australian Government, via SARDI, and the Almond Board of Australia.

The site will be used to evaluate soil amendment treatments, new rootstocks and varieties, climate change adaptation, irrigation and nutrition treatments, and alternate growing systems including higher density plantings.

The Californian almond industry, which produces 80% of the world's almonds, recently experienced a drought and is keen to learn the outcomes of this research.



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