



# Food, Beverage and Pharmaceutical



**Society is reliant on the skills of the food, beverage and pharmaceutical manufacturing industry to produce the products needed by humans and animals every day, whether that be in the form of packaged foods, processed ingredients, bottled beverages, or life-saving and enhancing medicines.**

**This industry is highly attuned to the needs and wants of its consumers and has been adapting to keep up with the latest developments around automation and traceability for its large-scale operations. At the same time, the industry is expanding its skills into new areas, such as native foods and pharmaceutical bioprocessing.**

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Employs more than  
195,000 people

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Contributes \$23.6 billion to  
Gross Domestic Product

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Revenue of \$98.4 billion

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Source: IBISWorld Industry Wizard, 2021

**As the largest single manufacturing sector, food and beverage accounts for 27.9% of total manufacturing turnover in Australia**

Australian Government, 2021, Food and Beverage National Manufacturing Priority road map

**Pharmaceutical manufacturing sector employs over 30,800 people and has a projected employment growth rate of 7.2% up to 2024.**

Sources: a) ABS, 2021, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, May 2021; EQ06 - Employed persons by Industry group of main job (ANZSIC), Sex, State and Territory, November 1984 onwards; b) Labour Market Information Portal, 2020, 2020 Employment Projections

**The COVID-19 pandemic has highlighted the importance of a well-supported and highly skilled food, beverage, and pharmaceutical processing industry, with spikes in demand for certain products such as flour and pasta throughout lockdowns, increasing interest in locally sourced goods, and pressure to build up sovereign pharmaceutical manufacturing capacity as global demand for vaccines continues. While the skills of this industry are critical for day-to-day survival, they also play a big part in recreation, supplying restaurants, bars, and home kitchens, and supporting people's health so these things can be enjoyed.**

The national skills standards and qualifications for Australia's food, beverage and pharmaceutical industry are overseen by the Food, Beverage and Pharmaceutical Industry Reference Committee (IRC) and the Pharmaceutical Manufacturing IRC.



# Skills Forecast

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The last year has seen the food, beverage and pharmaceutical manufacturing industry face both disruption and unprecedented growth due to the ongoing impacts of COVID-19, drought, bushfires, flood and trade issues, as well as changes in consumer preferences. To stimulate job growth and strengthen the industry, the Australian Government is implementing a series of initiatives which will offer funding to businesses that are scaling up, build resilience into the supply chain, and plan for the future of the industry.

Investments in pharmaceutical manufacturing has seen significant increases to support the development of sovereign capability, particularly in the production of vaccines. More broadly, industry has responded to the challenges of the pandemic by boosting domestic production and building new facilities to compensate for Australia's usual reliance on imported products. With such a strong growth rate it is anticipated that industry will place a greater emphasis on formal training, as new entrants enter the workforce.

The pandemic has also strengthened consumer trends towards products that match their values. People are increasingly interested in supporting small local businesses and in purchasing products that are ethical, sustainable and health-focused. Skills in traceability and labelling are key to giving customers the information they need to make informed decisions.

The wine industry has been faced with particular challenges this past year, with COVID-19 closing bars, restaurants and cellar doors, extreme weather affecting crops, and trade interruptions decreasing the value of Australian bottled wine.

The National Skills Commission (NSC) has shifted its focus to identifying training options for workers that have become unemployed due to COVID-19. As well as upskilling and reskilling opportunities, the NSC are championing 'skills transferability' as a pathway to better employment prospects. This is something the food, beverage and pharmaceutical industry may be able to capitalise on as it continues to grow and evolve in response to consumer tastes and global forces.

## Projects for 2021-22

The following projects have been approved by the Australian Industry and Skills Committee (AISC) for 2021-22.

### Australian Native and Bush Food

Indigenous food is a rapidly expanding sector in both local and global markets. Given that only a small proportion of native foods have received food safety certification so far, there is plenty of room for further growth. New job roles are emerging requiring specific skills for working in Indigenous communities and remote locations, harvesting and processing wild food, and exporting products according to strict regulations.

### Pharmaceutical GMP

Good manufacturing practice (GMP) systems are used by the pharmaceutical manufacturing industry to ensure that products are consistently produced and controlled according to quality standards. Three Pharmaceutical Manufacturing qualifications currently contain GMP units that industry recommends are reviewed and updated so that appropriate training in these critical practices can be accessed, as well as ensuring that each unit aligns with its designated Australian

Qualifications Framework (AQF) level. In addition, business units within the Certificates III and IV in Pharmaceutical Manufacturing have been superseded and should be replaced with the current versions so that training delivery reflects current practices.

### Sugar Milling

Sugar milling qualifications are widely used in sugar mills to develop training and define skills requirements for various roles, but are not formally delivered or assessed by any RTO. With the nature of the sugar industry changing, adopting increased automation and branching out into producing biofuel, the skills required for work in sugar milling are also shifting. This proposed project is to review current sugar milling qualifications and redesign training options to reflect the skills shared across industry job roles, and to encourage use of sugar milling units within the VET system.



# Project Work Between 2020-21

## Outlined over the following pages is a summary of projects Skills Impact managed between July 2020 and June 2021.

The Food, Beverage and Pharmaceutical IRC and the Pharmaceutical Manufacturing IRC oversaw the project development, as part of their responsibility to support engagement with their industry and to ensure the projects meet stakeholder needs.

The skills standards and qualifications updated as part of the following projects were endorsed by the AISC and State and Territory Ministers in 2021. They are published on the national training register ([training.gov.au](http://training.gov.au)) and available for delivery by registered training organisations (RTOs).

Visit [skillsimpact.com.au/completed-projects](http://skillsimpact.com.au/completed-projects) for further details.

### Flour Milling Project

The skills to produce flour, oats, maize and other milled products are highly technical and sought after. Strong continued demand for these products has seen the flour milling industry adopt increasingly sophisticated automated systems and processes. As a result, the workforce has become more concentrated and milling operatives require diverse skills to be across a larger part of the process. Consumer interest in an expanding variety of flour and grains and an increased focus on traceability has also driven industry to develop and adapt its skills.

Consultation took place throughout this project to review the national skills standards for flour milling, which had not been updated in some time. Industry experts indicated early in the project that there were industry-supported options available outside of the VET system that appropriately

met upskilling requirements at the level of the Certificate IV in Flour Milling. However, a skills gap was identified at the Certificate III level, for a mill operative or miller's assistant role, which shares many foundation skills used across the food and beverage processing industry at that level. As a result, a specialisation in the Certificate III in Food Processing has been developed to reflect the technical expertise required and support flexible career pathways. Following industry advice, the Certificate IV in Flour Milling is proposed for deletion. The proposed new milling specialisation includes core units that cover food safety and quality, traceability, good manufacturing practice (GMP), work health and safety, and process operator skills and knowledge.

"For me it is difficult to imagine a day where I do not eat a flour-based product. From bread to meat pies, crackers to cakes, biscuits to pasta, donuts to gyoza, noodles to pancakes, pizzas to beer battered chips and everything in between. Having skilled milling operatives and assistants is now more important than ever." James Bunn, National Head Miller at Allied Pinnacle Pty Ltd

### Key Outcomes

- Milling specialisation developed within the Certificate III in Food Processing.
- Two skill sets developed to cover skills for food processing operators, including mill operatives and miller's assistants.
- Current units updated so they match the work currently carried out in grain processing.
- A unit developed for operating and monitoring a reduction system.

- Certificate IV in Flour Milling proposed for deletion.
- Five units proposed for removal as they either describe skills required at a management or supervisor level, which are being met by alternative industry-supported training options, or describe skills that have been embedded across other units.

### Food and Beverage Processing Project

Over the past ten years, consumer demand has inspired a range of innovations and shifted the way job roles are performed in the food and beverage processing sector. Today's customers want to know where their food and beverages came from and what is in them. They also care how they are packaged. This has inspired improvements in traceability and allergen control, and the development of new products.

Thanks to all involved in this project, industry has access to updated qualifications and skills standards that reflect current job roles to produce food and beverage products. The updated and developed qualifications, skill sets and units incorporate skills to utilise new and emerging food processing technology and systems, address issues around allergens and traceability, work using good manufacturing practice and uphold the Food Standards Code. Qualifications and units have been merged where appropriate to remove duplication and streamline delivery. Specialisations have been added to the Certificate III in Food Processing to support more flexible career pathways and help acknowledge specialist expertise.

## Modernisation of the Food, Beverage and Pharmaceutical Training Package

The work that took place between 2019 and 2021 as part of the Food and Beverage Processing, Flour Milling and High-Volume Production Baking projects resulted in substantial changes being made to over 85% of the qualifications within the Food Beverage and Pharmaceutical Training Package. This included streamlining, removing duplication, deleting unused qualifications and developing skill sets and specialisations within qualifications. This work is in keeping with the aims of the Australian Government's Modern Manufacturing Strategy<sup>6</sup> to double the value of the food and beverage manufacturing industries through a focus on smart manufacturing, innovation, food safety and origin and traceability systems.

<sup>6</sup> Australian Government (2021); Make It Happen: The Australian Government's Modern Manufacturing Strategy; <https://www.industry.gov.au/sites/default/files/October%202020/document/make-it-happen-modern-manufacturing-strategy.pdf>



“The Food, Beverage and Pharmaceutical Training package is a key cornerstone to the provision of skills and underpinning knowledge of process technology and supporting processes within our industry. In our case, its role is reinforced within our Industrial Agreement instrument to provide employees with skills, recognised qualifications, career progression and learning paths, whilst providing our business with a workforce with necessary skills and knowledge.”

Carolyn Gray,  
Nestlé Confectionery & Snacks

#### Key Outcomes

- Five qualifications reviewed and redesigned to become three qualifications, including updates to reflect necessary skills in allergens and traceability and checking and adjusting alignment to the Australian Qualifications Framework (AQF):
  - Certificate I in Food Processing
  - Certificate II in Food Processing (merged with Certificate II in Food Processing [Sales])
  - Certificate III in Food Processing (merged with Certificate III in Food Processing [Sales]), includes 12 specialisations.
- Seventeen units developed to capture current industry skills needs related to allergens, traceability, edible oils, food specific good manufacturing practice (GMP), fruit/vegetable juices and equipment maintenance.

- Four skill sets developed for skills in allergens and traceability and for introductory skills for new workers in the sector.
- 114 units revised to better reflect current industry practices, terminology and standards.
- Ten units deleted, as feedback indicated they were no longer needed by industry.

#### High Volume Production Baking Project

Australians are spending more on quality baked goods and are increasingly interested in a broader range of products – from gluten free options to nutrient enriched breads. The high-volume production baking industry is uniquely equipped to meet this demand, producing the baked goods that line supermarket shelves around the country. As more digital and automated technology is adopted to feed this hunger for baked goods, industry is leading change by identifying augmented job roles and emerging skills needs.

Thanks to everyone who contributed to this project, the high-volume production baking sector will soon have access to an updated qualification and skills standards to reflect these industry changes.

The updated Certificate III in High Volume Baking incorporates the unique skills required to work in the four industry sub-sectors of pastry, cakes, biscuits and bread. It also captures skills related to food safety, good manufacturing practice, work health and safety, traceability, setting up processing lines for production or packaging, and using numerical applications.

#### Key Outcomes

- The Certificate III in Plant Baking was revised and renamed the Certificate III in High Volume Baking. It incorporates units of competency covering skills and knowledge across all four sub-sectors to allow flexibility and movement within the industry.
- Nine units of competency developed to fill skills gaps identified in current training programs and to meet the new and emerging needs of all four subsectors of the high-volume plant baking industry, including two technical units.
- Fifteen existing units have been revised so that they reflect current work functions.



# Completed Projects

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**The following projects were endorsed by the Australian Industry and Skills Committee (AISC). The revised qualifications, skill sets and units of competency, that were developed as part of these projects, are published on [training.gov.au](http://training.gov.au) and available for delivery by registered training organisations (RTOs).**

Visit [www.skillsimpact.com.au/completed-projects](http://www.skillsimpact.com.au/completed-projects) for further details.

## Pharmaceutical Bioprocessing Project

The expanding field of pharmaceutical bioprocessing harnesses organic material to produce treatments, tests and vaccines. Pharmaceutical manufacturing plays a vital role in putting science into action to produce products for treatment and diagnosis and making them available for use. Specific skills are needed to work with sensitive bacteria, yeast or mammalian cells to mitigate product degradation, process variability and contamination. Workers in this area also require high level analytical skills to work with new technologies and interpret data.

As a result of this project, nine units of competency were updated so that they are relevant to the methods, materials and regulations used when manufacturing products produced using pharmaceutical bioprocessing techniques. It is important the pharmaceutical industry is equipped with all the skills it may need, so it can respond to demand quickly, particularly in light of the COVID-19 pandemic.

**“Bioprocessing skills are an essential and growing part of the pharmaceutical industry, with seven out of the top ten drugs by sales value globally requiring such skills for the manufacture. I know from personal experience that these skills are needed, now and in the future, in order for our pharmaceutical manufacturing sector to grow and flourish. The recent pandemic crisis has underlined this need, not just globally but within Australia, for increased pharmaceutical manufacturing capacity in order for the country to meet current and future needs more self-sufficiently. I therefore wholeheartedly support the endorsement of the Bioprocessing Technologies training units.”**

**Dr Paul MacLeman, foundational Chair of the Pharmaceutical Industry Reference Committee and Chairman of AdAlta Ltd**

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## Key Outcomes

- Nine units of competency were updated to accurately describe the skills required to work in pharmaceutical bioprocessing manufacture.
- Updates have been made to terminology so that the units are current and accurate to the context of pharmaceutical bioprocessing. This includes:
  - The term ‘plant based’ materials has been replaced with ‘organic’ materials to be inclusive of the use of mammalian blood in some processes.
  - The application of the unit of competency FBPPHM3018 Operate a sterilisation process using an autoclave has been updated to include other accreditation or certification requirements, enabling it to be used across many other training packages and settings.
  - FBPPHM3007 Operate a separation process using chromatography has been renamed FBPPHM3019 Operate a chromatography manufacturing process.





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# COVID-19 Critical Response Project

**A skill set to support the pharmaceutical industry in its urgent response to the COVID-19 pandemic was developed and published in the later part of 2020. The Pharmaceutical Manufacturing Operator Induction Skill Set is designed to support displaced workers to gain new skills and build on existing skills, equipping them to enter the pharmaceutical processing industry. It describes foundation skills required within the industry, particularly for those employed to work with bioprocessed products, such as vaccines and antibody testing devices.**

The skill set was developed by industry experts, in a process supported by the Pharmaceutical Manufacturing Industry Reference Committee and managed by Skills Impact. It is included on the JobTrainer Fund list and the fee for registered training providers putting it on scope will be waived.

A range of resources and tools have been developed to support training delivery of the skill set, funded by the Commonwealth Government. They are available to download and use for free at [skillsimpact.com.au/publications-and-resources](https://skillsimpact.com.au/publications-and-resources)

The Pharmaceutical Manufacturing Operator Induction Skill Set was developed in response to the Critical Skills for Recovery initiative, driven by the Australian Industry and Skills Committee (AISC) and the AISC Emergency Response Sub-Committee. Work to develop the skill set was approved by the AISC Emergency Response Sub-Committee on 28 July 2020. The completed skill set was approved by the Sub-Committee on 16 September 2020.

This work is part of the AISC's efforts to ensure Australia's national training system is well positioned to address the workforce challenges presented by the COVID-19 pandemic and the subsequent economic downturn.