

# IN FOCUS 2022

THE AUSTRALIAN DAIRY INDUSTRY



# THE AUSTRALIAN DAIRY INDUSTRY



DAIRY IS AUSTRALIA'S THIRD LARGEST RURAL INDUSTRY

**3<sup>rd</sup>**

AVERAGE ANNUAL MILK PRODUCTION PER COW

**6,203**

litres

TOTAL ANNUAL MILK PRODUCTION

**8,554**

million litres

VALUE OF FARMGATE PRODUCTION

**\$4.9**

billion

ANNUAL PRODUCTION OF MAIN COMMODITIES

**408,246 tonnes**  
Cheese

**192,623 tonnes**  
Milk powders

**73,019 tonnes**  
Butter/AMF (CBE)

NUMBER OF DAIRY FARMS

**4,420**

AVERAGE HERD SIZE

**303**

cows

AUSTRALIAN DAIRY HERD

**1.34**

million cows

DAIRY INDUSTRY WORKFORCE

**34,700**

ANNUAL PER CAPITA CONSUMPTION

**15**  
kg cheese

**93**  
litres of milk

AUSTRALIAN MILK UTILISATION

**40%** Cheese

**3%** Whole milk powder

**30%** Drinking milk

**8%** Other

**19%** Skim milk powder or butter

MILK PRODUCTION EXPORTED

**36%**

MAJOR EXPORT MARKETS

**303,397 tonnes**  
Greater China

**80,869 tonnes**  
Singapore

**59,147 tonnes**  
Indonesia

**69,963 tonnes**  
Japan

**63,600 tonnes**  
Malaysia



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## FOREWORD

The dairy industry is the third largest rural industry in Australia and a key sector of the agricultural economy, generating close to A\$4.9 billion in farmgate value in the 2021/22 financial year.

In this Australian Dairy Industry In Focus 2022 report, you'll find a snapshot of Australia's role in the global dairy industry, based on statistics for the 2021/22 year.

As the national service body for the Australian dairy industry, Dairy Australia is funded by a combination of levies paid by dairy farmers (calculated on the fat and protein content of milk), and matching payments from the Commonwealth Government for eligible research and development (R&D) activities. Dairy Australia plays a key industry role in quantifying the flow of milk across Australia which is processed into a wide range of dairy products and then sold into diverse domestic and overseas markets.

This report is made possible through the significant contributions of dairy processors who continue to provide regular data.

### Key findings

In 2021/22, milk production was lower than previous seasons despite historically high farmgate milk prices. Whilst the vast majority of farmers reported they made an operating profit during this season, costs for inputs such as fertiliser, grain, fuel and chemicals surged. Weather conditions were favourable in some regions, however, above average rainfall caused waterlogging and repeated flooding in others. Additionally, the quality of homegrown and stored feed was impacted in these regions.

One of the most significant constraints to production growth was the lack of available labour across the country. This led to many farmers diversifying with or converting their businesses to beef and lamb, milking smaller herds, or even selling the farm. Some of these options were further encouraged by attractive beef and land prices. As a result, Australia's national milk pool fell 3.4%, ending the season at 8,554 million litres.

Despite accounting for less than 2% of the world's estimated milk production, Australia remains a significant exporter of dairy products. We currently rank fourth in terms of world dairy trade with a 5% share, behind New Zealand, the European Union and the United States.

In 2021/22, 36% of milk produced in Australia was exported, worth a total of A\$3.8 billion. Almost 90% of Australian exports were destined for Asia in 2021/22, with Greater China remaining one of our fastest growing export markets by volume. Measured by dollar value, our top five export markets were Greater China, Japan, Indonesia, Malaysia and Singapore.

Drinking milk is a staple item in almost all Australian households. Currently, per capita consumption of drinking milk is estimated at 93 litres. This has marginally declined over recent years, however, compared to other developed countries, Australia's consumption of drinking milk is high. This can be partly attributed to the expansion of the 'coffee culture' in Australia and growth in flavoured milk products.

Australians are returning to full cream white milk, with the proportion of sales of low-fat and skim milks declining. Following the initial COVID-19 outbreak, UHT milk grew in popularity. However, despite this increased demand, fresh milk remains the most popular variety amongst consumers.

### Further information

Most statistics referred to in this report are updated monthly and available at [dairyaustralia.com.au](http://dairyaustralia.com.au).

I trust you will find the Australian Dairy Industry In Focus continues to provide valuable information on one of this country's most important industries.



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**David Nation**  
Managing Director

# THE AUSTRALIAN DAIRY INDUSTRY

## An important rural industry

The dairy industry is a major rural industry in Australia. With a farmgate value of production close to A\$4.9 billion (as shown in Figure 1), the dairy industry ranks third behind the beef and wheat industries. Dairy is also a significant source of employment across regional areas, adding substantial value through further downstream processing. In 2021/22, approximately 34,700 people were directly employed on dairy farms and by dairy processing companies. Further employment connected to the industry was represented in associated transport, distribution and farm services, as well as research and development activities. This mostly occurs close to farming areas, thereby generating significant economic activity and employment in regional Australia.

Dairying is well established across the temperate and some subtropical regions of Australia. While the bulk of milk production occurs in south-eastern Australia, all states have dairy industries that supply fresh drinking milk to nearby cities and towns. Most states produce a range of high-quality consumer products, including fresh milks, custards, yoghurts and specialty cheeses.

The manufacture of dairy commodity products for export is mainly concentrated in south-eastern Australia and includes cheddar, mozzarella cheese, specialised milk powders and butterfats.

The dairy industry experienced strong growth throughout the 1990s, but this has stalled since the early 2000s. In addition to industry deregulation, this period coincided with the severe and prolonged 'millennium drought'. Increased levels of market and margin volatility undermined confidence in the outlook for many farmers, who seek reliable returns on which to build a longer-term future. This has resulted in ongoing consolidation within dairy farming and dairy processing.

In line with long-term trends, the number of dairy farms continued to fall in 2021/22, down 4% from the previous year. However, while farm numbers decreased, the average size of farms has grown with the number of large farms, and their share of milk production, increasing. Consolidation has also continued amongst processors, with manufacturing facilities facing continued rationalisation.

**Table 1** Australian dairy industry – long-term trends

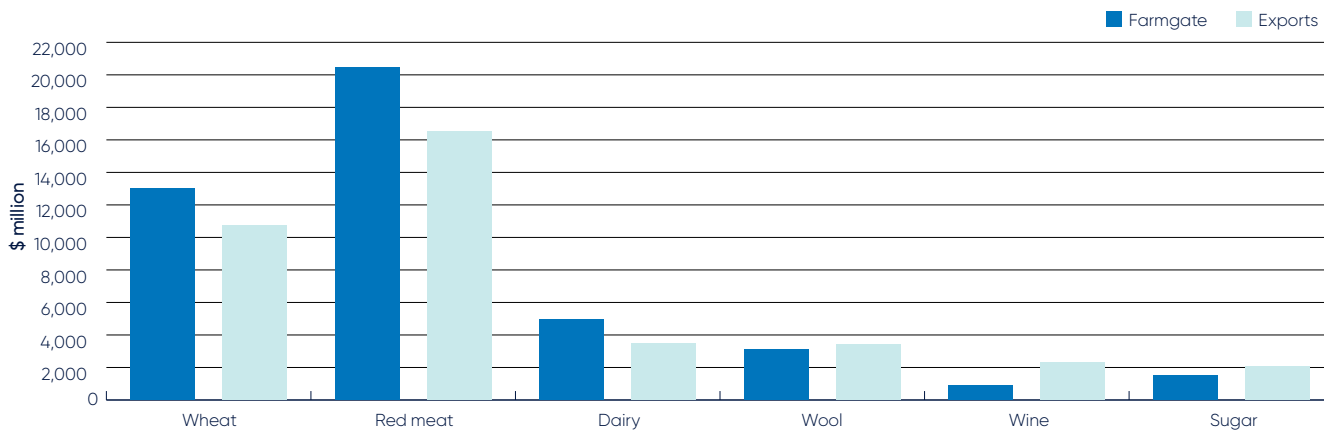
At June 30	1990	2000	CAGR % 1990s	2010	CAGR % 2000s	2020	CAGR % 2010s	2022 (p)	CAGR % 2020s
Milk production (ML)	6,262	10,847	5.6	9,023	-1.8	8,797	-0.3	8,554	-1.4
Dairy cows ('000)	1,654	2,171	2.8	1,596	-3.0	1,394	-1.3	1,340	-2.0
Farm numbers	15,396	12,896	-1.8	7,511	-5.3	5,055	-3.9	4,420	-6.5
Value of farm production*(\$m)	\$3,388	\$4,297	2.4	\$3,366	-2.4	\$4,829	3.7	\$4,872	0.4
Per capita consumption (milk equivalent)	245	274	1.1	301	0.9	319	0.6	316	-0.6
Export value*(\$m)	\$613	\$3,918	20.4	\$2,391	-4.8	\$3,378	3.5	\$3,784	5.8
Export share of production (%)	31	54		45		29		36	

\*Expressed in 2021/22 dollars.

CAGR = Compound Annual Growth Rate

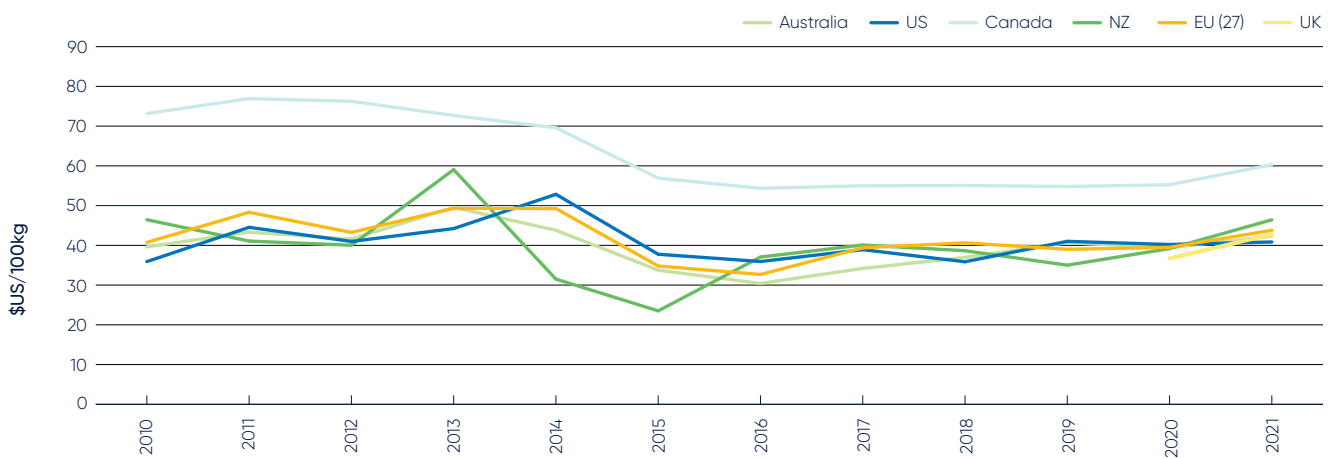
Source: ABS, ADC, DA, state authorities

**Figure 1** Farmgate value vs export sales value in 2021/22



Source: ABARES Australian Commodity Qly Report (forecast)

**Figure 2** International farmgate milk prices (USD/100kg)



Source: Dairy Australia

## A world competitive industry

In 2000/01, the dairy industry completed deregulation. Since then, Australian dairy farmers have operated in an open market with minimal government intervention. As a result, Australia's domestic dairy market is subject to international pressures, either through direct competition for export sales or competition from imports. International markets and events also have a major influence on Australian farmgate milk prices. While most milk produced is consumed domestically, Australia is also a major exporter and importer (predominantly from New Zealand) of dairy products.

Strong competition for milk amongst processors led to another season of historically high farmgate milk prices in 2021/22, with Australian dairy farmers receiving an average of US\$42 per 100kg of milk (A\$7.52/kg MS). This price is above the amount paid to farmers in the United States, but below prices paid in New Zealand, the European Union and the United Kingdom. These indices represent milk receipts only and do not include other components of total farm income, such as decoupled government support, livestock sales or other activities.

As shown in Figure 2, the price received by farmers around the world has continued to converge. Farmgate prices now more closely reflect global dairy commodity price trends due to the removal of many market-distorting industry policies, progressive deregulation and increased global trade. While broadly tracking other producers, Canada's dairy farmers operate in a highly regulated environment which determines prices, production and imports according to a scheme known as Supply Management.

Historically, Australia has been considered a low-cost producer of dairy products, however in recent years, farm cost structures have increased in response to the need to adapt to drier conditions. This has manifested as higher expenditure on supplementary feed and temporary water allocations, particularly in northern Victoria and southern New South Wales. Since deregulation, local milk production has declined while the size of the domestic market has increased due to population growth. As a result, the share of milk that is exported, and Australia's share of international dairy trade, have both contracted.



## FARM FACTS

Dairy farms are located in all states of Australia. The majority of milk production occurs in south-eastern Australia, where the climate and natural resources are generally favourable for dairying. This allows the industry to be predominantly pasture-based, resulting in cost-efficient systems producing high-quality milk. In a year of 'normal' seasonal conditions, approximately 60%–65% of cattle feed requirements come from grazing.

Most farms are located in coastal areas where pasture growth is generally reliant on rainfall. There are also several inland dairying areas which use irrigation schemes, most notably in northern Victoria and the New South Wales Riverina. Dairy farm systems also vary across Australia. While many farms use pasture as the herd's main feed source, the use of supplementary feed is widespread across Australia. In New South Wales and Queensland, there is a greater incidence of more intensive feeding practices observed, with high rates of supplementary feeding.

Over the past decade, the use of supplementary feeding has increased significantly as farmers adapt to drier conditions, and/or seek to flatten their farm's seasonal milk production profile. Supplementary feed can be purchased or homegrown and includes grain, hay, silage and in limited situations, feed byproducts. Such changes in production systems can introduce additional input

costs, price risk and management complexity, and can lead to greater variability of farm returns.

The 2022 Dairy Australia National Dairy Farmer Survey showed nearly all dairy farmers engaged in some level of supplementary feeding. Feeding moderate to high levels of concentrates is practised across all regions, with feed rates remaining relatively consistent this season. In line with the previous year, the national average feeding rate in 2021/22 was 1.7 tonnes per cow per year.

*See Appendix 3 for detailed tables on feed prices by state dairying regions.*

Since 1979/80, the number of dairy farms in Australia has been steadily declining from 21,989 farms to 4,420 in 2021/22 (refer to Table 2). The rate of decrease in farm numbers has historically followed changes in farmgate milk prices from season to season. While strong prices can slow the rate of attrition, periods of weaker farmgate prices and/or adverse seasonal conditions can accelerate farm exits. Land prices and the performance of other agricultural industries can also encourage farm exits, regardless of farmgate milk prices.

Falling farm numbers reflect a trend in agriculture around the world. Changing business practices have encouraged a shift to larger, more intensive operating systems with greater economies of scale. However, while

**Table 2** Number of registered dairy farms

	NSW	Vic	Qld	SA	WA	Tas	Aust
2006/07	924	5,346	734	354	222	475	<b>8,055</b>
2007/08	886	5,422	664	332	186	463	<b>7,953</b>
2008/09	860	5,462	648	320	183	451	<b>7,924</b>
2009/10	820	5,159	621	306	165	440	<b>7,511</b>
2010/11	807	4,588	595	286	170	437	<b>6,883</b>
2011/12	778	4,556	555	275	162	444	<b>6,770</b>
2012/13	731	4,284	518	268	160	437	<b>6,398</b>
2013/14	710	4,268	475	264	156	435	<b>6,308</b>
2014/15	704	4,127	448	252	157	440	<b>6,128</b>
2015/16	690	4,141	421	246	151	430	<b>6,079</b>
2016/17	661	3,889	406	240	148	427	<b>5,771</b>
2017/18	626	3,881	393	228	159	412	<b>5,699</b>
2018/19	575	3,516	356	212	150	404	<b>5,213</b>
2019/20	534	3,462	327	206	135	391	<b>5,055</b>
2020/21	523	3,080	307	198	132	378	<b>4,618</b>
2021/22 (p)	494	2,984	280	181	116	365	<b>4,420</b>

Source: State milk authorities and Dairy Australia



the number of farms across Australia has decreased, the average herd size continues to grow. The average herd size in 1985 was 93 cows; this has grown to 303 cows in 2021/22. There is also an emerging trend of large farm operations milking more than 700 cows.

Despite the average herd size increasing over time, Australia's national herd has been declining. Increased volatility in farm cash incomes has seen many farmers participate in the export heifer trade or selling dairy cows for slaughter as an additional source of farm income. In 2021/22, high beef values, strong land prices and labour challenges encouraged some farmers to destock or diversify their businesses, while others chose to exit the dairy industry.

See Appendix 8 for detailed tables on heifer exports.

Consequently, a smaller national herd limits total milk production, relying on increased per cow yields to maintain production volumes. Improved herd genetics, as well as advances in pasture management and supplementary feeding regimes, have increased average annual per cow yields. Over the past four decades, yields have more than doubled from 2,900 litres in 1980 to 6,203 litres in 2021/22. The average yield figure varies by state and with seasonal conditions.

In Australia, the dominant dairy breed is the Holstein, accounting for around two-thirds of all dairy cows. Other important breeds include the Jersey, Holstein/Jersey cross, Brown Swiss, Ayrshire and local breeds, the Australian Red and the Illawarra. Australian farmers have access to some of the best genetic material in the world with artificial insemination the most commonly used breeding practice on farm. Herd recording is also widely used with around half of all dairy farms regularly recording herd performance.

The genetic evaluation of dairy cattle was previously conducted by the Australian Dairy Herd Improvement Service (ADHIS). ADHIS has now been superseded by DataGene, an independent, industry-owned, not-for-profit organisation that focuses on pre-competitive herd improvement. DataGene is involved in several aspects of herd improvement including genetics, herd testing, herd recording, data systems, herd test standards and evaluation. DataGene goes beyond the ADHIS in seeking to drive genetic gain and herd improvement by combining research, development and extension within one organisation.

**Table 3** Number of dairy cows ('000 head)

	NSW	Vic	Qld	SA	WA	Tas	Aust
2006/07	210	1,150	121	114	60	140	<b>1,796</b>
2007/08	195	1,055	100	103	54	134	<b>1,641</b>
2008/09	201	1,061	107	106	52	149	<b>1,676</b>
2009/10	203	1,014	98	92	55	134	<b>1,596</b>
2010/11	195	1,010	97	90	59	138	<b>1,589</b>
2011/12	204	1,115	101	76	57	148	<b>1,700</b>
2012/13	210	1,096	96	77	62	148	<b>1,688</b>
2013/14	181	1,093	98	73	66	137	<b>1,647</b>
2014/15	177	1,147	91	68	59	147	<b>1,689</b>
2015/16	182	1,005	89	78	60	149	<b>1,562</b>
2016/17	164	975	86	71	64	160	<b>1,520</b>
2017/18	166	1,023	85	67	56	149	<b>1,547</b>
2018/19	149	898	78	72	56	175	<b>1,428</b>
2019/20	144	883	64	70	51	182	<b>1,394</b>
2020/21 (r)	159	859	69	69	53	179	<b>1,388</b>
2021/22 (e)	148	840	64	64	50	174	<b>1,340</b>

\*From 2018/19, Tas data sourced from TDIA; From 2018/19 to 2020/21, SA data source from Dairysafe SA  
Source: ABS, state milk authorities, and Dairy Australia

## Farmgate milk prices

The price paid to Australian dairy farmers is based on the milkfat and protein content of the milk produced on farm. Each component is valued differently, with the protein content of milk typically worth more than fat. Farmgate milk prices vary between processors and payment structures from dairy companies to individual farmers can differ significantly. Milk supply agreements can provide a range of incentives for milk quality, productivity or volume levels and for year-round milk supply. There may also be volume growth incentives in place to encourage milk supply to processing plants (to improve operating efficiencies), or loyalty incentives to guarantee supply for long periods. These all affect the final farmgate price received.

Unlike many countries around the world, the Australian government has no legislative control over the farmgate milk price. Since deregulation in 2000/01, all prices within the industry are set by market forces.

The returns received by an individual company are affected by various factors, including market and product mix, marketing strategies, utilisation and efficiencies in factory processing capacity, and exchange rate hedging policies. Competition among processors also influences farmgate milk prices from season to season.

Implemented in 2020, the Dairy Code of Conduct stipulates that prior to the start of each season, all dairy processing companies must publicly release a minimum opening milk price by 2pm (AEST) on 1 June. In a feature that is unique to the Australian dairy industry, farmgate milk prices cannot be reduced below the announced minimum during the season.

Australian dairy companies operate in an open and internationally competitive market. This includes free trade under the Closer Economic Relations (CER) agreement with New Zealand, a major global dairy producer. As a result, the returns local processors can

**Table 4** Average annual milk production per cow (litres)

	NSW	Vic	Qld	SA	WA	Tas	Aust
1979/80	2,870	3,012	1,984	3,163	3,105	2,958	<b>2,848</b>
1989/90	3,602	3,920	3,122	3,934	4,205	3,791	<b>3,781</b>
1999/00	4,827	4,989	4,349	6,790	6,338	4,381	<b>4,996</b>
2005/06	5,039	5,221	4,076	5,791	5,369	4,581	<b>5,108</b>
2006/07	5,151	5,261	4,033	6,417	5,235	4,696	<b>5,182</b>
2007/08	5,031	5,393	4,163	5,799	5,907	4,961	<b>5,275</b>
2008/09	5,420	5,807	5,032	6,053	6,355	5,140	<b>5,691</b>
2009/10	5,329	5,518	5,052	5,907	6,641	4,640	<b>5,448</b>
2010/11	5,409	5,860	4,980	6,257	6,637	5,379	<b>5,758</b>
2011/12	5,760	6,027	5,008	6,646	5,967	5,636	<b>5,930</b>
2012/13	5,534	5,473	4,667	7,099	5,996	5,166	<b>5,498</b>
2013/14	5,542	5,639	4,640	6,896	5,443	5,578	<b>5,615</b>
2014/15	6,572	5,795	4,388	7,411	5,752	6,400	<b>5,917</b>
2015/16	6,719	5,621	4,644	7,634	6,669	5,981	<b>5,841</b>
2016/17	6,434	5,749	4,823	6,520	6,342	5,511	<b>5,813</b>
2017/18	6,949	6,058	4,670	7,195	6,199	5,805	<b>6,108</b>
2018/19	6,757	5,622	4,325	6,937	6,674	5,203	<b>5,723</b>
2019/20	7,146	6,289	4,505	7,007	6,661	5,208	<b>6,201</b>
2020/21 (r)	7,274	6,446	4,734	7,239	7,052	5,369	<b>6,376</b>
2021/22(e)	6,864	6,345	4,414	7,239	6,519	5,112	<b>6,203</b>

Source: Dairy manufacturers, ABS, state milk authorities and Dairy Australia

achieve are influenced by global dairy commodity prices, even if they are not directly participating in export trade. World dairy prices directly affect returns for the 36% of local milk exported as butter, cheese and milk powders, which must compete with other countries' exports. Global prices also influence the additional 36% of production that goes into locally consumed manufactured dairy products, which must be competitively priced against imports. As a result, over 70% of milk produced in Australia is exposed to global dairy prices, while the remainder is consumed domestically as liquid drinking milk.

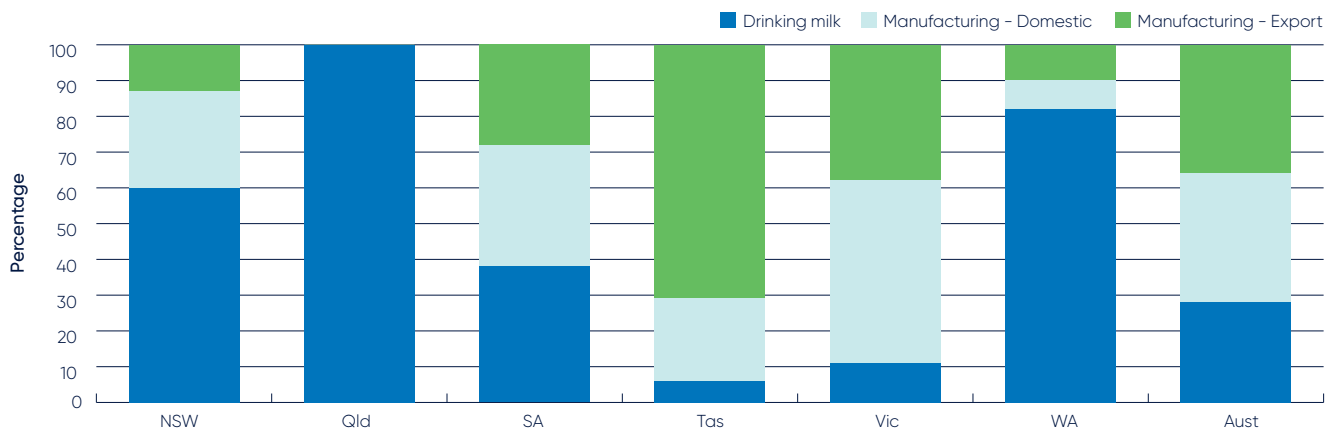
The strength of the Australian dollar on foreign exchange markets also affects farmgate milk prices. Dairy companies benefit from a 'weaker' Australian dollar, which makes exports more competitive and imports relatively more expensive, all other things being equal.

The farmgate milk price received by farmers can therefore vary significantly around Australia, depending on how milk is used in the marketplace.

As shown in Figure 3, milk for processing (export and domestic use) accounts for most of the milk produced in south-east Australia. Hence, the average farmgate milk price received in these regions tends to follow global markets and export returns. Most farmers in exporting regions receive a 'blended' price that incorporates returns from milk for manufacturing and the proportionately smaller local fresh drinking milk market. Conversely, in northern and western dairy regions, fresh drinking milk makes up a larger proportion of the production mix. Farmers in these regions will receive farmgate milk prices tied to the drinking milk market, where a stable year-round supply is more important.

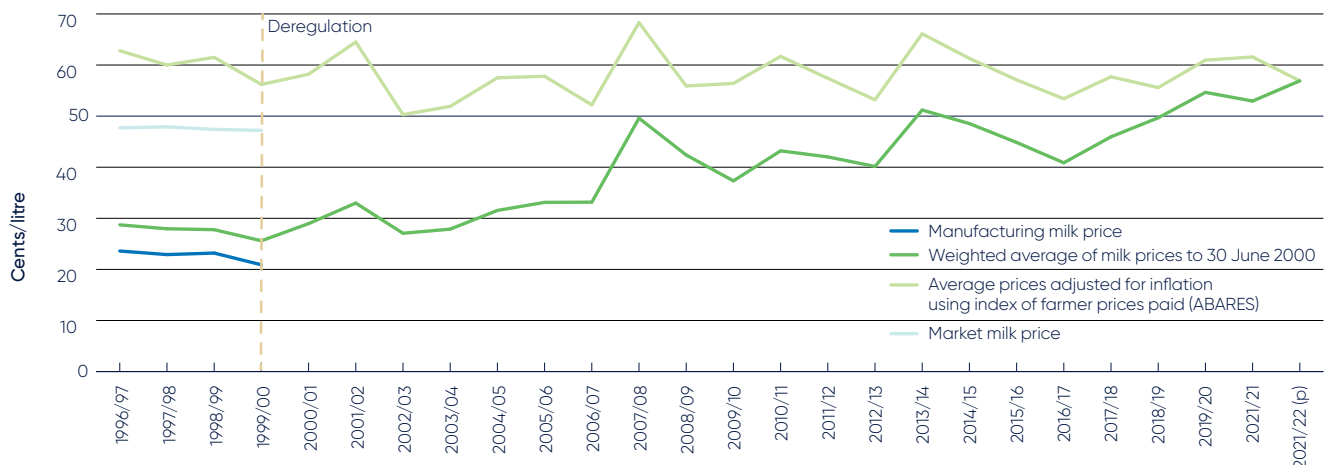
Dairy products produced in some states are often exported out of another. For instance, some product manufactured in south-east South Australia or Tasmania, is regularly exported from the port of Melbourne. As such, the percentage of milk exported from each state can fluctuate based on changes in shipping arrangements.

**Figure 3** Use of Australian milk by state in 2021/22



Source: Dairy Australia

**Figure 4** Factory paid milk prices



Index calculated using 2019/20 base  
Source: Dairy manufacturers and ABARES

**Table 5** Indicative factory paid milk prices by state

		2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
NSW	¢/litre	49.0	50.5	54.7	62.0	62.7	64.1
	\$/kg milk solids	6.81	6.99	7.67	8.55	8.58	8.78
Vic	¢/litre	38.0	44.2	48.2	53.6	50.8	55.2
	\$/kg milk solids	5.04	5.87	6.40	7.01	6.62	7.26
Qld	¢/litre	60.0	57.7	61.0	68.0	66.8	70.0
	\$/kg milk solids	8.22	7.84	8.31	9.31	9.06	9.51
SA	¢/litre	37.1	42.9	47.2	53.6	52.9	53.7
	\$/kg milk solids	5.19	6.06	6.62	7.40	7.32	7.48
WA	¢/litre	50.6	49.9	50.2	52.3	53.8	55.1
	\$/kg milk solids	7.06	6.97	7.05	7.27	7.44	7.67
Tas	¢/litre	39.0	47.0	50.3	53.3	51.0	57.0
	\$/kg milk solids	4.97	6.01	6.37	6.70	6.41	7.17
<b>Aust</b>	<b>¢/litre</b>	<b>40.9</b>	<b>46.0</b>	<b>49.7</b>	<b>54.7</b>	<b>52.3</b>	<b>56.9</b>
	<b>\$/kg milk solids</b>	<b>5.46</b>	<b>6.14</b>	<b>6.64</b>	<b>7.19</b>	<b>6.95</b>	<b>7.52</b>

Source: Dairy manufacturers

## Farm business performance

The Dairy Farm Monitor Project (DFMP) and the Queensland Dairy Accounting Scheme (QDAS) records financial and production data of participant dairy farms in all major dairying regions across Australia. The data allows for analysis of dairy farm productivity and profitability to support government and industry policy and service delivery. It also facilitates comparison and benchmarking by farmers and farm business consultants to improve farm business performance.

Participants are selected for the project in order to represent a distribution of farm sizes, herd sizes and geographical locations within each region. The results presented do not represent population averages, as the participant farms are not selected using random population sampling and may not be representative of the whole dairy industry.

Now in its 15th year, DFMP began as a collaboration between Agriculture Victoria and Dairy Australia, gathering data from 75 model farms spread evenly across Victoria's three dairying regions in Gippsland, northern and south-west Victoria.

This program has since been expanded across all major dairying regions in Australia, in collaboration with local state agriculture departments and universities. Annual reports can be found at [dairyaustralia.com.au/dairyfarmmonitor](http://dairyaustralia.com.au/dairyfarmmonitor).

QDAS has been run for over 20 years by the Queensland Department of Agriculture and Fisheries with support from Dairy Australia.

Data collected through the DFMP and QDAS is housed in DairyBase and provides high-quality data to generate accurate industry benchmarks. DairyBase is a web-based tool developed by Dairy Australia, which enables farmers and their advisors to assess farm business performance in a consistent, industry agreed methodology. It contains additional verified and validated datasets from farm business consultants and service providers, making it the largest and most detailed single repository of Australian dairy farm data. DairyBase is designed to facilitate comparative analysis and measurement of business performance over time and is free to join.

**Table 6** Average farm working expenses by state (\$/kg MS)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
NSW	5.72	5.75	6.25	7.04	7.69	6.79	7.41
Vic	4.70	4.15	4.51	5.39	5.34	4.94	5.65
Qld	6.27	6.18	6.63	7.49	8.33	7.45	7.95
SA	5.31	5.09	4.89	5.32	5.93	5.41	6.09
WA	5.46	5.33	5.73	6.14	6.35	6.21	7.05
Tas	4.70	4.19	4.36	4.65	4.83	4.92	n.a

Source: Dairy Farm Monitor Project and Queensland Dairy Accounting Scheme

**Table 7** Average Victorian regional farm working expenses (\$/kg MS)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
Eastern	4.33	3.74	4.24	5.03	4.74	4.47	5.33
Northern	5.09	4.73	4.74	6.12	6.02	5.53	5.79
Western	4.67	3.98	4.56	5.04	5.12	4.69	5.80

Source: Dairy Farm Monitor Project

**Table 8** Average farm operating cash surplus by state (\$/kg MS)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
NSW	2.34	2.01	1.66	1.60	2.13	3.10	2.90
Vic	1.34	1.58	1.76	1.30	2.50	2.61	2.71
Qld	2.36	2.59	2.05	1.79	2.01	3.15	3.34
SA	1.49	1.50	1.95	1.84	2.45	3.07	2.67
WA	2.76	2.51	2.28	2.13	2.33	2.85	2.96
Tas	1.40	1.54	1.99	1.93	2.92	2.56	n.a

Source: Dairy Farm Monitor Project and Queensland Dairy Accounting Scheme

**Table 9** Average Victorian regional farm operating cash surplus (\$/kg MS)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
Eastern	1.49	1.72	1.91	1.42	2.71	2.74	2.61
Northern	1.06	1.11	1.51	0.73	1.95	2.16	2.76
Western	1.46	1.89	1.87	1.76	2.96	3.01	2.73

Source: Dairy Farm Monitor Project

In 2021/22, seasonal conditions were mixed across Australian dairy regions. The impacts of La Niña were felt in regions where the ability to conserve high quality feed was restricted by frequent rain events. Late autumn breaks across many areas resulted in lower grazed feed levels, increasing the need for purchased concentrates and fodder. Higher input prices also had a noticeable impact on fertiliser rates and likely on total homegrown feed levels across many farms.

## **New South Wales (NSW)**

All dairying regions in NSW received above average rainfall with the far north coast recording the highest on record. In northern parts of the state, a number of dairying areas were impacted by catastrophic flooding (resulting in loss of pastures, laneways, animals and conserved fodder), and the associated animal health issues. Many farms were unable to conserve silage or sow autumn pastures, resulting in a significant feed shortage. This led to a large quantity of fodder purchased and destocking in some cases. However, some northern parts experienced relatively favourable conditions throughout the year, including the Upper Hunter and inland regions, despite previous flooding. During late spring, large quantities of fodder was conserved across these areas and in parts of the mid-coast.

Coastal regions in southern parts were also exposed to extremely wet conditions from late spring through to the end of autumn. This added complexity to autumn sowing and silage-making, however several farmers were able to conserve some tonnes of silage in late spring. The central inland dairying areas experienced flooding during this time, which also impacted the harvest of cereal and canola crops in the region. However, periods of milder conditions presented the region with a relatively favourable year.

## **Tasmania**

Tasmanian dairy farmers experienced a mixed season, with strong rainfall in the north-east but lower rainfall across other regions, particularly in the north-west and King Island. Many dairying areas in Tasmania experienced relatively favourable spring conditions allowing farms to conserve feed. However, the prices and availability of inputs such as fertiliser, chemicals and fuel, impacted the ability to maximise homegrown feed levels. On average, Tasmania had a drier and hotter than average summer with some areas remaining dry well into April, while others experienced a wetter than average March, supporting the autumn break.

## **Queensland**

Across Queensland, a number of farms were impacted by floods, some on multiple occasions. For those farms not directly impacted, ongoing wet conditions resulted in lost crops, missed plantings and herd health issues. Additionally, input costs were high throughout the season, particularly for feed and fertiliser. A lack of available labour also proved challenging for farmers this season.

## **Western Australia**

In Western Australia, the season began favourably with average rainfall in winter and spring across most regions. Fodder crop quality was reportedly better than the previous season despite lower yields, with less waterlogging and unimpeded access to paddocks. Fertiliser prices remained high with some farmers looking to spread less, particularly with carry-over feed from last season. Access to labour and wage price pressure remained a major challenge to farmers.

## **Victoria**

In general, Victoria experienced wetter than average seasonal conditions in 2021/22, with many farms receiving well above average rainfall. A large storm during the first half of the season provided challenges for harvesting pasture either by direct grazing or for conservation in south-west Victoria and Gippsland. This resulted in less homegrown feed available with many farms supplementing their herds with additional concentrates and fodder (at relatively high prices) to maintain milk production. The quality of feed grown was also impacted by wet weather conditions. Fertiliser costs were high, resulting in some farmers applying less than usual. In northern Victoria, favourable seasonal conditions lowered the use of purchased hay and silage, with a slightly higher proportion of the diet coming from directly grazed feed.

## **South Australia**

In South Australia, the majority of farms received below average rainfall for the season. In spring however, the La Niña event saw increased rainfall over many areas, making it difficult to conserve feed and maximise quality. Late autumn breaks in some areas reduced pasture growth and as a result, increased levels of supplementary feed were purchased. Higher input costs also impacted the profitability of farmers, while lower fertiliser applications (to save on costs) saw less homegrown feed produced.

For a longer national time series, the annual ABARES Farm Survey estimates the financial performance of Australian dairy farms. It should be noted there are several differences in methodology and as a result, the series may not be directly comparable with those shown in the Dairy Farm Monitor Project.

**Table 10** Average earnings before interest and tax by state (\$/kg MS)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
NSW	1.01	0.82	0.33	0.38	1.05	2.07	1.71
Vic	0.10	0.69	0.66	0.25	1.68	1.86	1.72
Qld	0.96	1.20	0.55	(0.17)	(0.08)	1.39	1.10
SA	0.74	0.70	1.17	1.09	1.84	2.37	1.44
WA	1.97	1.92	1.31	1.16	1.44	2.24	1.85
Tas	0.90	0.94	1.32	1.44	2.50	2.21	n.a

Source: Dairy Farm Monitor Project and Queensland Dairy Accounting Scheme

**Table 11** Average Victorian regional earnings before interest and tax (\$/kg MS)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
Eastern	0.26	0.65	0.84	0.51	2.07	1.78	1.43
Northern	-0.07	0.37	0.67	(0.45)	1.22	1.76	1.98
Western	0.11	1.06	0.48	0.71	1.83	2.04	1.71

Source: Dairy Farm Monitor Project

**Table 12** Average return on total assets by state (%)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
NSW	2.7	2.1	1.2	0.7	2.7	4.9	3.5
Vic	0.3	2.3	2.5	0.7	5.4	5.7	4.6
Qld	2.8	3.6	1.8	0.0	0.3	3.6	2.8
SA	2.9	2.6	4.4	3.5	5.8	6.7	4.1
WA	6.4	6.5	3.8	3.2	3.9	5.5	4.2
Tas	3.8	3.6	5.1	5.2	8.7	7.1	n.a

Source: Dairy Farm Monitor Project and Queensland Dairy Accounting Scheme

**Table 13** Average Victorian regional return on total assets (%)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
Eastern	1.0	2.1	3.0	1.7	6.6	5.4	4.2
Northern	-0.5	1.0	2.6	-1.7	4.1	6.0	5.6
Western	0.3	3.9	1.9	2.3	5.8	5.5	3.9

Source: Dairy Farm Monitor Project

## MILK PRODUCTION

While farm numbers in Australia have steadily decreased, the average farm size has grown. This led to an increase in cow numbers and improved cow yields, until the major widespread 'millennium drought' in 2002/03. The next decade was a period of consolidation for the industry, with falling cow numbers and dry seasonal conditions constraining production. This was especially the case in northern Victoria, where reduced availability of irrigation water saw prices rise significantly.

In recent years, volatility in farmgate milk prices and farm incomes have impacted farmer confidence and the industry's ability to grow. The disruption caused by the late season step-downs in 2015/16, lower average milk prices and challenging seasonal conditions in the subsequent years, shifted the focus of many farmers. Their priority transitioned from longer-term investments and increasing milk production, to cost control, refinancing and business consolidation. In many cases, farmers culled extensively during these years, taking advantage of higher beef prices to maintain cashflow.

Despite historically high farmgate milk prices, 2021/22 milk production was lower than previous season's volumes. Whilst the vast majority of farmers reported they made an operating profit during this season, costs for inputs such as fertiliser, grain, fuel and chemicals surged. Weather conditions were favourable in some regions, however, above average rainfall caused waterlogging and repeated flooding in others. The quality of homegrown and stored feed was also impacted in these regions.

One of the most significant constraints to production growth was the lack of available labour across the country. This led to many farmers: diversifying or converting their businesses to beef and lamb, milking smaller herds, or selling their farms. Some of these options were further encouraged by attractive beef and land prices. As a result, Australia's national milk pool fell 3.4%, ending the season at 8,554 million litres.

As Figure 5 indicates, the underlying trend has continued towards fewer farms, larger herds and increasing levels of milk production per farm.

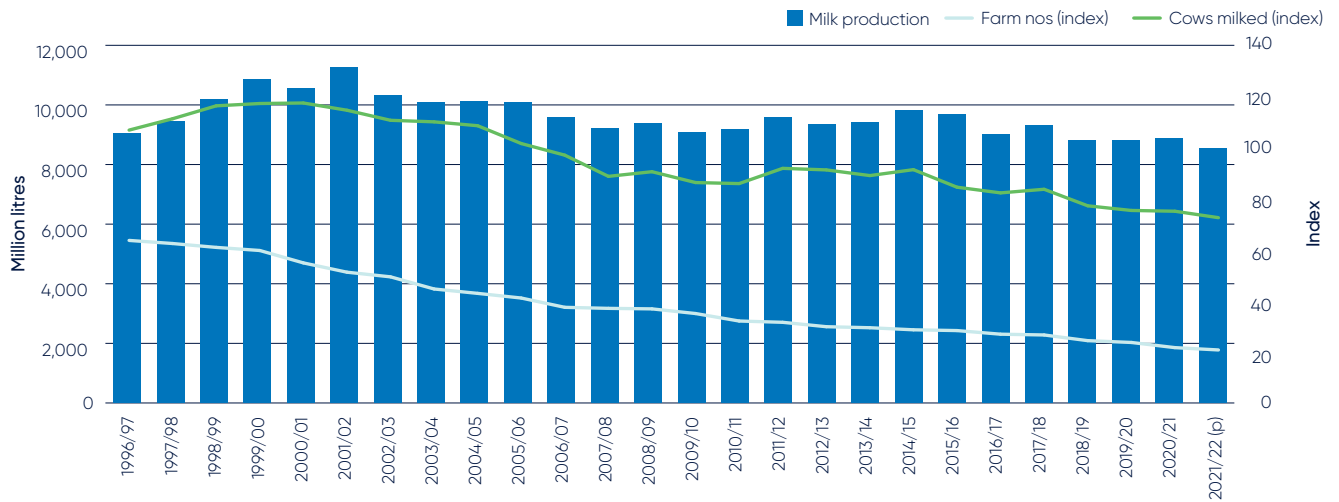
**Table 14** Milk production by state (million litres)

	NSW	Vic	Qld	SA	WA	Tas	Aust
2006/07	1,104	6,297	537	655	349	641	<b>9,583</b>
2007/08	1,048	6,102	486	606	319	661	<b>9,223</b>
2008/09	1,064	6,135	513	628	340	709	<b>9,388</b>
2009/10	1,099	5,813	530	605	359	677	<b>9,084</b>
2010/11	1,087	5,936	487	572	372	726	<b>9,180</b>
2011/12	1,136	6,246	491	575	349	792	<b>9,589</b>
2012/13	1,137	6,076	465	542	349	765	<b>9,334</b>
2013/14	1,124	6,174	446	525	342	810	<b>9,421</b>
2014/15	1,184	6,411	422	530	367	891	<b>9,805</b>
2015/16	1,198	6,249	421	538	392	883	<b>9,681</b>
2016/17	1,141	5,732	425	497	385	836	<b>9,016</b>
2017/18	1,144	5,979	399	505	385	913	<b>9,325</b>
2018/19	1,094	5,576	359	497	374	910	<b>8,810</b>
2019/20	1,054	5,625	315	489	364	950	<b>8,797</b>
2020/21	1,075	5,651	309	500	362	961	<b>8,858</b>
2021/22 (p)	1,072	5,465	299	490	341	887	<b>8,554</b>

Source: Dairy manufacturers

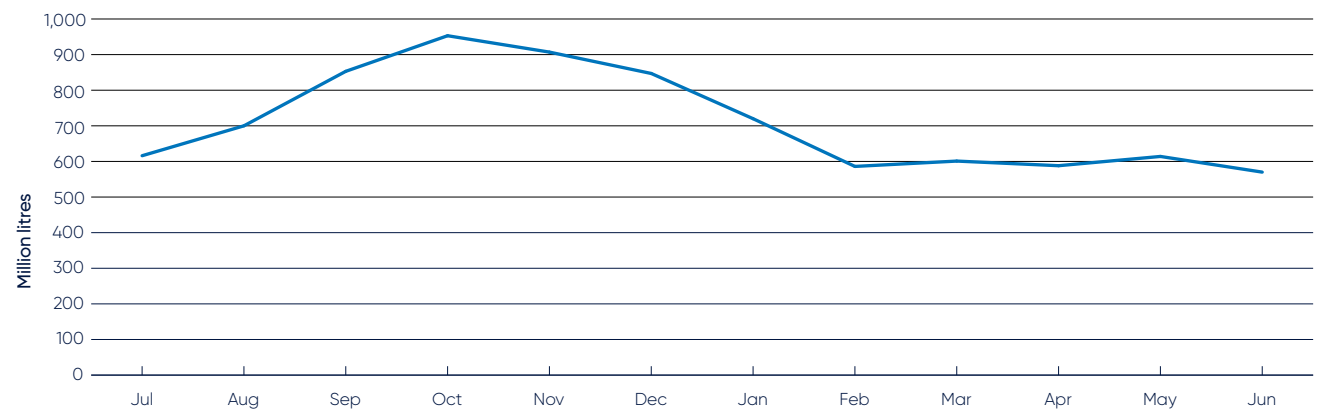


**Figure 5** Australian milk production vs indices of farms and cows milked



Source: Dairy manufacturers, ABS, state authorities and Dairy Australia

**Figure 6** Seasonality of milk production in Australia in 2021/22



Source: Dairy manufacturers



As shown in Table 14, dairy farming is concentrated in the temperate zone of Australia. Australian milk production remains strongly seasonal in key south-eastern dairying regions, reflecting the predominantly pasture-based nature of the industry. Production peaks in October, tapers off until late summer, and then flattens out into the cooler winter months (as illustrated in Figure 6). The production of long shelf-life manufactured products in these parts of the country has enabled maximum milk utilisation within the seasonal cycle. However, the seasonality of milk output in Queensland, New South Wales and Western Australia is much less pronounced, due to a greater focus on drinking milk and fresh products. Farmers in these states manage calving and feed systems to ensure flatter, year-round milk production.

*See Appendix 4 for more details on the seasonality of milk production by state dairying regions.*

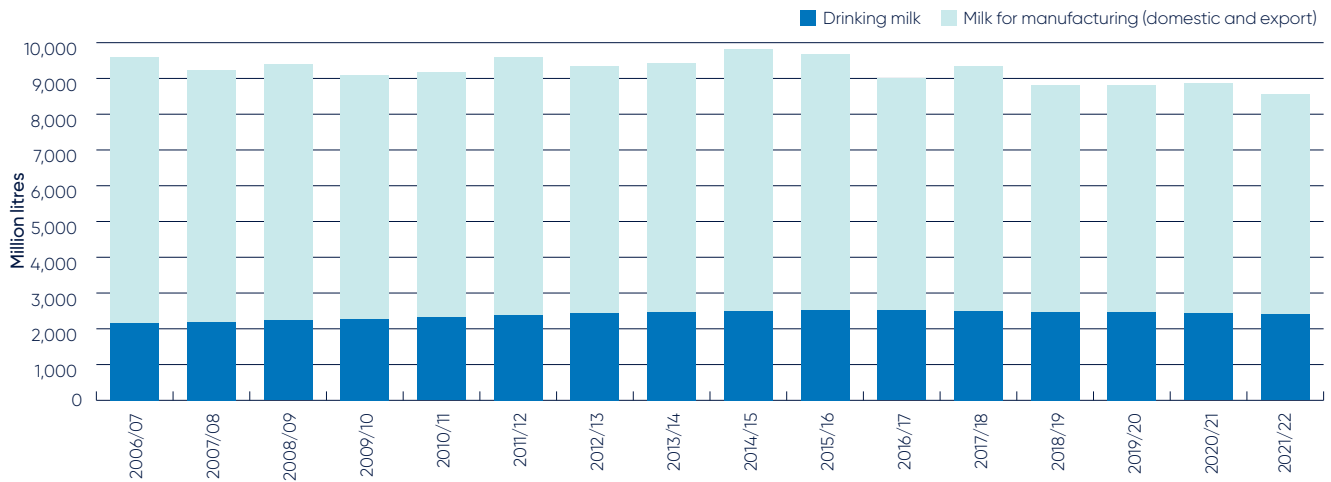
Solids such as milkfat, protein, lactose and minerals are the core constituents of cows' milk, with water comprising about 87% of the volume. Companies base their farmgate milk prices on the milkfat and protein components of the milk.

Milk composition can vary between regions and seasons, as shown in Table 15. This can be due to several factors, including cow breed, age, nutrition and feed quality.

With ongoing population growth since 2001/02, the amount of milk destined for domestic consumption, as either drinking milk or manufactured products (e.g. cheese and butter), has increased. In 2021/22, 28% of Australia's production was used for domestic drinking milk, compared to 18% in 2001/02. About 36% of milk produced in 2021/22 was used for domestically consumed manufactured products, up from 26% in 2001/02.

Conversely, the proportion of milk available for export, as manufactured product, has declined from 56% in 2001/02 to around 36% in 2021/22. Over recent years, Australia's imports of dairy products for local consumption have increased. This has enabled the Australian dairy industry to continue to export a significant share of its milk production, despite having a larger domestic market and lower milk production.

**Figure 7** Drinking and manufacturing milk production



Source: Dairy manufacturers

**Table 15** Average fat/protein composition by state (%)

	NSW	Vic	Qld	SA	WA	Tas	Aust
<b>Milkfat</b>							
2010/11	3.92	4.15	4.00	3.82	3.96	4.28	4.10
2011/12	3.90	4.08	4.00	3.85	3.86	4.25	4.05
2012/13	3.92	4.12	4.02	3.81	3.87	4.32	4.08
2013/14	3.91	4.10	3.98	3.80	3.88	4.30	4.07
2014/15	3.93	4.15	4.01	3.77	3.89	4.35	4.11
2015/16	3.92	4.12	4.00	3.77	3.92	4.30	4.08
2016/17	3.91	4.13	4.00	3.84	3.92	4.34	4.10
2017/18	3.93	4.12	4.05	3.80	3.91	4.31	4.09
2018/19	3.89	4.12	4.05	3.84	3.90	4.39	4.10
2019/20	3.95	4.18	4.01	3.90	3.91	4.37	4.15
2020/21 (r)	3.99	4.24	4.03	3.88	3.92	4.41	4.19
2021/22 (p)	4.00	4.21	4.04	3.85	3.96	4.40	4.17
<b>Protein</b>							
2010/11	3.26	3.38	3.31	3.28	3.23	3.44	3.35
2011/12	3.28	3.36	3.31	3.27	3.16	3.44	3.34
2012/13	3.27	3.36	3.29	3.26	3.20	3.47	3.35
2013/14	3.28	3.39	3.29	3.27	3.18	3.47	3.37
2014/15	3.29	3.40	3.32	3.29	3.22	3.49	3.38
2015/16	3.29	3.40	3.32	3.28	3.23	3.48	3.38
2016/17	3.28	3.41	3.30	3.31	3.24	3.50	3.39
2017/18	3.30	3.41	3.31	3.28	3.24	3.51	3.39
2018/19	3.25	3.40	3.29	3.29	3.22	3.50	3.38
2019/20	3.30	3.47	3.30	3.35	3.28	3.58	3.45
2020/21 (r)	3.31	3.44	3.35	3.34	3.31	3.55	3.43
2021/22 (p)	3.29	3.40	3.32	3.33	3.23	3.55	3.40

Source: Dairy manufacturers

# DAIRY MANUFACTURING

Farmer-owned cooperatives no longer dominate the Australian industry, with a wide range of companies now operating including national and multinational companies, both privately owned and publicly listed. Some large multinational companies have been established within the industry for many years, including Fonterra (New Zealand), Lactalis (France) and Saputo (Canada).

Over the past two decades, Australia's contracting milk pool has reduced the need for local dairy companies to invest in processing capacity, however, several new investments have been made. The age of existing plants and the need to rationalise production have seen some processors close plants to reduce costs. Others have chosen to increase capacity at remaining sites or upgrade plants to produce higher specification products.

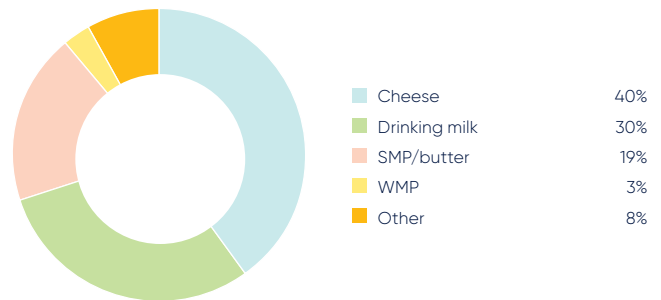
During 2021/22, there were some acquisitions and developments in Australian dairy processing.

- October: Nature One Dairy acquired Nepean River Dairy.
- November: Norco announced upgrades to its Lismore ice cream factory, however, it was severely damaged during repeated flood events in 2022.
- December: Biripi Capital received funding to develop a processing plant and soon after, South Australian cheese maker La Casa Del Formaggio began construction on a new cheese production facility.
- Early 2022: Beston Global Food Company announced plans to expand its lactoferrin production at the Jervois facility.
- End of the 2021/22 season: Lactalis purchased Jalna Dairy Foods.

In 2021/22, around 49% (in milk equivalent terms) of manufactured product, such as cheese and butter, was exported, with the remaining 51% sold on the Australian market. This contrasts with drinking milk, where most was consumed domestically.

Cheese is consistently the major product stream, accounting for 40% of Australia's milk production in 2021/22. Investments in cheese production over recent years suggest this is likely to remain the case in future. Drinking milk and skim milk powder/butter production represent the next two largest utilisers of milk, accounting for 30% and 19% of Australian milk respectively.

**Figure 8** Australian milk utilisation in 2021/22



Source: Dairy Australia

## DAIRY MARKETS

In Australia, milk production exceeds the volume required for domestic consumption, with surplus product therefore destined for export markets. As illustrated in Figure 9, the share of total production destined for export has declined from around 50% two decades ago, to approximately one-third in recent years. In 2021/22, Australia exported 36% of milk produced. With a larger domestic market due to population growth and an overall decline in milk production, the share of milk exported has contracted.

Australia accounts for less than 2% of the world's estimated milk production but remains a significant exporter of dairy products. The country currently ranks fourth in terms of world dairy trade with a 5% share behind New Zealand, the European Union and the United States.

For a number of years, Greater China (including China, Hong Kong and Macau) has been Australia's largest market and a destination for about 36% of exports by volume. While Greater China remains one of Australia's fastest growing export markets by volume, other large export destinations include Singapore, Japan, Malaysia and Indonesia. As a mature, high-value market with long-established business relationships, Japan is a vital trade

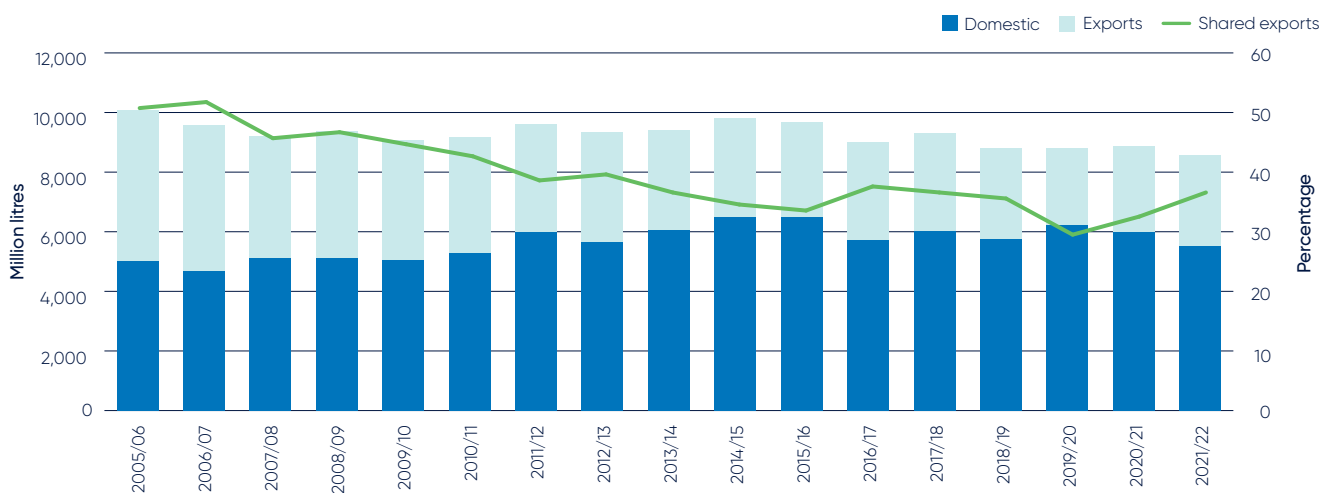
partner for Australian exporters. Almost 90% of Australian exports in 2021/22 were destined for Asia.

In 2021/22, Australia's total exports were valued at A\$3.8 billion. Measured by dollar value, the top five export markets were Greater China, Japan, Indonesia, Malaysia and Singapore. This order differs slightly from export rankings by volume, highlighting the differences in value for various dairy products imported.

The concentration of Australian exports to Asia reflects the geographical proximity to these markets, and the extent to which Australia has been hindered from accessing other major markets by direct restrictions (as in the case of the European Union). Increased competition in key importing markets has also played a role in creating this concentration. Asian markets have considerable potential for consumption growth as incomes rise and diets become more 'westernised'. Australian dairy companies also have proven track records in supplying these markets over several decades.

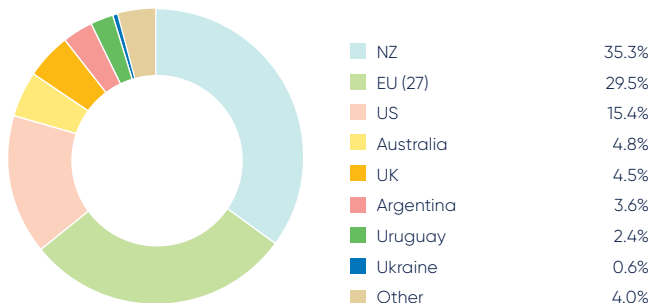
See Appendix 8 for detailed tables of Australia's export markets.

**Figure 9** Australian production and exports (milk equivalents)



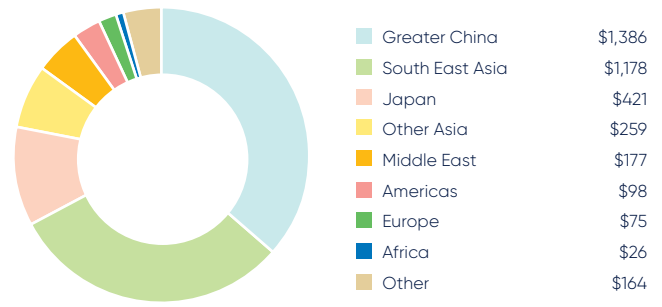
Source: Dairy manufacturers and ABS

**Figure 10** Exporters' share of world dairy trade in 2021 (milk equivalents)



Source: Dairy Australia

**Figure 11** Australian exports by region in 2021/22 (A\$ million)



Source: ABS

**Table 16** Australian dairy exports by product by region 2021/22 (\$A million)

	SE Asia	Other Asia	Europe	Middle East	Africa	Americas	Other	Total
Butter/AMF	63	77	1	13	3	16	2	176
Cheese	245	596	1	32	14	50	39	977
Milk	126	217	0	0	0	0	23	366
SMP	325	404	0	67	1	0	10	807
WMP*	184	328	0	28	3	8	7	558
Other	235	443	73	37	4	24	83	900
<b>Total</b>	<b>1,178</b>	<b>2,065</b>	<b>75</b>	<b>177</b>	<b>26</b>	<b>98</b>	<b>164</b>	<b>3,784</b>

\*Also includes infant powder.

Other includes buttermilk powder, casein, condensed milk, ice cream, lactose, whey powder, yoghurt and mixtures.

Source: ABS

**Table 17** Top 10 Australian export destinations in 2021/22

Country	Volume (tonnes)	% of total	Country	Value (A\$ million)	% of total
Greater China*	303,397	36	Greater China*	1,386	37
Singapore	80,869	10	Japan	421	11
Japan	69,963	8	Indonesia	291	8
Malaysia	63,600	8	Malaysia	225	6
Indonesia	59,147	7	Singapore	214	6
Philippines	43,313	5	Thailand	173	5
Thailand	31,118	4	Vietnam	133	4
Vietnam	30,325	4	Philippines	132	3
New Zealand	22,922	3	Korea, South	116	3
Taiwan	22,666	3	New Zealand	113	3

\*Includes China, Hong Kong and Macau

Source: Dairy Australia and ABS

# AUSTRALIAN CONSUMPTION OF DAIRY PRODUCTS

In Australia, the main consumer dairy products are drinking milk, cheese, butter/butter blends and yoghurt. Over the past two decades, per capita consumption trends have varied quite significantly by individual product. These trends reflect changes in consumer tastes in response to: multicultural influences on food trends; health perceptions surrounding dairy products; and flavour and packaging innovations.

Currently, consumption of drinking milk per capita is estimated at 93 litres. This has marginally declined over recent years, however, compared to other developed countries, Australia's consumption of drinking milk is high. Following the initial COVID-19 outbreak, UHT milk grew in popularity. However, despite this increased demand, fresh milk remains the most popular variety amongst consumers.

Annual per capita consumption of cheese in Australia was about 15.1kg in 2021/22. While cheddar types remain the most popular variety of cheese, non-cheddar cheese varieties available in Australia have increased. These varieties have grown in popularity due to rising demand for mozzarella cheese in the foodservice sector and retail stores, as well as growth in specialist cheese varieties.

In 2021/22, per capita consumption of butter in Australia was approximately 3.3kg.

Australian consumers are attracted to the natural characteristics of butter, along with its superior taste and cooking functionality. Sales of this product are also underpinned by findings in health and nutritional science, changing consumer perception of health risks associated with saturated fats and butter.

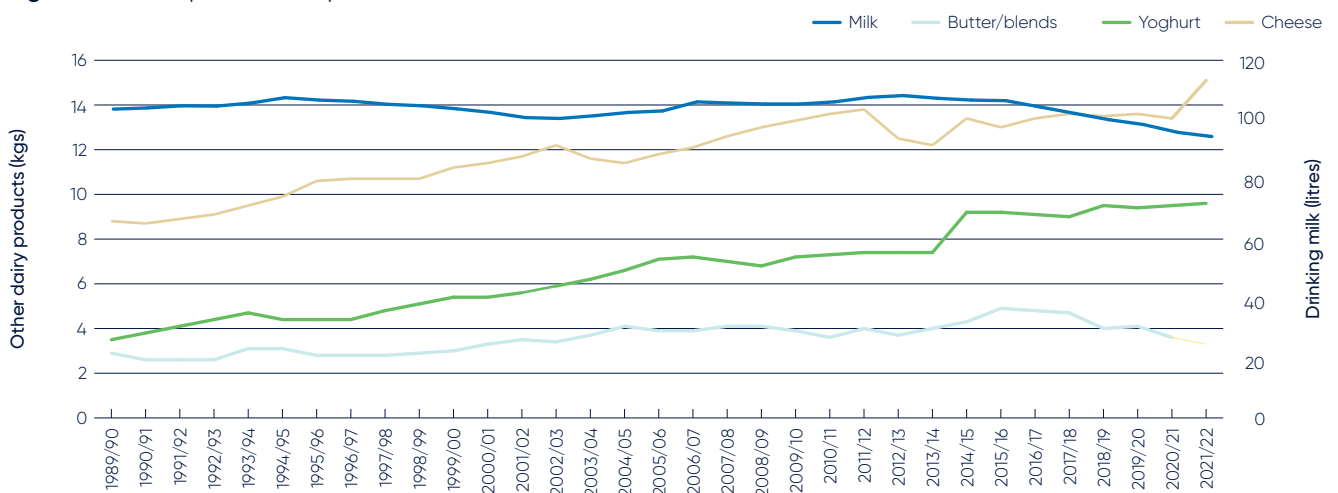
Combining convenience and health attributes, yoghurt is a healthy snack for consumers with a growing per capita consumption that is estimated at 9.6 kg in 2021/22. Consumer preferences have shifted with a heightened focus on natural and healthy products, and increased awareness of the health risks of sugar. As a result, consumers have transitioned away from sweetened and flavoured yoghurt varieties, towards Greek and natural style yoghurts.

**Table 18** Per capita consumption of major dairy products

	Milk (l)	Cheese (kg)	Butter/blends (kg)	Yoghurt (kg)
2017/18	100.7	13.6	4.7	9.0
2018/19	98.6	13.5	4.0	9.5
2019/20	97.0	13.6	4.1	9.4
2020/21	94.4	13.4	3.6	9.5
2021/22 (p)	93.0	15.1	3.3	9.6

Source: Dairy manufacturers and Dairy Australia

**Figure 12** Per capita consumption



Source: Dairy manufacturers and Dairy Australia

## DRINKING MILK

Drinking milk is a staple item in almost all Australian households. It is widely consumed, convenient and versatile and contains an outstanding package of protein, vitamins, and minerals.

Australian consumers overwhelmingly prefer fresh, pasteurised milk (heated to 74 degrees for 15 seconds). This preference for fresh milk generally requires dairy farming close to major population centres and extensive cold-chain logistics to provide reliable, year-round fresh milk. While fresh milk accounts for the vast majority of milk sales in Australia, the share of supermarket sales by volume for UHT milk (heated to 140 degrees for two seconds) has increased over the past two decades. This was further accelerated by the COVID-19 pandemic and associated panic buying.

Regular or full cream milk has a milkfat content of 3.4% to 3.6%, while low-fat and skim milks are modified to contain less than 1.5% and 0.15% milkfat respectively. The cream removed during modification can be bottled as table cream or manufactured into butter and other dairy products. As the composition of milk produced changes through the course of a season, most milk is standardised to ensure a consistent taste and nutritional profile year-round. Drinking milk generally undergoes further processing in the form of homogenisation, which disperses the fat equally throughout the milk, rather than allowing it to separate at the top.

The share of fresh white full cream milk as a percentage of the total fresh white milk market has increased over time, as sales volumes of low-fat and skim milks have declined. While white milk (unflavoured) still accounts for most of drinking milk sold, sales of flavoured milk have also grown.

Flavoured milk is an important source of revenue for the industry due to its higher unit prices. Sales of this milk variety remain distinctly regional, with strong local brands and varying consumption patterns.

South Australia has historically consumed between two and three times the national average of flavoured milk, with a much flatter year-round demand. Demand in states such as Victoria tends to be seasonal.

There are several major players in the Australian drinking milk market. The two largest are Bega Cheese and Lactalis Australia. Fonterra Australia and Saputo Dairy Australia both entered the drinking milk after 2011, securing major supermarket private label contracts in Victoria and New South Wales. Some major retailers also directly source milk for private label supermarket sales. Brownes (Western Australia) and Norco (Queensland and northern New South Wales) have more localised distribution.

*See Appendix 7 for more details of supermarket milk sales and average prices.*

Historically, Australia only exported relatively small volumes of liquid milk. However, in recent years, export volumes have grown significantly. In 2021/22, Australia exported over 284 million litres of milk, up 4% compared to last year. This product was predominantly UHT. Almost 95% of the total volume was exported to Asia with the remainder going towards the island countries of the Pacific and some markets in the Middle East and South Africa.

*See Appendix 8 for more details of drinking milk exports.*



**Table 19** Drinking milk sales by type (million litres)

	Regular	Reduced	No fat	Flavoured	UHT	Total
1989/90	1,257	322		111	40	<b>1,730</b>
1999/00	1,099	498		173	164	<b>1,933</b>
2009/10	1,134	592	117	215	211	<b>2,269</b>
2010/11	1,140	632	109	227	208	<b>2,316</b>
2011/12	1,160	679	104	236	208	<b>2,387</b>
2012/13	1,172	690	100	240	243	<b>2,445</b>
2013/14 (r)	1,192	691	93	241	250	<b>2,467</b>
2014/15	1,244	659	88	241	257	<b>2,489</b>
2015/16	1,311	617	80	246	266	<b>2,520</b>
2016/17	1,362	566	71	246	256	<b>2,501</b>
2017/18 (r)	1,397	539	64	242	251	<b>2,493</b>
2018/19	1,409	518	63	233	248	<b>2,471</b>
2019/20	1,402	514	69	227	256	<b>2,468</b>
2020/21 (r)	1,369	500	62	234	259	<b>2,424</b>
2021/22 (p)	1,340	487	61	232	275	<b>2,395</b>

(Dairy Australia estimates that this collection covers over 95% of milk sales)  
Source: Milk processors and state milk authorities

**Table 20** Drinking milk sales by state (million litres)

	NSW	Vic	Qld	SA	WA	Tas	Aust
1979/80	531	437	249	127	119	41	<b>1,504</b>
1989/90	582	449	316	150	164	47	<b>1,730</b>
1999/00	597	440	383	185	190	48	<b>1,933</b>
2009/10	708	545	499	213	247	57	<b>2,269</b>
2010/11	715	566	502	213	262	58	<b>2,316</b>
2011/12	721	582	531	221	274	58	<b>2,387</b>
2012/13	719	600	563	222	280	61	<b>2,445</b>
2013/14 (r)	711	612	584	222	279	59	<b>2,467</b>
2014/15	715	625	581	222	285	61	<b>2,489</b>
2015/16	732	637	583	222	285	61	<b>2,520</b>
2016/17	721	633	578	226	283	60	<b>2,501</b>
2017/18	719	627	583	223	281	60	<b>2,493</b>
2018/19	708	636	576	217	276	58	<b>2,471</b>
2019/20	691	655	575	215	277	55	<b>2,468</b>
2020/21 (r)	680	623	574	212	280	55	<b>2,424</b>
2021/22 (p)	664	612	573	213	279	54	<b>2,395</b>

(Dairy Australia estimates that this collection covers over 95% of milk sales)  
State figures exclude interstate traded milk prior to 2001, NSW includes ACT after June 2000.  
Source: Milk processors and state milk authorities

## CHEESE

In 2021/22, Australia produced approximately 408,000 tonnes of cheese – close to the production volumes of the early to mid-2000s. In recent years, dairy companies have adjusted export mixes to take advantage of favourable movement in international commodity prices which significantly impacts production volumes. This can lead to increased cheese production as international price trends can make it an attractive revenue stream (as has been the case for the past few years).

Cheese is a major product for the Australian dairy industry, utilising more than one-third of Australian milk. There has been a long-term production trend away from cheddar cheeses and towards non-cheddar cheese types. The non-cheddar share of total production volumes has steadily increased from 30% three decades ago, to 47% in 2021/22.

The trend away from cheddar cheeses towards non-cheddar cheese types is also evident in Australia's cheese exports. The non-cheddar share of total export sales has steadily increased from around 60% two decades ago, to almost 82% in 2021/22.

Australia exported approximately 157,000 tonnes of cheese to almost 60 different countries in 2021/22, worth close to A\$977 million.

Japan continues to be Australia's most important overseas cheese market, accounting for around 38% of cheese exported in 2021/22. This product is mostly fresh or cream cheese varieties, used for processing. Other important overseas markets include Greater China, Malaysia, South Korea, the Philippines, Singapore and Thailand.

Australia is also a major importer of cheese. Over the past 10 years, imports have grown almost 28%. Imports from New Zealand totalled close to 36,000 tonnes, with the European Union and United States largely accounting for the balance.

**Table 21** Australian cheese production by type of cheese (tonnes)

	2016/17	2017/18	2018/19 (r)	2019/20 (r)	2020/21 (r)	2021/22 (p)
Cheddar	186,145	202,032	191,852	189,244	170,043	215,292
Semi hard	51,703	60,511	61,815	62,030	82,716	75,522
Hard grating	5,993	4,022	8,417	10,006	15,366	19,267
Fresh	97,053	103,510	104,586	90,138	91,717	94,927
Mould	7,757	7,652	7,628	6,775	6,795	3,238
<b>Total cheese</b>	<b>348,651</b>	<b>377,727</b>	<b>374,298</b>	<b>358,192</b>	<b>366,638</b>	<b>408,246</b>

(Dairy Australia estimates that this collection covers over 90% of cheese production)  
Source: Dairy manufacturers

# BUTTER

In 2021/22, Australia produced over 73,000 tonnes of butter and anhydrous milkfat (AMF) in commercial butter equivalent terms (CBE). AMF is butter with the water removed, similar to ghee. When manufacturing butter, skim milk powder is created as a coproduct, using the solids nonfat components of the milk. It is primarily produced for export and domestic food manufacturing applications, such as bakery and confectionery. While these sectors all utilise butter, most domestic butter sales are through retail and foodservice outlets.

In 2021/22, around 65% of domestic dairy spread sales were through supermarkets. The outbreak of COVID-19, and consequential lockdown restrictions to curb the spread of the virus, impacted consumer habits. The temporary closure of many foodservice venues diverted consumer spending to grocery outlets, supporting supermarket sales. However, in the absence of lockdowns, sales have normalised.

Butter imports accounted for close to one-third of the Australian butter market by volume in 2021/22. Of the 34,000 tonnes of butter and butteroil imported into Australia, 83% was from New Zealand while the remaining product was sourced from various European countries and the United States.

Australian exports of butter and AMF can vary significantly from year to year, depending on milk availability during the season and local dairy company responses to international prices for competing products. In 2021/22, export volumes fell 20%, to roughly 18,000 tonnes. Out of 39 countries, Australia's most important overseas markets for butter and AMF were Greater China, Thailand, Singapore and Kuwait.

See Appendix 8 for more details of butter and AMF exports.

**Table 22** Butter and AMF production (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
Butter/butter blends (CBE)	85,459	79,749	61,177	63,567	69,227	58,559
AMF (CBE)	14,539	13,570	12,270	9,601	12,477	14,460

(Dairy Australia estimates that this collection covers over 85% of butter/AMF production)  
Source: Dairy manufacturers

**Table 23** Australian exports of butter and AMF (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
Butter	14,409	9,721	13,183	8,044	17,479	15,824
AMF (CBE)	6,896	6,354	8,089	3,809	7,201	6,723

Source: ABS

## OTHER FRESH AND FROZEN DAIRY PRODUCTS

Australian manufacturers produce a range of fresh dairy products, including yoghurts, dairy desserts, chilled custards and creams, and frozen products such as ice-cream.

Over the past two decades, yoghurt production has grown considerably. The product category's ability to meet rising consumer preferences for convenient, yet healthy snacks has been advantageous in an environment of time-poor lifestyles. Yoghurt sales strengthened from the initial COVID-19 outbreak, as consumers looked for healthy products and purchased more for cooking and baking at home. Featuring international brands, such as Ski, Yoplait and Chobani, there is an ongoing trend away from sweetened and flavoured varieties in the yoghurt market. Traditional, unflavoured types, such as Greek-style yoghurt, are perceived to be healthier and more 'natural' to health-conscious consumers. This shift in perception has strengthened sales of unflavoured, traditional type yoghurts, overtaking sweetened and flavoured yoghurts as the most sold product.

Growth in yoghurt sales has also been underpinned by regular product innovation, particularly in areas such as packaging, flavour combinations and the use of probiotic cultures. New products, such as drinking yoghurts and single snack servings in convenience outlets, have also helped drive growth.

Dairy desserts are a low volume and high value dairy category, including products such as mousses, crème caramels and fromage frais. Marketed as an indulgence or treat item, these products are generally targeted to adult consumers however, fromage frais and flavoured custards are examples of children's products which often feature popular cartoon characters on-pack.

As a traditional favourite, chilled custard sales have marginally increased in recent years, as manufacturers expand their product offerings. This includes branching out into new flavours and small, snack-sized, single-serve plastic cups sold in multi-packs.

Despite cream sales decreasing 14% in 2021/22, the product remains an important fresh dairy product widely used in cooking. Regular and sour creams are used extensively as accompaniments or ingredients and similar to butter, consumers remain interested in cream's superior taste and cooking functionality, relative to plant-based substitutes.

*See Appendix 6 for more details on cream, custard and dairy dessert sales.*

## MILK POWDERS

Australian manufacturers produce a wide range of milk powders. The technology used in the production and utilisation of powders, has allowed the range of specifications available from Australian manufacturers to expand in line with customer needs.

As milk production grew steadily up to the year 2000, whole milk powder production expanded to represent a larger share of total milk powder production. However, in 2001/02 this trend reversed with skim milk powder becoming more predominant. In 2021/22, skim milk powder accounted for more than three-quarters of milk powders produced.

Following several challenging years for the dairy industry, manufacturers have had access to a smaller national milk pool and a wider variety of markets. As a result, companies have had to be more flexible with their product mixes, taking advantage of relative movements in international commodity prices. Differing market access arrangements also impact the competitiveness of product pricing. For example, local producers will be at a competitive disadvantage where Australia may not have negotiated a free trade agreement, but a competitive supplier country has done so. This impacts local production mixes because the bulk of Australia's milk powders are exported overseas.

Only a small portion of Australia's powder production is sold domestically, with local product primarily used as an ingredient in food manufacturing. Infant formula is a high-value product that has shown considerable growth in the past five years, generated through Australian supermarket sales (partly due to the demand from informal re-export trades, such as the Diagou trade), and through direct exports.

In 2021/22, Australia also imported approximately 71,000 tonnes of milk powders. Despite decreasing from last year, imports of milk powders have been growing steadily over the past decade, most of which is sourced from New Zealand.

Exported milk powder is often recombined into liquid milk products, particularly in tropical climates where fresh milk supplies are not readily available. This is mainly due to insufficient local production and/or limited development of cold chain distribution facilities. These products are also used in bakery items (improving the volume and binding capacity of bread and ensuring crisper pastry and biscuits), confectionery and milk chocolates, processed meats, ready-to-cook meals, baby foods, ice-cream, yoghurt, health foods and reduced-fat milks. Industrial grade powder is often used for stockfeed.

The major export markets for Australian milk powders are concentrated in Asia, where over 88% of skim milk powder and whole milk powder exports were destined in 2021/22.

Out of 29 export destinations, the largest export market for Australian-produced skim milk powder in 2021/22 was Greater China, followed by Indonesia, Kuwait, Vietnam, Thailand, and Singapore.

Australian-produced whole milk powder was exported to 39 destinations in 2021/22, with Greater China representing the largest market. This was followed by Thailand, Indonesia, United Arab Emirates, Singapore, and Malaysia.

*See Appendix 8 for more details on milk powder exports.*

**Table 24** Australian production of milk powders (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
Skim milk powder	222,109	201,426	192,373	160,180	153,741	150,473
Whole milk powder*	63,242	83,999	48,534	44,636	52,458	42,150

\*Includes infant powder

(Dairy Australia estimates that this collection covers over 80% of WMP production and over 85% of SMP production)

Source: Dairy manufacturers

**Table 25** Australian exports of skim milk powder by region (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
Asia	135,998	137,629	136,669	94,576	112,334	132,752
Middle East	14,057	11,630	12,559	11,140	9,944	14,147
Africa	1,428	5,761	236	25	150	175
Pacific	1,775	1,586	1,737	1,901	478	1,850
Americas	47	0	0	0	0	7
Europe	0	0	0	0	5	0
<b>Total</b>	<b>153,305</b>	<b>156,606</b>	<b>151,201</b>	<b>107,642</b>	<b>122,911</b>	<b>148,931</b>

Source: ABS

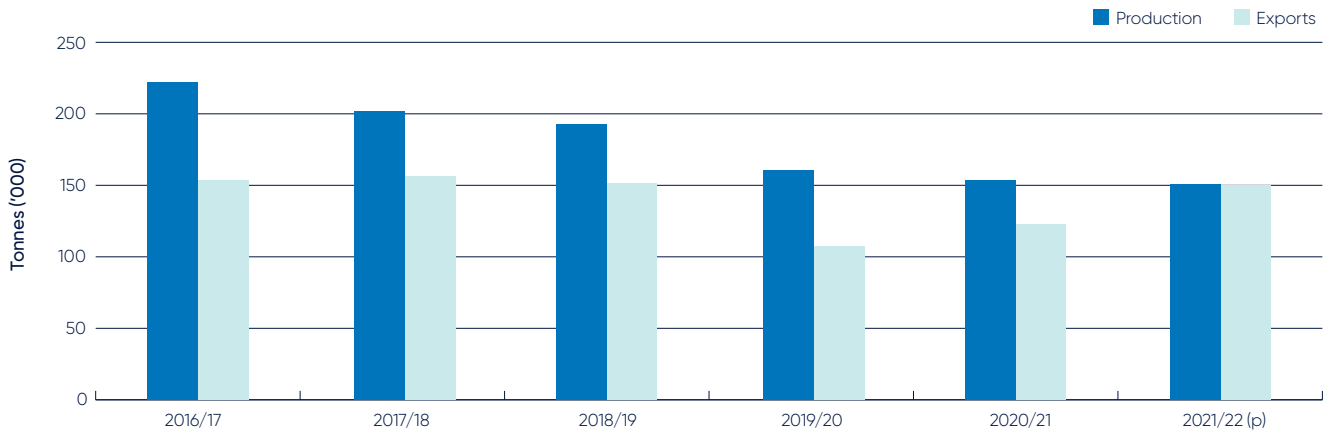
**Table 26** Australian exports of whole milk powder by region\* (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
Asia	77,157	73,851	49,508	44,174	52,029	54,517
Middle East	4,158	4,467	1,953	846	636	5,973
Africa	243	5,558	67	13	172	668
Pacific	2,083	2,170	1,860	1,032	1,125	1,094
Americas	3,063	1,315	1,324	491	217	618
Europe	104	200	0	0	0	0
<b>Total</b>	<b>86,808</b>	<b>87,561</b>	<b>54,712</b>	<b>46,556</b>	<b>54,179</b>	<b>62,871</b>

\*Includes infant powder

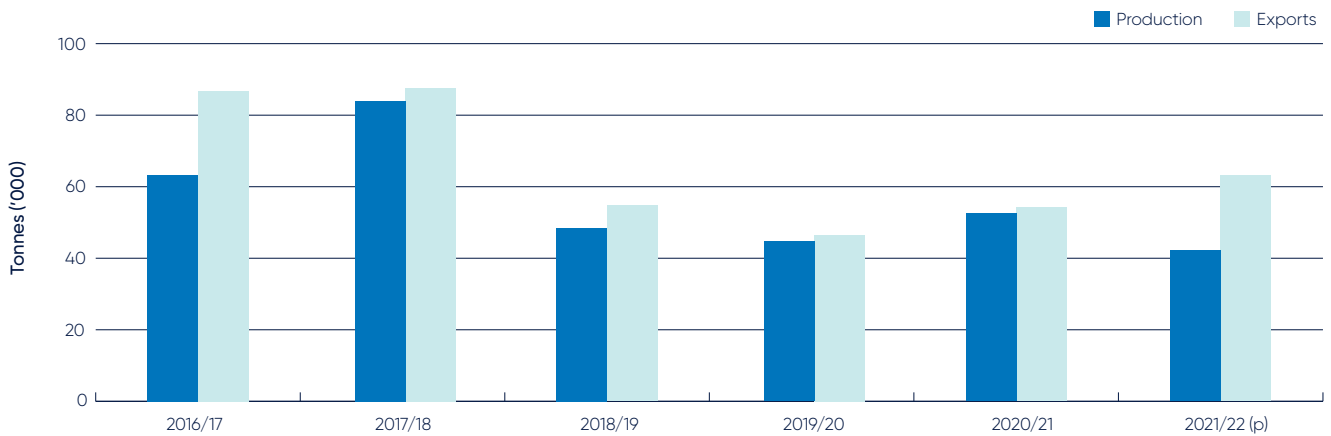
Source: ABS

**Figure 13** Australian production and exports of skim milk powder



(Dairy Australia estimates that this collection covers over 85% of SMP production)  
 Source: Dairy manufacturers and ABS

**Figure 14** Australian production and exports of whole milk powder



(Dairy Australia estimates that this collection covers over 80% of WMP production)  
 Source: Dairy manufacturers and ABS

## WHEY PRODUCTS AND CASEIN

As a byproduct of the cheese-making process, whey has traditionally been disposed of in its liquid form. However, over the past few decades, the value of whey's components and properties has been recognised, increasing the utilisation of whey powder and protein concentrates.

Food-grade whey powder is used in the manufacture of ice-cream, bakery products (cakes, biscuits), chocolate flavouring, infant formula, yoghurt, beverages and processed meat. Industrial uses include animal feed (for pigs, horses and poultry), calf milk replacer and even as a carrier for herbicides.

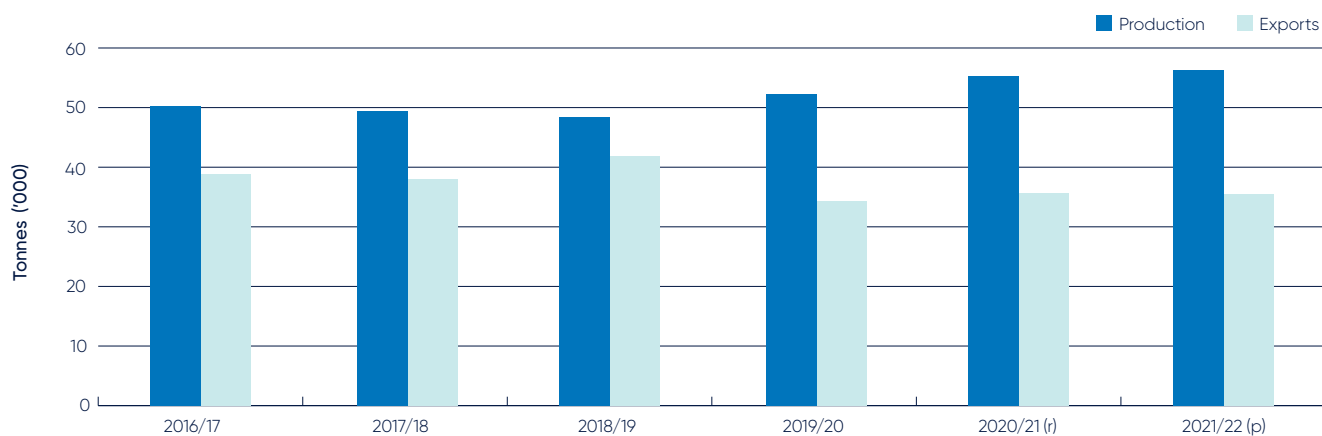
Whey protein concentrates are used in snack foods, juices, confectionery, ice-cream, biscuits, processed meats, protein drinks, desserts, infant foods and dietetic products. Products such as cosmetics, skin creams, bath salts and detergents also contain protein concentrates.

In Australia, whey is used domestically in manufacturing infant formula, biscuits and ice-cream, while the remainder is exported. In 2021/22, Indonesia, Greater China, Singapore, Japan and Thailand were the largest export markets for Australian whey powders.

Casein and caseinates are used as binding ingredients, emulsifiers and milk substitutes in processed foods such as noodles, chocolate, sweets, mayonnaise, ice-cream and cheese. Industrial uses of casein and caseinates include: plastics (buttons, knitting needles); the manufacture of synthetic fibres and chemicals (plants, glues, glazed paper, putty and cosmetics); a nutritional supplement and binder in calf milk replacers; and a range of other technical applications.

Australia is no longer a significant producer of casein and imports the vast majority of its requirements. These mainly originate from New Zealand (over 70% of the total volume), with the balance from Europe and the United States in 2021/22.

**Figure 15** Australian production and exports of whey products



(Dairy Australia estimates that this collection covers over 95% of whey production)  
Source: Dairy manufacturers and ABS



# INDUSTRY ORGANISATIONS AND STRUCTURE

## Dairy Australia

- is the dairy industry’s national service body
- is funded through the Dairy Service Levy with matching funding from the Commonwealth Government on research and development activities
- invests in essential activities across the supply chain to deliver the best outcomes for dairy farmers, the dairy industry and the broader community
- focuses investment on pre and post-farmgate research, development, extension and industry services. This includes education, trade policy, information, issues management, technological innovation, promoting the health and nutrition benefits of dairy products and marketing of the industry.

Dairy Australia is one of several regional and national organisations that support the Australian dairy industry. It is essential these organisations work together to help achieve the dairy industry vision. Dairy Australia contributes funding, planning and management to eight Regional Development Programs. Additionally, Dairy Australia is committed to working closely with state and national representational bodies to collectively deliver the dairy industry’s goal.

**Figure 16** The structure of Australian dairy industry organisations





## INDUSTRY LEVIES

### Dairy Service

Dairy Australia is the national service body for the Australian dairy industry. Dairy Australia is funded by a combination of levies paid by dairy farmers, calculated on the fat and protein content of milk, and matching payments from the Commonwealth Government for eligible research and development (R&D) activities.

### Animal Health Australia

Australian dairy farmers contribute funding to Animal Health Australia (AHA), as do farmers in all other livestock industries. AHA is a non-profit public company limited by guarantee. Members include Australian state and territory governments as well as key commodity and interest groups. AHA's task is to facilitate partnerships between governments and livestock industries and provide a national approach to animal health systems. The

Animal Health Levy is the dairy industry's contribution to AHA programs.

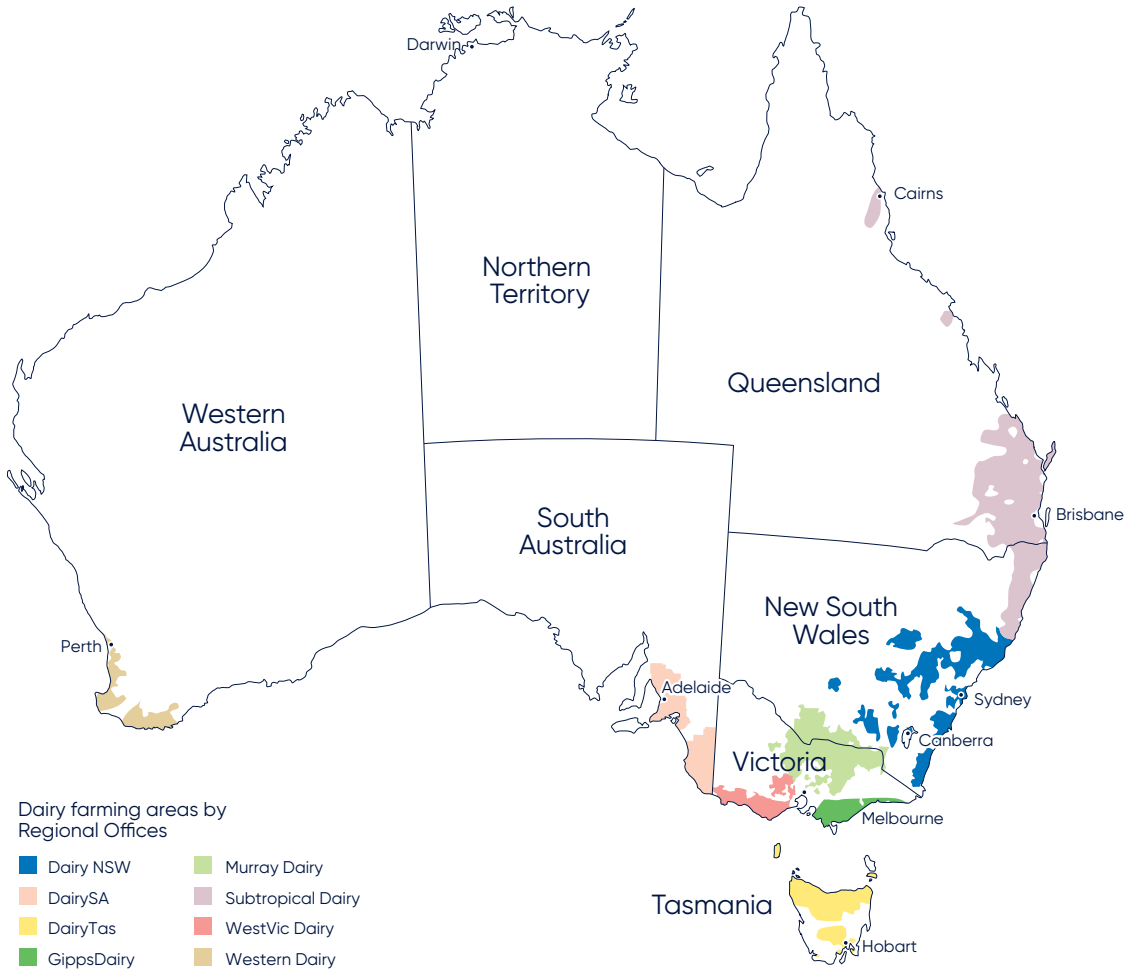
**Table 27** Average rate of milk levies for 2021/22

	Milkfat (¢/kg)	Protein (¢/kg)	Milk* (¢/litre)	Milk solids (¢/kg)
Animal Health Australia	0.0580	0.1385	0.007	0.09
Dairy Service	2.8683	6.9914	0.357	4.72

\*Based on average 2021/22 Australian milk composition of 4.17% milkfat and 3.40% protein

# APPENDICES

## Appendix 1 Dairying regions



## Appendix 2 Australian industry footprint

**Table A1** Australian state/region breakdown 2021/22

	Qld	NSW	Vic	SA	WA	Tas	Aust
Dairy farms <sup>1</sup>	280	494	2,984	181	116	365	<b>4,420</b>
Cows in milk and dry ('000) <sup>2</sup>	64	148	840	64	50	174	<b>1,340</b>
People employed on farm (full time and part-time) <sup>3</sup>	1,200	2,400	8,300	1,200	300	1,300	<b>14,700</b>
People employed in processing (full time and part-time) <sup>3</sup>	2,300	4,000	11,000	700	900	1,100	<b>20,000</b>
People directly working in dairy (full time and part-time) <sup>3</sup>	3,500	6,400	19,300	1,900	1,200	2,400	<b>34,700</b>
Volume of milk produced (ML) <sup>4</sup>	299	1,072	5,465	490	341	887	<b>8,554</b>
Share of national milk production (%)	3.5	12.5	63.9	5.7	4.0	10.4	
Value of milk leaving farms (\$m)	209	687	3,019	263	188	506	<b>4,872</b>
Value of dairy products exported (\$m) <sup>5</sup>	54	426	2,443	228	46	586	<b>3,784</b>
Share of national dairy exports – value (%)	1	11	65	6	1	15	
Volume of dairy products exported ('000)	14	45	626	53	36	62	<b>836</b>
Share of national dairy exports – volume (%)	2	5	75	6	4	7	

Source: <sup>1</sup> State milk authorities and Dairy Australia; <sup>2</sup> ABS and Dairy Australia; <sup>3</sup> Employment derived from a three-yearly median state level figures from ABS Labour Force statistics, May 2022 quarter publication and Dairy Australia: split on the basis of milk production within states; <sup>4</sup> dairy manufacturers; <sup>5</sup> ABS export data: split on the basis of milk production.

	Subtropical Dairy	Dairy NSW	Gipps Dairy	Murray Dairy	WestVic Dairy	DairySA	Western Dairy	Dairy Tas	Aust
Dairy farms <sup>1</sup>	383	329	1,082	936	1,028	181	116	365	<b>4,420</b>
Cows in milk and dry ('000) <sup>2</sup>	82	96	302	275	297	64	50	174	<b>1,340</b>
People employed on farm (full time and part-time) <sup>3</sup>	1,300	1,900	3,000	2,800	2,900	1,200	300	1,300	<b>14,700</b>
People employed in processing (full time and part-time) <sup>3</sup>	2,800	3,000	4,000	3,800	3,700	700	900	1,100	<b>20,000</b>
People directly working in dairy (full time and part-time) <sup>3</sup>	4,100	4,900	7,000	6,600	6,600	1,900	1,200	2,400	<b>34,700</b>
Volume of milk produced (ML) <sup>4</sup>	444	788	1,944	1,732	1,928	490	341	887	<b>8,554</b>
Share of national milk production (%)	5.2	9.2	22.7	20.2	22.5	5.7	4.0	10.4	
Value of milk leaving farms (\$m)	311	505	1,074	961	1,065	263	188	506	<b>4,872</b>
Value of dairy products exported (\$m) <sup>5</sup>	67	417	839	781	819	228	46	586	<b>3,784</b>
Share of national dairy exports – value (%)	2	11	22	21	22	6	1	15	
Volume of dairy products exported ('000)	20	43	216	197	209	53	36	62	<b>836</b>
Share of national dairy exports – volume (%)	2	5	26	24	25	6	4	7	

Source: <sup>1</sup> State milk authorities and Dairy Australia; <sup>2</sup> ABS and Dairy Australia; <sup>3</sup> Employment derived from a three-yearly median state level figures from ABS Labour Force statistics, May 2022 quarter publication and Dairy Australia: split on the basis of milk production within states; <sup>4</sup> dairy manufacturers; <sup>5</sup> ABS export data: split on the basis of milk production.



## Appendix 3 Feed prices

**Table A2** Indicative Australian grain prices (\$ per tonne)

		Wheat	Barley	Maize	Sorghum	Canola meal	Oats	Triticale
Atherton Tablelands	2019/20	434	522	562	421			
	2020/21	358	306	391	343			
	2021/22	412	351	374	357			
Darling Downs	2019/20	422	386	558	405			
	2020/21	328	283	379	325			
	2021/22	355	325	366	321			
North Coast NSW	2019/20	426	404	568	413			
	2020/21	293	242	359	311			
	2021/22	318	274	361	299			
Central West NSW	2019/20	363	331	458	400			
	2020/21	266	212	364	288			
	2021/22	322	269	359	284			
Bega Valley	2019/20	418	374	488		456		
	2020/21	320	255	381		437		
	2021/22	345	291	367		492		
Goulburn/Murray Valley	2019/20	359	318	480		416		
	2020/21	298	235	364		431		
	2021/22	368	309	365		492		
Gippsland	2019/20	375	337	487		436		
	2020/21	313	254	385		440		
	2021/22	390	336	392		511		
South West Victoria	2019/20	367	319	488		431		
	2020/21	296	236	387		431		
	2021/22	366	314	393		496		
South East South Australia	2019/20	324	285	503		311		
	2020/21	305	232	415		433		
	2021/22	386	328	398		541		
Central Districts SA	2019/20	302	264	489		405		
	2020/21	302	226	424		328		
	2021/22	373	302	401		308		
South West WA	2019/20	306	269				389	380
	2020/21	322	258				303	313
	2021/22	366	313				278	320
North West Tasmania	2019/20	454	391	506		469		
	2020/21	407	337	395		516		
	2021/22	480	426	402		601		

(Data represents a simple average of yearly data in each region)  
Source: Profarmer

**Table A3** Indicative Australian hay prices (\$ per tonne)

		Pasture hay	Cereal hay	Lucerne hay	Straw
Atherton Tablelands	2019/20	359			
	2020/21	305			
	2021/22	306			
Darling Downs	2019/20	412	471	645	304
	2020/21	220	312	419	65
	2021/22	221	268	403	73
North Coast NSW	2019/20	326	462	593	252
	2020/21	227	285	421	125
	2021/22	210	245	405	125
Central West NSW	2019/20	372	442	616	271
	2020/21	180	262	504	70
	2021/22	182	195	331	70
Bega Valley	2019/20	450	436	653	275
	2020/21	408	344	615	215
	2021/22	358	293	509	210
Goulburn/Murray Valley	2019/20	334	303	579	140
	2020/21	274	203	475	90
	2021/22	238	189	412	90
Gippsland	2019/20	346	373	597	209
	2020/21	126	302	600	82
	2021/22	103	224	563	84
South West Victoria	2019/20	279	303	527	156
	2020/21	165	208	451	70
	2021/22	162	193	355	79
South East South Australia	2019/20	301	318	495	154
	2020/21	190	230	341	110
	2021/22	194	211	341	110
Central Districts SA	2019/20		304	545	175
	2020/21		221	437	115
	2021/22		202	417	117
South West WA	2019/20	245	341	470	141
	2020/21	210	326	470	130
	2021/22	186	267	469	139
North West Tasmania	2019/20	239	266	378	131
	2020/21	273	240	328	175
	2021/22	220	247	321	175

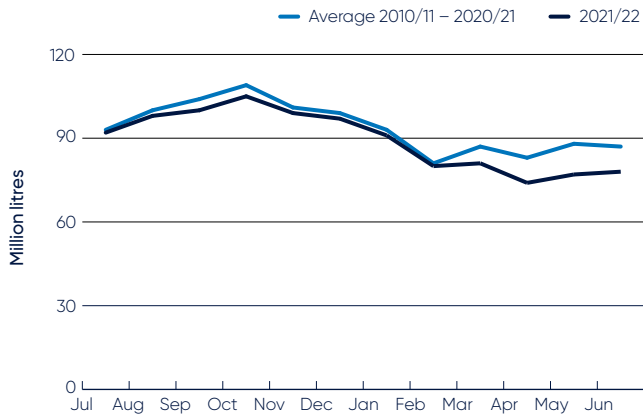
(Data represents a simple average of yearly data in each region)

Source: Australian Fodder Industry Association (AFIA)

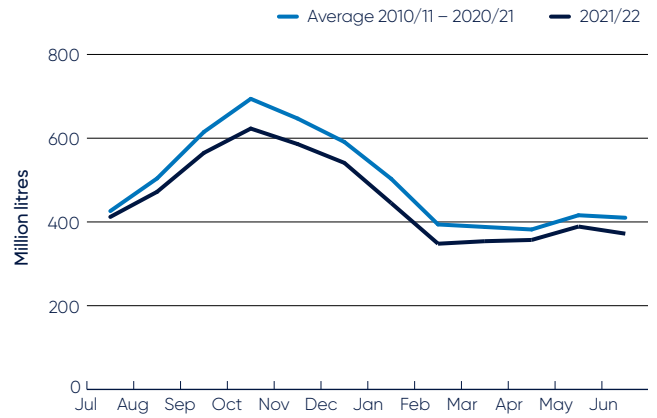
## Appendix 4 Milk production

Figure A1 Seasonality of milk production in 2021/22

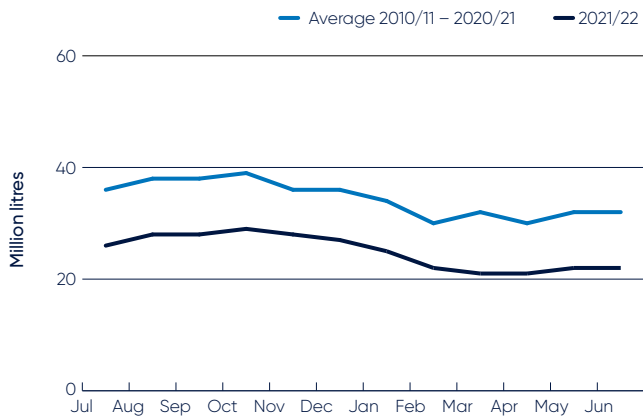
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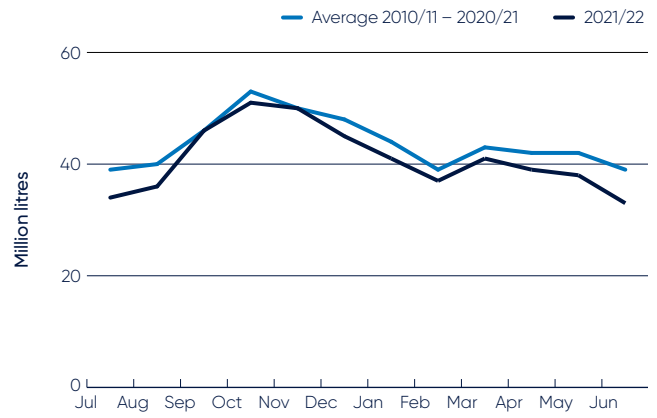
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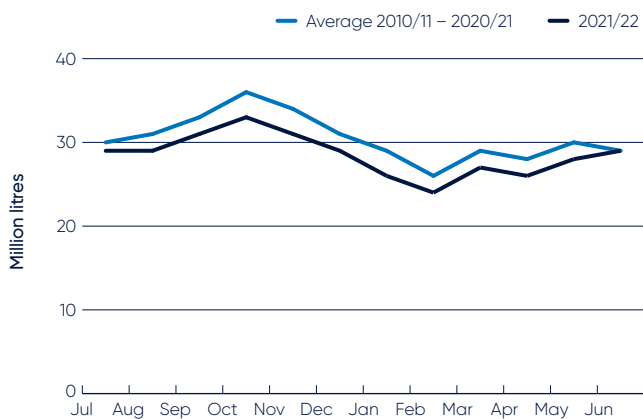
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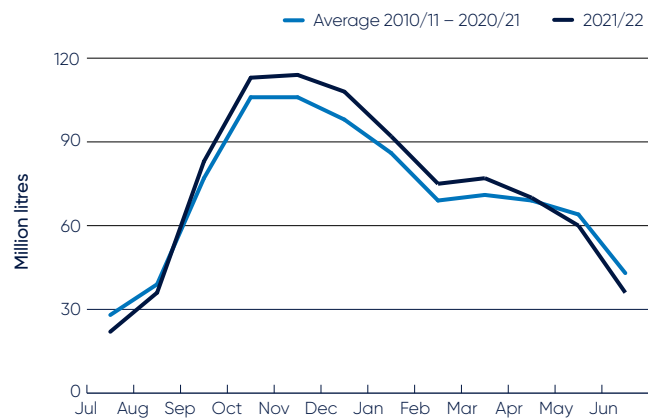
### South Australia



### Western Australia



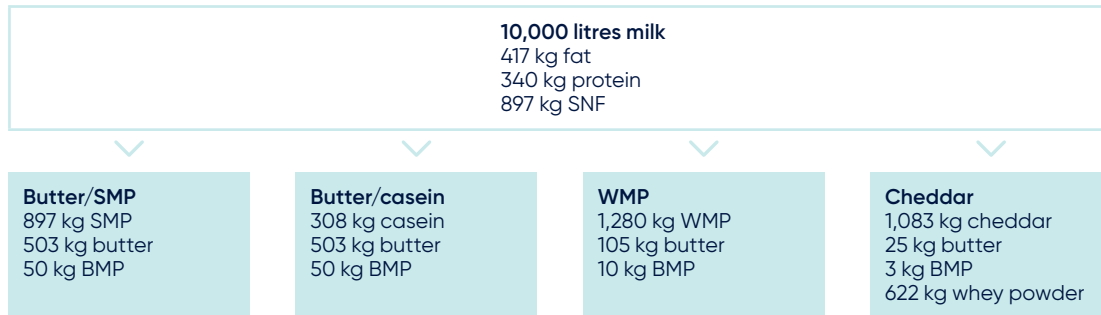
### Tasmania





## Appendix 5 Manufacturing processes

**Figure A2** Product yield from 10,000 litres of milk 2021/22



The milkfat and solids in manufacturing milk can be used to produce a wide variety of dairy products. There are four major production processes: two joint product processes for butter/skim milk powder (SMP) production and butter/casein production, and single product processes for whole milk powder (WMP) and cheese production. For each of these separate product lines, numerous other dairy products can be made from the residual milk components.

The first step in making butter is to separate whole milk into cream and skim milk. The liquid skim milk is evaporated and spray dried to produce SMP. The cream is churned until the fat globules form into solid butter, leaving a liquid by-product, buttermilk. This liquid can be dried to make buttermilk powder (BMP).

While there are various ways of making casein, one of the most common methods stems from the joint product process for creating butter. After separating whole milk into cream and skim milk, the skim milk can be set by mixing with acid to produce curd. The curd is shaken to remove large clumps, leaving a liquid whey by-product which is removed. The curd is then repeatedly rinsed in water and drained, with any excess moisture extracted by pressing the curd. This is then milled, dried, ground down and passed through a sieve to be broken into particle size.

To produce WMP, milk, with some cream removed, is evaporated, concentrated and dried, either by roller or spray process to form a powder. The spray drying method is more commonly used and involves spraying a fine mist of concentrated milk into a current of hot air to form granules of powder. The granules can be treated with steam to 'instantise' the powder and make it easier to reconstitute into milk.

The techniques to produce cheese can vary substantially, differing by the producer and variety of cheese created. To make cheddar cheese, some cream is removed from the pasteurised milk. Starter culture is added to the milk to produce both acid and flavour. Then rennet is added to form curd and whey. The curd is cut, heated and stirred to allow the whey to drain.

A process called cheddaring then takes place, and involves the curd being allowed to mat together, before it is milled, salted, pressed and packed. The cheese is stored to develop the desired maturity and flavour – the longer it is stored, the stronger the flavour. Mild cheddar is matured for approximately three months, semi-matured cheddar for three to six months, and mature or tasty cheddar for up to a year.

The liquid whey extracted during cheese manufacturing contains protein, lactose and a small portion of fat. It can be dried to make products for pharmaceutical purposes, as a useful supplement in stock feed, and in the creation of ice-cream.

The cream from the standardisation of milk for WMP, casein and cheddar production can be used to make butter and BMP.

**Table A4** Product composition

	% fat	% SNF
Skim milk powder	1.0	94.5
Butter	80.5	2.0
Ghee	99.6	0.1
Casein	1.5	88.5
Whole milk powder	26.0	70.4
Cheddar cheese	33.0	31.0
Gouda	31.5	23.5
Edam	21.2	31.8
Parmesan	21.8	46.2
Cottage cheese	4.0	16.0
Brie	25.0	25.0
Mozzarella	23.1	30.9

**Table A5** Australian production of dairy products (tonnes)

	Butter*	AMF (CBE)	SMP	WMP**	Whey products
1989/90	78,053	26,105	130,976	56,476	19,895
1999/00	110,325	71,295	236,322	186,653	66,258
2005/06	92,850	52,904	205,495	158,250	98,436
2006/07	101,666	31,434	191,475	135,364	86,198
2007/08	99,202	28,416	164,315	141,974	82,652
2008/09	109,753	38,742	212,030	147,544	81,136
2009/10	100,134	28,245	190,233	126,024	79,094
2010/11	96,326	26,160	222,484	151,269	61,488
2011/12	100,551	19,164	230,286	140,424	64,645
2012/13	99,035	19,193	224,061	108,838	63,440
2013/14	101,705	14,417	210,964	126,322	55,506
2014/15	101,641	16,943	242,266	96,840	51,806
2015/16	99,015	19,610	255,792	66,125	44,669
2016/17	85,459	14,539	222,109	63,342	50,209
2017/18	79,749	13,570	201,426	83,999	49,469
2018/19	61,177	12,270	192,373	48,534	48,385
2019/20	63,567	9,601	160,180	44,636	52,251
2020/21 (r)	69,227	12,477	153,741	52,458	55,202
2021/22 (p)	58,559	14,460	150,473	42,150	56,235

\*Includes butter blends as CBE \*\*Includes infant powder

Source: Dairy manufacturers

**Table A6** Australian cheese production by variety (tonnes)

	2016/17	2017/18	2018/19 (r)	2019/20 (r)	2020/21 (r)	2021/22 (p)
<b>Cheddar &amp; cheddar types</b>						
Cheddar <sup>1</sup>	148,649	159,361	151,184	156,388	138,578	176,532
Reduced fat cheddar	14,384	15,804	12,955	13,271	13,500	11,872
Other cheddar type cheese <sup>2</sup>	23,112	26,867	27,713	19,584	17,965	26,888
<b>Total cheddar</b>	<b>186,145</b>	<b>202,032</b>	<b>191,852</b>	<b>189,244</b>	<b>170,043</b>	<b>215,292</b>
<b>Semi hard cheese</b>						
Mozzarella and pizza	44,986	52,419	54,217	54,809	73,101	68,337
Other stretch curd and shredding	2,546	2,465	2,717	1,863	3,599	2,095
Other semi hard/eye cheese <sup>3</sup>	4,171	5,628	4,881	5,359	6,016	5,089
<b>Total semi hard cheese</b>	<b>51,703</b>	<b>60,511</b>	<b>61,815</b>	<b>62,030</b>	<b>82,716</b>	<b>75,522</b>
<b>Hard grating cheese</b>						
All types <sup>4</sup>	5,993	4,022	8,417	10,006	15,366	19,267
<b>Total</b>	<b>5,993</b>	<b>4,022</b>	<b>8,417</b>	<b>10,006</b>	<b>15,366</b>	<b>19,267</b>
<b>Fresh types</b>						
Cream cheese and neufchatel	79,285	86,446	87,909	82,691	84,255	90,004
Fetta	8,211	8,175	8,111	4,926	4,853	2,274
Ricotta	6,600	6,266	5,956	2,233	2,306	2,346
Other fresh types <sup>5</sup>	2,957	2,622	2,610	288	303	303
<b>Total</b>	<b>97,053</b>	<b>103,510</b>	<b>104,586</b>	<b>90,138</b>	<b>91,717</b>	<b>94,927</b>
<b>Mould ripened</b>						
Blue vein	664	716	550	332	270	2
Brie and camembert	6,452	6,297	6,437	5,945	5,629	2,678
Other mould ripened	641	639	641	498	896	558
<b>Total</b>	<b>7,757</b>	<b>7,652</b>	<b>7,628</b>	<b>6,774</b>	<b>6,796</b>	<b>3,238</b>
<b>Total cheese</b>	<b>348,651</b>	<b>377,727</b>	<b>374,298</b>	<b>358,192</b>	<b>366,638</b>	<b>408,246</b>

<sup>1</sup> Includes Vintage<sup>2</sup> Includes Cheedam, Colby, Cheshire, Gloucester, Lancashire, Leicester, Nimbin and semi processed cheddar<sup>3</sup> Includes Edam, Gouda, Swiss, Emmenthal, Fontina, Raclette, Havarti, Samsøe, Tilsit, Buetten, Vacherin, Bakers, Casalinga, Goya<sup>4</sup> Includes Parmesan, Pecorino, Romano, Fresh Pecorino, Melbourne, Pepato, Parmagiano<sup>5</sup> Includes Cottage, Quark, Stracchino, Mascarpone

(Dairy Australia estimates that this collection covers over 90% of cheese production)

Source: Dairy manufacturers

## Appendix 6 Domestic sales

**Table A7** Dairy company domestic sales (tonnes)

Major dairy products (excl drinking milk)	Sales channel	2019/20 (t)	2020/21 (t)	2021/22 (p)
Butter	Grocery	42,269	43,108	44,010
	Non-grocery	22,291	24,392	23,341
<b>Butter total</b>		<b>64,560</b>	<b>67,500</b>	<b>67,351</b>
Cheese	Grocery	136,792	141,699	147,745
	Non-grocery	107,867	111,132	100,490
<b>Cheese total</b>		<b>244,659</b>	<b>252,831</b>	<b>248,235</b>
Cream	Grocery	73,280	78,912	80,065
	Non-grocery	69,768	80,391	56,489
<b>Cream total</b>		<b>143,048</b>	<b>159,303</b>	<b>136,554</b>
Custard	Grocery	20,286	21,135	20,617
	Non-grocery	1,618	1,602	1,701
<b>Custard total</b>		<b>21,903</b>	<b>22,737</b>	<b>22,318</b>
Dairy desserts	Grocery	9,155	9,101	9,533
	Non-grocery	123	155	183
<b>Dairy desserts total</b>		<b>9,278</b>	<b>9,256</b>	<b>9,716</b>
Milk powder	Grocery	6,763	3,551	1,689
	Non-grocery	81,595	56,814	55,963
<b>Milk powder total</b>		<b>88,358</b>	<b>60,365</b>	<b>57,652</b>
Yoghurt	Grocery	117,113	128,181	113,502
	Non-grocery	11,070	10,597	10,591
<b>Yoghurt total</b>		<b>128,183</b>	<b>138,778</b>	<b>124,093</b>

This data is dairy company wholesale sales to distributors/warehouses/retailers. Grocery refers to major supermarket chains. Non-Grocery refers to other retailers including convenience stores, the foodservice and industrial channels.

Source: Dairy manufacturers



## Appendix 7 Supermarket sales

### Milk

**Table A8** Supermarket milk sales by state ('000 litres)

	NSW	Vic	Qld	SA	WA	NT	Tas	TOTAL
MAT 18 Jul 2021	457,386	351,366	297,721	112,414	164,707	10,393	30,461	1,424,449
MAT 17 Jul 2022	466,773	344,763	298,223	113,921	158,217	11,087	34,147	1,427,131

**Table A9** Supermarket milk sales by type ('000 litres)

	Regular	Reduced Fat	No Fat	UHT	Total
MAT 18 Jul 2021	802,307	358,606	27,374	236,161	1,424,449
MAT 17 Jul 2022	820,544	355,932	25,846	224,810	1,427,131

**Table A10** Supermarket milk sales - flavoured vs unflavoured ('000 litres)

	Flavoured	Unflavoured	Total
MAT 18 Jul 2021	107,920	1,316,528	1,424,449
MAT 17 Jul 2022	106,538	1,320,593	1,427,131

**Table A11** Supermarket milk sales - branded vs private label

	MAT 18 Jul 2021			MAT 17 Jul 2022		
	Volume	Value	Price/Litre	Volume	Value	Price/Litre
	'000 litres	'000 dollars		'000 litres	'000 dollars	
Total branded milk	613,688	\$1,343,887	\$2.19	601,559	1,356,577	\$2.26
Total private label milk	810,760	1,051,197	\$1.30	825,572	1,120,011	\$1.36
<b>Total milk</b>	<b>1,424,449</b>	<b>2,395,084</b>	<b>\$1.68</b>	<b>1,427,131</b>	<b>2,476,588</b>	<b>\$1.74</b>

NielsenIQ Homescan based on a continuous panel of 10,000 households; excludes non-private dwellings and businesses, non-permanently occupied households and out-of-home/impulse purchasing. Dairy Australia calculation based in part on data reported by NielsenIQ through its Homescan Service for the dairy category for the 52-week period ending 17/07/2022, for the total Australian market, according to the NielsenIQ standard product hierarchy. Copyright © 2022, Nielsen Consumer LLC.

## Dairy spreads

**Table A12** Supermarket dairy spreads sales by type

	MAT 18 Jul 2021			MAT 17 Jul 2022		
	Volume	Value	Price/Litre	Volume	Value	Price/Litre
	Tonnes	'000 dollars		Tonnes	'000 dollars	
Butter	29,781	332,824	\$11.18	29,878	345,086	\$11.55
Margarine	64,610	497,468	\$7.70	63,809	524,777	\$8.22
<b>Total dairy spreads</b>	<b>94,391</b>	<b>830,293</b>	<b>\$8.80</b>	<b>93,687</b>	<b>869,863</b>	<b>\$9.28</b>

**Table A13** Retail sales of butter by pack size

	MAT 18 Jul 2021			MAT 17 Jul 2022		
	Volume	Value	Price/kg	Volume	Value	Price/kg
	Tonnes	'000 dollars		Tonnes	'000 dollars	
250 gram	9,829	126,004	12.82	9,385	124,605	13.28
500 gram	16,417	176,003	10.72	16,190	179,438	11.08
Other sizes	2,786	19,929	7.15	3,548	30,187	8.51
<b>Total butter sales</b>	<b>29,032</b>	<b>321,936</b>	<b>\$11.09</b>	<b>29,123</b>	<b>334,230</b>	<b>\$11.48</b>

**Table A14** Retail sales of margarine by pack size

	MAT 18 Jul 2021			MAT 17 Jul 2022		
	Volume	Value	Price/kg	Volume	Value	Price/kg
	Tonnes	'000 dollars		Tonnes	'000 dollars	
250 gram	1,688	24,096	14.27	1,487	22,480	15.12
500 gram	39,203	312,326	7.97	39,004	327,956	8.41
Other sizes	22,957	156,552	6.82	22,526	168,942	7.50
<b>Total margarine sales</b>	<b>63,848</b>	<b>492,974</b>	<b>\$7.72</b>	<b>63,017</b>	<b>519,378</b>	<b>\$8.24</b>

NielsenIQ Homescan based on a continuous panel of 10,000 households; excludes non-private dwellings and businesses, non-permanently occupied households and out-of-home/impulse purchasing. Dairy Australia calculation based in part on data reported by NielsenIQ through its Homescan Service for the dairy category for the 52-week period ending 17/07/2022, for the total Australian market, according to the NielsenIQ standard product hierarchy. Copyright © 2022, Nielsen Consumer LLC.

## Appendix 8 Australian exports

**Table A15** Australian exports of cheese (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
<b>Asia</b>						
China, Hong Kong	24,530	22,555	22,762	20,898	25,520	27,747
Indonesia	3,989	4,527	3,701	3,960	2,491	3,298
Japan	81,351	86,793	84,770	76,626	60,446	60,210
Korea, South	10,400	9,112	8,782	8,140	7,926	8,385
Malaysia	8,325	8,081	7,743	9,065	12,889	11,756
Philippines	4,278	7,062	5,663	6,599	7,488	7,717
Singapore	5,310	4,902	4,860	4,933	5,505	5,642
Taiwan	4,183	3,541	3,069	3,200	3,193	3,792
Thailand	3,495	4,093	4,389	5,211	4,075	5,447
Other Asia	1,620	2,209	2,442	3,034	3,573	2,892
<b>Total Asia</b>	<b>147,481</b>	<b>152,875</b>	<b>148,181</b>	<b>141,666</b>	<b>133,106</b>	<b>136,886</b>
<b>Middle East</b>						
Saudi Arabia	761	1,520	1,003	1,278	1,451	1,357
U.A.E.	1,492	1,577	1,474	1,254	1,150	1,067
Other Middle East	4,421	4,176	4,475	3,974	2,884	2,317
<b>Total Middle East</b>	<b>6,674</b>	<b>7,273</b>	<b>6,952</b>	<b>6,506</b>	<b>5,485</b>	<b>4,741</b>
<b>Africa</b>	<b>2,741</b>	<b>2,403</b>	<b>2,903</b>	<b>1,649</b>	<b>1,752</b>	<b>1,918</b>
<b>Pacific</b>						
New Zealand	3,434	4,059	3,489	3,516	3,491	4,664
Others	1,134	1,279	1,289	1,201	1,328	1,401
<b>Total Pacific</b>	<b>4,568</b>	<b>5,338</b>	<b>4,778</b>	<b>4,717</b>	<b>4,819</b>	<b>6,065</b>
<b>Americas</b>						
Caribbean	42	28	34	0	139	782
United States	4,745	1,944	1,709	1,323	5,551	2,804
Others	225	351	654	1,366	1,877	3,195
<b>Total Americas</b>	<b>5,012</b>	<b>2,323</b>	<b>2,397</b>	<b>2,689</b>	<b>7,567</b>	<b>6,781</b>
<b>Europe</b>	<b>203</b>	<b>605</b>	<b>633</b>	<b>380</b>	<b>698</b>	<b>169</b>
<b>Total</b>	<b>166,679</b>	<b>170,817</b>	<b>165,844</b>	<b>157,607</b>	<b>153,408</b>	<b>156,560</b>

Source: ABS



**Table A16** Australian exports of whole milk powder\* (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
<b>Asia</b>						
Bangladesh	4,814	5,663	4,211	716	5,184	1,571
China, Hong Kong	32,990	47,084	28,330	28,976	29,146	24,021
Indonesia	917	299	312	154	365	6,265
Japan	2	1	80	8	9	950
Malaysia	2,978	1,227	878	535	2,734	2,175
Philippines	396	275	111	7	172	48
Singapore	8,933	4,990	3,554	3,511	3,474	3,616
Sri Lanka	10,547	407	3,139	1,638	2,047	233
Taiwan	1,955	2,197	2,061	1,398	1,076	1,162
Thailand	3,617	9,000	5,563	5,658	4,891	11,154
Others	10,008	2,708	1,269	1,574	2,931	3,322
<b>Total Asia</b>	<b>77,157</b>	<b>73,851</b>	<b>49,508</b>	<b>44,175</b>	<b>52,029</b>	<b>54,517</b>
<b>Africa</b>	<b>243</b>	<b>5,557</b>	<b>67</b>	<b>13</b>	<b>172</b>	<b>668</b>
<b>Americas</b>	<b>3,063</b>	<b>1,315</b>	<b>1,324</b>	<b>491</b>	<b>217</b>	<b>618</b>
<b>Europe</b>	<b>104</b>	<b>200</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Middle East</b>	<b>4,158</b>	<b>4,467</b>	<b>1,953</b>	<b>846</b>	<b>636</b>	<b>5,973</b>
<b>Pacific</b>	<b>2,082</b>	<b>2,170</b>	<b>1,860</b>	<b>1,032</b>	<b>1,125</b>	<b>1,095</b>
<b>Total</b>	<b>86,807</b>	<b>87,560</b>	<b>54,712</b>	<b>46,557</b>	<b>54,179</b>	<b>62,871</b>

\*Also includes infant powder

Source: ABS

**Table A17** Australian exports of butter\* (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
<b>Asia</b>						
China, Hong Kong	3,130	2,758	3,714	2,386	7,009	5,088
Japan	381	236	507	175	177	696
Korea, South	1,531	470	932	574	910	2,892
Malaysia	2,048	1,662	1,809	1,206	1,483	1,227
Singapore	2,611	1,666	1,418	1,275	1,893	1,908
Taiwan	1,124	712	992	868	926	975
Others	963	762	732	961	1,052	1,077
<b>Total Asia</b>	<b>11,789</b>	<b>8,266</b>	<b>10,104</b>	<b>7,445</b>	<b>13,450</b>	<b>13,863</b>
<b>Middle East</b>	<b>1,002</b>	<b>695</b>	<b>115</b>	<b>1</b>	<b>1,332</b>	<b>833</b>
<b>Africa</b>	<b>306</b>	<b>217</b>	<b>211</b>	<b>152</b>	<b>1,030</b>	<b>229</b>
<b>Pacific</b>	<b>847</b>	<b>264</b>	<b>215</b>	<b>108</b>	<b>236</b>	<b>183</b>
<b>Americas</b>	<b>270</b>	<b>277</b>	<b>2,519</b>	<b>320</b>	<b>1,230</b>	<b>666</b>
<b>Europe</b>	<b>196</b>	<b>2</b>	<b>20</b>	<b>20</b>	<b>200</b>	<b>50</b>
<b>Total</b>	<b>14,410</b>	<b>9,721</b>	<b>13,184</b>	<b>8,046</b>	<b>17,478</b>	<b>15,824</b>

\*Includes butter blends converted at the rate of 1kg butter blend = 0.7kg butter

Source: ABS

**Table A18** Australian exports of skim milk powder (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
<b>Asia</b>						
China, Hong Kong	23,930	30,311	43,354	32,460	56,817	62,150
Indonesia	36,430	33,828	32,352	24,698	23,508	30,340
Japan	3,110	8,287	4,973	3,019	2,201	793
Malaysia	18,880	13,368	9,139	2,825	3,158	5,537
Philippines	8,612	8,403	5,026	7,864	3,335	4,227
Singapore	14,571	11,573	9,636	6,068	4,851	7,674
Taiwan	1,536	1,900	1,404	1,950	1,763	986
Thailand	6,728	10,882	9,261	8,550	5,171	7,839
Others	22,201	19,077	21,526	7,142	11,531	13,206
<b>Total Asia</b>	<b>135,998</b>	<b>137,629</b>	<b>136,671</b>	<b>94,576</b>	<b>112,335</b>	<b>132,752</b>
<b>Africa</b>	<b>1,428</b>	<b>5,761</b>	<b>236</b>	<b>25</b>	<b>150</b>	<b>175</b>
<b>Americas</b>	<b>47</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>Europe</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>
<b>Middle East</b>	<b>14,057</b>	<b>11,630</b>	<b>12,559</b>	<b>11,140</b>	<b>9,944</b>	<b>14,147</b>
<b>Pacific</b>	<b>1,775</b>	<b>1,586</b>	<b>1,737</b>	<b>1,901</b>	<b>478</b>	<b>1,850</b>
<b>Total</b>	<b>153,305</b>	<b>156,606</b>	<b>151,203</b>	<b>107,642</b>	<b>122,912</b>	<b>148,931</b>

Source: ABS

**Table A19** Australian exports of butteroil (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
<b>Asia</b>						
Bangladesh	151	101	151	0	34	17
Indonesia	84	67	118	0	0	39
Malaysia	554	823	50	134	370	252
Philippines	134	286	84	185	1,077	67
Singapore	193	101	28	0	134	102
Others	3149	3112	4,297	2,268	2,505	2,476
<b>Total Asia</b>	<b>4,265</b>	<b>4,490</b>	<b>4,728</b>	<b>2,587</b>	<b>4,120</b>	<b>2,953</b>
<b>Middle East</b>	<b>101</b>	<b>0</b>	<b>101</b>	<b>18</b>	<b>0</b>	<b>941</b>
<b>Africa</b>	<b>66</b>	<b>32</b>	<b>44</b>	<b>0</b>	<b>298</b>	<b>252</b>
<b>Americas</b>	<b>671</b>	<b>287</b>	<b>1,155</b>	<b>262</b>	<b>722</b>	<b>948</b>
<b>Europe</b>	<b>436</b>	<b>303</b>	<b>314</b>	<b>197</b>	<b>603</b>	<b>240</b>
<b>Pacific</b>	<b>11</b>	<b>4</b>	<b>171</b>	<b>1</b>	<b>54</b>	<b>78</b>
<b>Total</b>	<b>5,550</b>	<b>5,116</b>	<b>6,513</b>	<b>3,065</b>	<b>5,797</b>	<b>5,412</b>

Actual product weight (not CBE)

Source: ABS

**Table A20** Australian exports of liquid milk ('000 litres)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
<b>Asia</b>						
Singapore	40,101	42,538	42,074	48,420	46,808	51,408
Philippines	13,703	19,329	17,763	16,637	19,871	24,558
Malaysia	15,680	19,753	22,362	26,995	23,428	20,881
Indonesia	310	241	144	152	295	311
Hong Kong	14,665	15,297	17,367	14,955	15,034	13,641
China	68,087	82,304	94,146	90,301	126,087	129,657*
Other Asia	18,802	21,004	23,273	27,328	28,148	29,197
<b>Total Asia</b>	<b>171,348</b>	<b>200,466</b>	<b>217,129</b>	<b>224,788</b>	<b>259,671</b>	<b>269,653</b>
<b>Africa</b>	<b>593</b>	<b>487</b>	<b>519</b>	<b>425</b>	<b>95</b>	<b>344</b>
<b>Pacific</b>	<b>15,617</b>	<b>16,008</b>	<b>17,931</b>	<b>18,795</b>	<b>14,581</b>	<b>14,342</b>
<b>Others</b>	<b>1,036</b>	<b>334</b>	<b>219</b>	<b>99</b>	<b>298</b>	<b>145</b>
<b>Total</b>	<b>188,594</b>	<b>217,295</b>	<b>235,798</b>	<b>244,107</b>	<b>274,645</b>	<b>284,484</b>

\*Dairy Australia estimate  
Source: ABS

**Table A21** Australian exports of whey products\* (tonnes)

	2016/17	2017/18	2018/19	2019/20	2020/21 (r)	2021/22 (p)
Asia	35,288	34,895	38,374	30,755	33,177	33,747
Europe	20	571	327	198	173	135
Other	3,501	2,535	3,123	3,294	2,329	1,618
<b>Total</b>	<b>38,809</b>	<b>38,001</b>	<b>41,824</b>	<b>34,247</b>	<b>35,679</b>	<b>35,500</b>

\*Includes whey protein concentrates  
Source: ABS

**Table A22** Australian exports of live dairy heifers (cows) by market

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 (p)
<b>Asia</b>						
China	59,109	28,412	74,963	77,210	86,228	93,216
Indonesia	1,203	4,118	1,933	1,746	338	2,193
Japan	437	2,936	2,193	1,657	350	0
Malaysia	1,346	2,201	3,002	2,403	3,267	2,836
Pakistan	6,502	5,620	2,428	4,860	0	0
Taiwan	1,793	1,813	1,827	434	0	0
Vietnam	1,735	958	231	0	0	4
Other Asia	289	531	467	3,136	200	215
<b>Total Asia</b>	<b>72,414</b>	<b>46,589</b>	<b>87,044</b>	<b>91,446</b>	<b>90,383</b>	<b>98,464</b>
Middle East	633	275	5,303	2,837	0	0
Others	4	15	0	0	340	0
<b>Total</b>	<b>73,051</b>	<b>46,879</b>	<b>92,347</b>	<b>94,283</b>	<b>90,723</b>	<b>98,464</b>

Source: ABS

**Table A23** Australian exports of live dairy heifers (cows) by state

	NSW	Vic	Qld	SA	WA	Tas	Aust
2010/11	219	61,817	978	0	12,081	103	<b>75,198</b>
2011/12	806	57,926	304	3,130	2,656	454	<b>65,276</b>
2012/13	305	69,359	620	2,282	12,188	2,668	<b>87,422</b>
2013/14	0	89,640	1,171	4	1,525	0	<b>92,340</b>
2014/15	910	64,638	122	0	7,535	0	<b>73,205</b>
2015/16	242	69,486	0	230	1,949	0	<b>71,907</b>
2016/17	647	70,395	240	0	1,769	0	<b>73,051</b>
2017/18	1,612	43,258	345	48	1,616	0	<b>46,879</b>
2018/19	719	90,869	459	24	276	0	<b>92,347</b>
2019/20	0	86,007	2,660	0	5,616	0	<b>94,283</b>
2020/21	92	89,612	340	0	679	0	<b>90,723</b>
2021/22 (p)	4	91,679	3,813	0	2,968	0	<b>98,464</b>

Source: ABS

## Appendix 9 Australian imports

**Table A24** Australian imports of dairy products from New Zealand and other countries (tonnes)

	New Zealand	Other	Total 2020/21 (r)	New Zealand	Other	Total 2021/22 (p)
Skim milk powder	10,154	4,444	14,598	7,584	5,419	13,003
Buttermilk powder	169	1,927	2,096	1,249	2,511	3,760
Whole milk powder*	45,438	12,493	57,931	48,797	9,107	57,904
Whey powder and concentrates	676	11,793	12,469	906	8,712	9,618
Condensed milk	350	9,751	10,101	6	14,221	14,227
Milk	1,371	198	1,569	1,463	332	1,795
Cream	3,242	283	3,525	2,808	205	3,013
Yoghurt	417	919	1,336	289	841	1,130
Butter**	26,798	4,469	31,267	22,587	4,514	27,101
Butteroil	4,313	1,451	5,764	6,280	1,246	7,526
Cheese***	42,110	52,514	94,624	35,941	56,613	92,554
Casein	348	439	787	714	292	1,006
Caseinates	1,135	572	1,707	1,187	428	1,615
Lactose	1,199	12,589	13,788	1,115	12,007	13,122
Ice cream ('000 lts)	1,534	22,414	23,948	2,685	19,457	22,142
<b>Total Imports</b>	<b>139,254</b>	<b>136,256</b>	<b>275,509</b>	<b>133,613</b>	<b>135,905</b>	<b>269,518</b>

\*Includes infant powder \*\*Includes butter blends converted at the rate of 1kg butter blend = 0.7kg butter

\*\*\*Excludes goats cheese (Tariff code: 0406901040)

Source: ABS

**Table A25** Australian cheese imports by country (tonnes)

	2016/17 (r)	2017/18 (r)	2018/19 (r)	2019/20 (r)	2020/21 (r)	2021/22 (p)
Austria	600	640	893	540	537	482
Bulgaria	1,091	1,141	738	964	970	768
Denmark	1,568	1,821	1,834	1,955	2,464	2,183
France	1,671	2,022	1,846	1,845	1,856	2,333
Germany	2,477	2,356	2,398	2,715	2,703	2,567
Greece	1,973	1,921	2,077	2,147	2,544	2,236
Italy	4,790	4,774	4,889	5,107	5,318	5,451
Netherlands	2,812	2,704	3,234	3,096	3,704	3,662
Poland	840	1,126	1,070	1,128	1,122	892
Other	3,152	3,759	3,364	3,982	3,767	4,365
<b>Total EU</b>	<b>20,974</b>	<b>22,264</b>	<b>22,343</b>	<b>23,479</b>	<b>24,985</b>	<b>24,939</b>
<b>New Zealand</b>	<b>65,723</b>	<b>56,571</b>	<b>42,734</b>	<b>44,131</b>	<b>42,110</b>	<b>35,941</b>
<b>United States</b>	<b>20,987</b>	<b>28,113</b>	<b>24,475</b>	<b>25,330</b>	<b>24,713</b>	<b>28,978</b>
<b>Norway</b>	<b>1,090</b>	<b>916</b>	<b>1,264</b>	<b>1,085</b>	<b>588</b>	<b>253</b>
<b>Switzerland</b>	<b>210</b>	<b>232</b>	<b>244</b>	<b>207</b>	<b>248</b>	<b>323</b>
<b>United Kingdom</b>	<b>1,422</b>	<b>1,024</b>	<b>1,313</b>	<b>1,281</b>	<b>1,706</b>	<b>1,867</b>
<b>Other</b>	<b>272</b>	<b>286</b>	<b>313</b>	<b>406</b>	<b>274</b>	<b>254</b>
<b>Total Cheese Imports</b>	<b>110,678</b>	<b>109,406</b>	<b>92,688</b>	<b>95,918</b>	<b>94,624</b>	<b>92,554</b>

Source: ABS (excludes goats cheese: tariff code 0406901040)

# ACRONYMS

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
ADC	Australian Dairy Corporation
ADF	Australian Dairy Farmers Ltd
ADHIS	Australian Dairy Herd Improvement Service
ADIC	Australian Dairy Industry Council Inc.
ADPF	Australian Dairy Products Federation Inc.
AEST	Australian Eastern Standard Time
AHA	Animal Health Australia
AMF	Anhydrous milk fat
Aust	Australia
BMP	Buttermilk powder
CAGR	Compound annual growth rate
CBE	Commercial butter equivalent, a unit of conversion of AMF to butter (1kg butter = 0.805kg AMF)
CER	The Closer Economic Relations Agreement between NZ and Australia
DA	Dairy Australia
DFMP	Dairy Farm Monitor Project
(e)	Estimated data
EU	European Union

ML	Million litres
NSW	New South Wales
NT	Northern Territory
NZ	New Zealand
(p)	Provisional data
QDAS	Queensland Dairy Accounting Scheme
Qld	Queensland
(r)	Revised data
SA	South Australia
SMP	Skim milk powder
SNF	Solids non fat
Tas	Tasmania
U.A.E	United Arab Emirates
UHT	Milk subjected to ultra-high temperature treatment to extend shelf life
UK	United Kingdom
US	United States
USD	US dollar
Vic	Victoria
WA	Western Australia
WMP	Whole milk powder
WPC	Whey protein concentrate

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