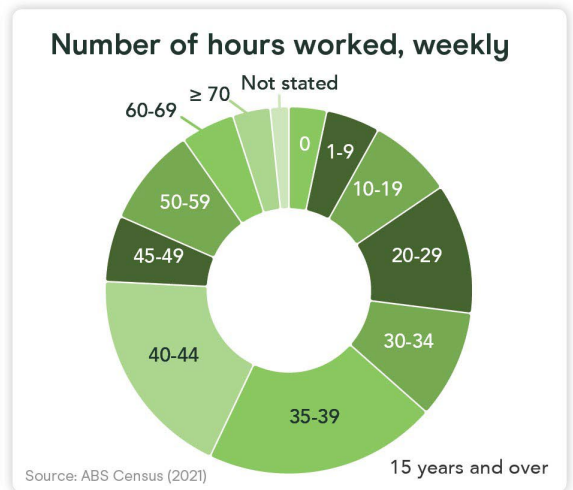
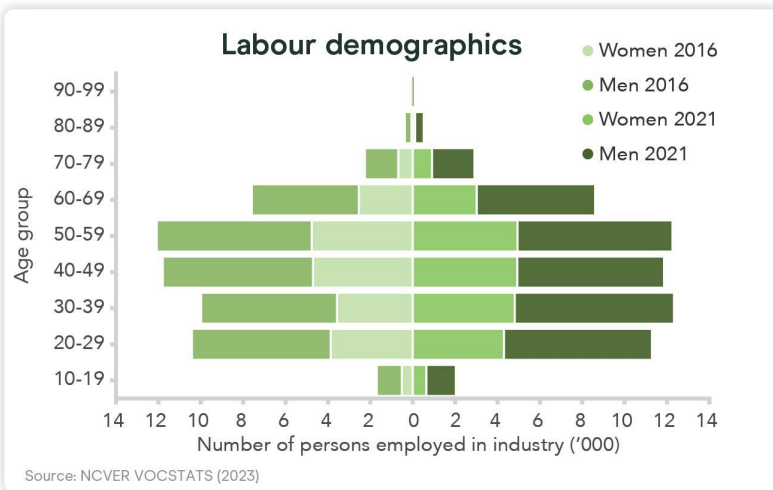
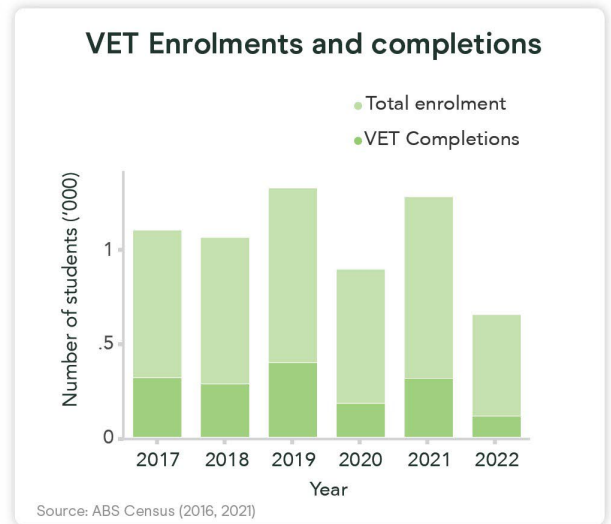
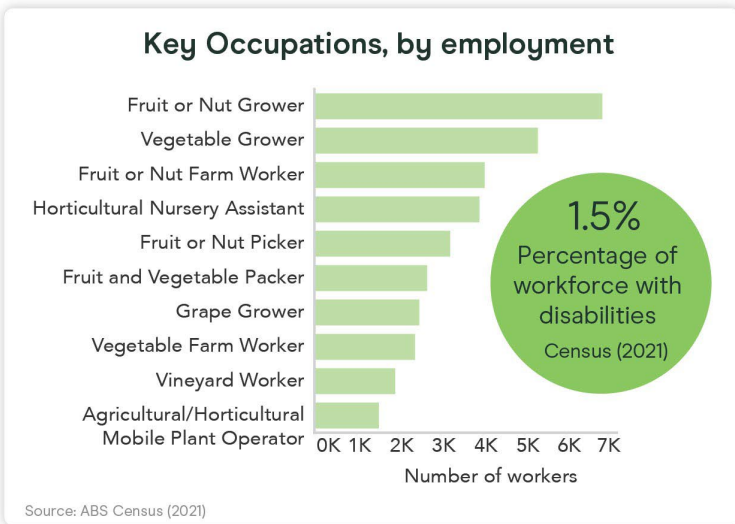
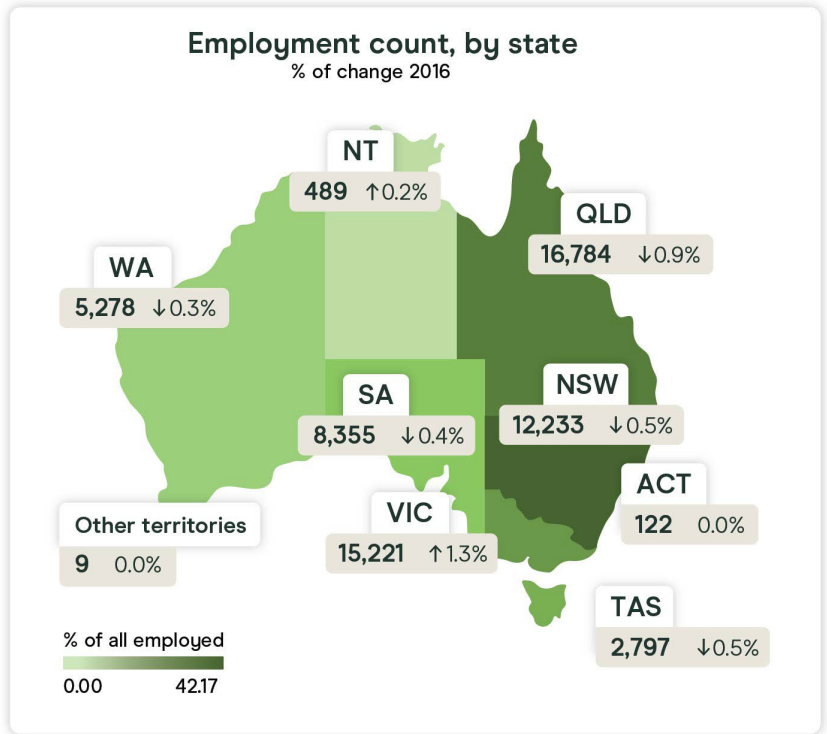


3.1. Production Horticulture

Production Horticulture



ANZSIC A0111, A0112, A0113, A0114, A0115, A0121, A0122, A0123, A0131, A0132, A0133, A0134, A0135, A0136, A0137, A0139



3.1.1. Industry sectors (ANZSIC Classes)

- Nursery Production (Under Cover)
- Nursery Production (Outdoors)
- Turf Growing
- Floriculture Production (Under Cover)
- Floriculture Production (Outdoors)
- Mushroom Growing
- Vegetable Growing (Under Cover)
- Vegetable Growing (Outdoors)
- Grape Growing
- Kiwifruit Growing
- Berry Fruit Growing
- Apple and Pear Growing
- Stone Fruit Growing
- Citrus Fruit Growing
- Olive Growing
- Other Fruit and Tree Nut Growing

Key insights from industry sector infographic and other data	Priority
Labour shortages	High
Seasonal and migrant labour needs	High
Lack of workforce diversity	Medium

Production horticulture is a diverse industry that plants, grows and harvests fruit, nuts and vegetables on a large scale, in both under-cover (hydroponics/greenhouse) and outdoor (field) production systems. Operators use automated planting and transplanting processes, integrated biological and chemical pest control, mechanical harvesting, and micro-irrigation and wireless sensors for maintaining soil moisture levels. There is also increasing use of controlled atmosphere storage to regulate temperature, oxygen, carbon dioxide and humidity of storage conditions to maintain supplies of fresh produce out of season.

The workforce has highly specialised skills in establishing horticultural crops, identifying and reporting signs of unusual disease or pests, applying fertilisers and pesticides according to regulatory and legislator requirements, operating machinery and equipment, harvesting crops (including with robotics, and autonomous precision systems), implementing a post-harvest program, and applying environmentally sustainable work practices, including to maintain soil health and water use efficiency. The industry is developing further skills in cultivating new food sources, landcare, farm management, digital literacy and compliance to address emerging needs and pursue new opportunities.

The National Training Register details qualifications corresponding to specialised job roles in this industry, including:

- Production Horticulture (Certificates II, III, IV, Diploma)
- Protected Horticulture (Certificates II, III IV)
- Medicinal Cannabis Cultivation and Production (Certificates III, IV)
- Viticulture (Diploma)

Below are examples of units of competency, which sit within these qualifications, that are unique to the skills and knowledge applied by competent industry workers:

Unit title	Unique skills and knowledge
Perform manual pollination of crops (AHCPHT212)	This unit applies to individuals who manually pollinate crops, including preparation and implementation for pollination activities.
Apply security measures for medicinal cannabis (AHCMD401)	This unit applies to individuals who apply measures for the security of a controlled growing, licensed medicinal cannabis site.
Establish and monitor hydroponic crops (AHCHYD401)	This unit applies to individuals who establish hydroponic crop nutrient requirements, supervise crop planting activities and monitor nutrient concentrations of hydroponic crops.

3.1.2. Drivers of workforce dynamics

Sector growth

Hort Innovation recently predicted strong growth in the sector through to 2030. Says Hort Innovation chief executive officer Brett Fifield: ‘The data shows the Aussie horticulture sector is on a significant growth trajectory, driven largely by strong export growth from trade-focused commodities, as well as productivity increases and population growth.’²¹

Seasonal and migrant labour needs

There are data and evidence gaps relating to season and migrant labour (see the section on data and evidence gaps below for further discussion). ABARES reports that throughout the year there are great variations in total employment on farms, reflecting the timing of labour-intensive operations. For planting and harvesting, the total number of people employed on farms is highest in late summer and dips significantly in late winter. Sectors such as production horticulture use large amounts of casual and contract labour for this (in contrast, broadacre and dairy farms tend to employ workers on a permanent basis, reflecting their year-round operations).²²

Production horticulture farms normally rely on workers from overseas during peak seasons, including Pacific Australia Labour Mobility (PALM) workers and Working Holiday Makers (WHMs), who may not be included in various data collection publications, making evidence for future need difficult to quantify (see data gaps section for further discussion). It also means unforeseen disruptions such as COVID-19, when the number of WHMs in Australia declined by 87%, can leave employers with severe skills and labour shortages that are unlikely to be filled by domestic workers in the short term or without significant government incentives.

ABARES has also suggested the need for further research and analysis of worker productivity, costs and outcomes for growers under different labour supply models such as labour hire and contractors (relating to both seasonal workers and working holiday makers).²³

Labour shortages

The National Skills Commission’s (2022) Skills Priority List drew attention to occupations that are in national shortage, such as Sports Turf Trades Worker, and in regional shortage, including Horticultural Crop Growers nec.

In their White Paper Submission to the 2022 Jobs and Skills Summit, AUSVEG, which represents the major industry vegetable associations across Australia, noted that ‘The Australian vegetable industry faces significant challenges in securing a sufficient, competent, and reliable workforce’ with the labour shortage identified to be approximately 10,000 individual workers. They further identified that the ongoing labour shortage resulted not just in the economic cost of lost production, but also a reduction in investment to improve future efficiencies and profitability.²⁴

The Queensland Agricultural Industry Workforce Plan 2022-2027, prepared by Queensland Farmers’ Federation and Jobs Queensland in collaboration with the Rural Jobs and Skills Alliance, noted that the fruit, nut, and vegetable sectors all rely heavily on casual labour, which generates high training and administration costs and that this, in turn, has a negative impact on workforce efficiency.²⁵

Sustaining plants

Within the overarching strategy of sustaining plants, trees, animals, and materials, there are specific issues in production horticulture around the use of pesticides. The introduction of a single national law covering the use of pesticides has been proposed²⁶ and, if introduced, is likely to have a significant impact on the requirements for operations and workplace safety training in this sector.

Vertical farming is an emerging method of growing and sustaining fruit and vegetables in vertically stacked layers in an indoor, controlled environment. Vertical farming utilises horticultural techniques but usually without natural light and soil. Such approaches will be monitored for their impact on skills and workforce needs.

Digital and automation practices

Agricultural technology is already extensively utilised in production horticulture, including with robotics and automation, and will continue to have a significant impact on the skills required in the sector.

Pay rates

Pay rates in Victoria for production horticulture workers have recently increased and are anticipated to have flow-on impacts on workforce dynamics,²⁷ including in the workforce attraction and retention strategies of businesses. Such developments will be monitored nationally.

Production Horticulture Summary

Workforce challenges

- The attraction of casual and migrant labour, especially during peak seasons.
- Workforce diversity and culture: gender disparity, ageing workforce, long working hours.
- The adoption of automation and robotics technologies, which is augmenting skills and job roles.

Key evidence gaps

- Data on seasonal and migrant labour employment supply and demand.

Workforce planning priorities

- Research on the productivity and profitability outcomes of different hiring practices and the efficacy of different labour models. **(1a, 1b, 1c, 2a, 2b, 4a, 4b, 4c)**
- Support industry to attract a diverse workforce, including skilled migrant and seasonal workers, to address imbalances and skills shortages. **(2d, 4b, 4c)**
- Identify opportunities for the greater application of emerging methods, e.g. automation, robotics and vertical farming, and develop new training products where necessary. **(2a, 2b, 2c, 3a, 3b)**