AUSTRALIAN PROCESSING TOMATO RESEARCH COUNCIL Inc.

ANNUAL INDUSTRY SURVEY

2023

Contents

1 Executive Summary

The annual industry survey provides a year-on-year comparison, detailing industry performance in the current year compared with the previous one.

The data also tells the 'story' of Australian production and international trade over a longer period of time, supporting analysis of where the industry is headed, for example in terms of grower numbers, production, and location.

The 2022/23 season presented significant and unique challenges with major flooding and widespread rain affecting both the total area planted and the total yield delivered. The planted area in 2022/23 was below original forecasts due to flooding and weather delays that occurred prior to or during typical field preparation timeframes.

During the 2022/2023 season, twelve growers produced 110,621 tonnes of processing tomatoes, a significant decrease on the volume grown in 2021/22, and the crop was again processed by three companies.

Some 1733 hectares were planted, with total use of sub-surface drip irrigation. The use of transplants was significantly high at 94% of the total area under production, with seeded tomatoes making up the remaining 6%.

In 2022/23, the Australian processing tomato industry achieved an average yield/ha of 67.9 tonnes and 95% of planted area was harvested

Soluble solids averaged 5.3%, which is the highest average in over 10 years. However, this is likely due to the fact that crop yields were down and what we're observing is the typical inverse relationship between yields and solids.

On the international scene, imports and exports are reviewed and discussed in the context of the previous calendar year (2022), not the abovementioned processing season (2022/23).

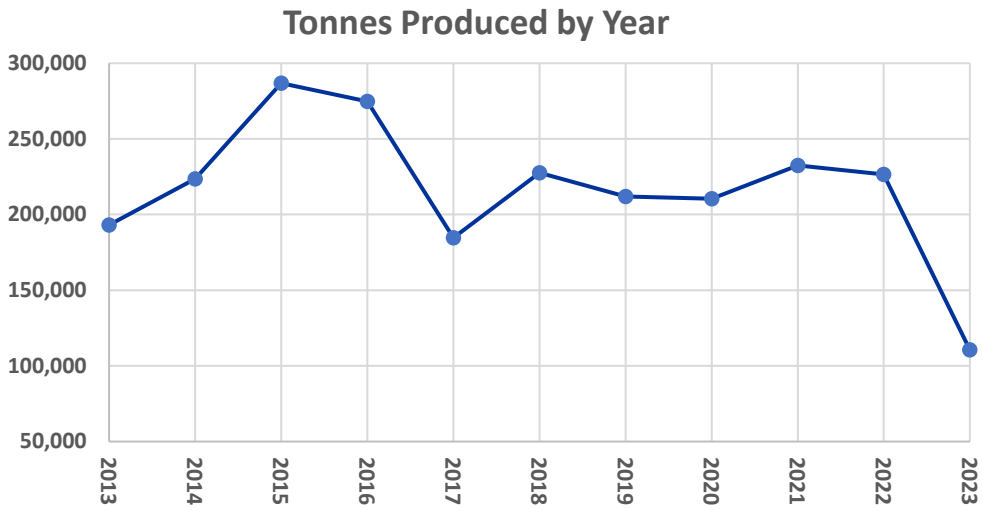
The importation of processed tomato products into Australia increased during the 2022 calendar year, continuing a slow but clear trend upwards. Exports of Australian processed tomatoes on the other hand dropped by a significant figure of 36% in 2022. This export figure won't likely improve for another year or two given the lower than ideal harvest from the 2022/23 season.

Total Australian domestic consumption increased in 2022, however it was supplied by imports rather than local product. An ideal situation would be to see increased consumption being also supplied by a higher proportion of domestic production.

Australian domestic per capita consumption increased again, and Australia remains one of the highest consumers of tomato products per capita in the world.

2 Industry Size

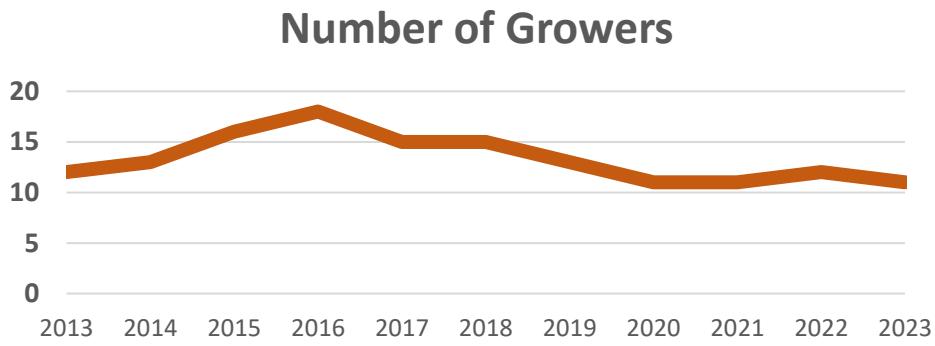
2.1 Volume



2.1.1 Paid tomato volumes delivered (tonnes) (APTRC)

Growers produced 110,621 tonnes of processing tomatoes during the 2022/23 season, with the bulk of demand coming from the two major processing operations in Australia. Contained in the total production figures are organically grown tomatoes, which contributed 282 tonnes of produce (a significant decrease on the previous season).

2.2 Producers



2.2.1 Number of growers (APTRC)

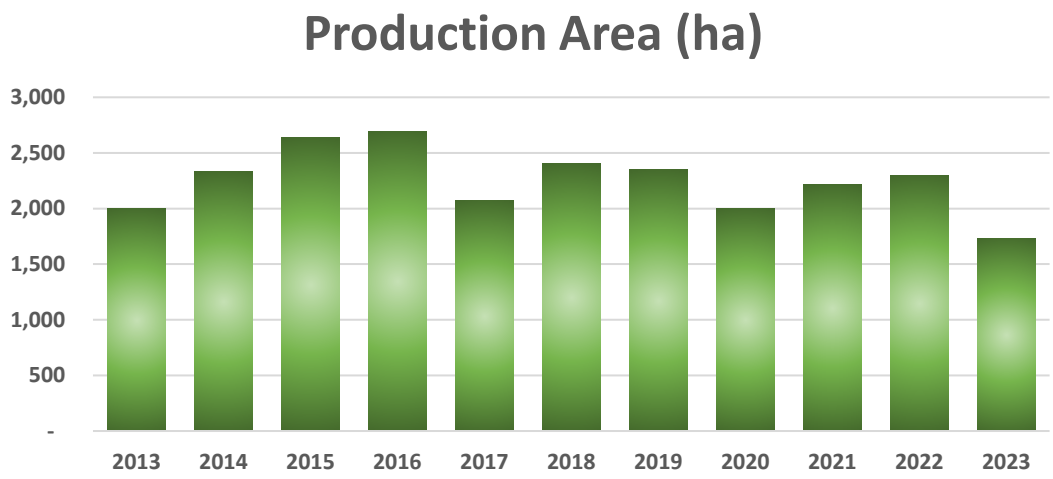
The grower number fell to 11 specialist businesses for the 2022/23 processing tomato season, spread mainly across Northern Victoria, with a lesser number growing in Southern NSW.

2.3 Processors

As in the previous season, the entire crop was processed by three organisations, with Kagome processing 81.5%, SPC 14.3% and Billabong Produce 4.2%.

3 The Crop

3.1 Area and management



3.1.1 Planted production area (ha) (APTRC)

The area under production decreased to 1733 hectares, of which 95% was harvested. The smaller area planted (or successfully established) this season was a direct result of the effects of excess rainfall and flooding early in the season.

Season		Transplanted	Seeded
2010/11		79%	21%
2011/12		81%	19%
2011/13		72%	28%
2013/14		59%	41%
2014/15		68%	32%
2015/16		69%	31%
2016/17		86%	14%
2017/18		88%	12%
2018/19		91%	9%
2019/20		86%	14%
2020/21		90%	10%
2021/22		85%	15%
2022/23		94%	6%

3.1.2 Proportions of transplants Vs seed by area grown (APTRC)

This season, the crop was again fully grown under sub-surface drip irrigation, which is likely to remain the status quo for the Australian industry.

There was a decrease in the proportion of direct seeded crop grown this season. This was due to a crop being wiped out by floods and also because of one grower exiting the industry entirely and another grower opting to step out for just this past season. The Boort region is still the only area direct-seeded and represented 6% of the total industry by area in 2022/23.

Area and Production by State	VIC	NSW
Area Planted	65%	35%
Tomato Volume Processed	65%	35%

3.1.3 Production by State (APTRC)

In the 2022/23 season, the relative planted area (%) and production amount (%) by state aligned perfectly. This suggests that the area planted and yield per hectare from those areas is relatively stable (on the average at least) across not just states, but different water, soil and climatic conditions.

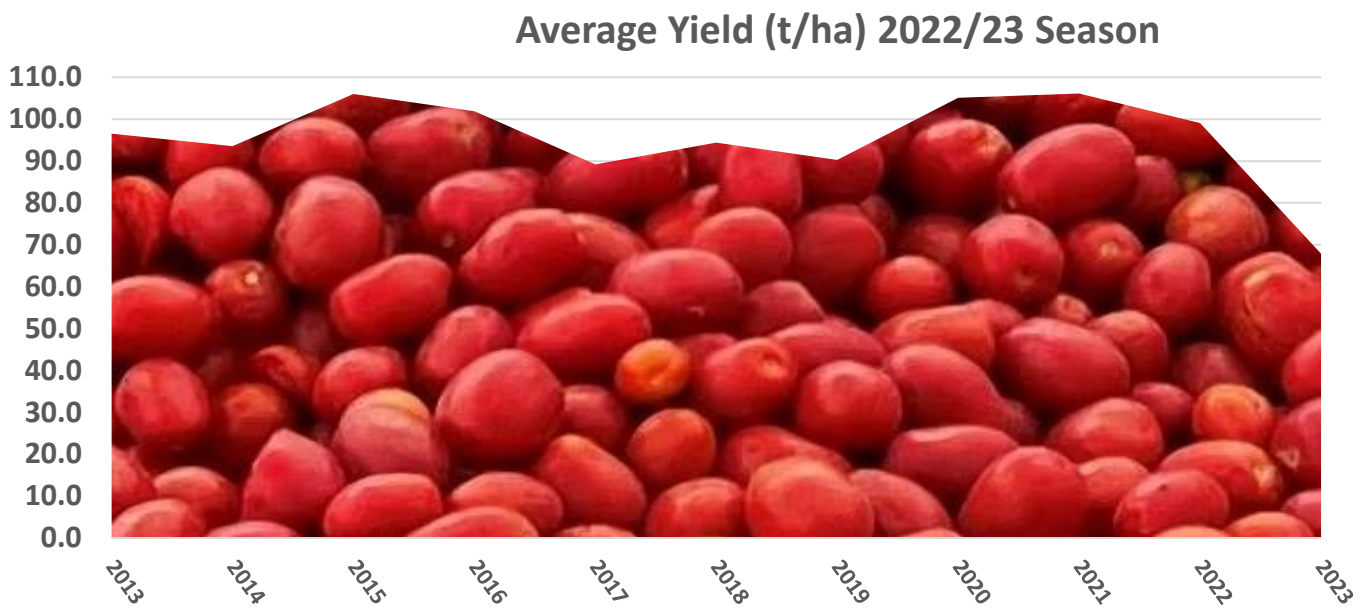
3.2 Yield

Season	Area (Ha) PLANTED	Area (Ha) PROCESSED	Area % HARVESTED	Average Yield MT/ha	Major Seasonal Challenges
2012/13	1999	1998	100%	96.6	Wet, late harvest
2013/14	2386	2330	98%	93.6	Wet, late harvest
2014/15	2700	2635	98%	106.1	Early crop failure
2015/16	2782	2697	97%	101.9	Poor crop stand, delayed harvest, over-contract fruit
2016/17	2183	2071	95%	89.2	Delayed harvest due to rain
2017/18	2457	2407	98%	94.4	Abandoned due to factory power outage and resulting delay
2018/19	2347	2347	100%	90.3	Extreme bacterial speck, high temperatures
2019/20	2073	2003	97%	105.1	Hot and windy during growing; late harvest rains
2020/21	2215	2215	100%	106.13	Dry start, strong winds mid spring, some hail, mild summer
2021/22	2480	2300	93%	99.1	Delays from staff scarcity and crops abandoned due to wet finish
2022/23	1733	1643	95%	67.9	Excess early rainfall & flooding caused planting delays and losses.

3.2.1 Average yield, harvest conditions (MT/ha) (APTRC)

The excess early rainfall and flooding events hampered efforts to adequately prepare fields for planting. Also, the flooding completely wiped out 75 ha of early production in the Boort region and later, 15.5 ha was ploughed in after poor early performance due to adverse weather conditions in the North Central region.

The 2022/23 season saw a significant decrease in yield average, resulting mostly from growers having inadequate time to prepare fields to their usual high standards; from planting outside of the ideal timeline; and from poor weather conditions, including severe hail and wind events and persistent low temperatures.



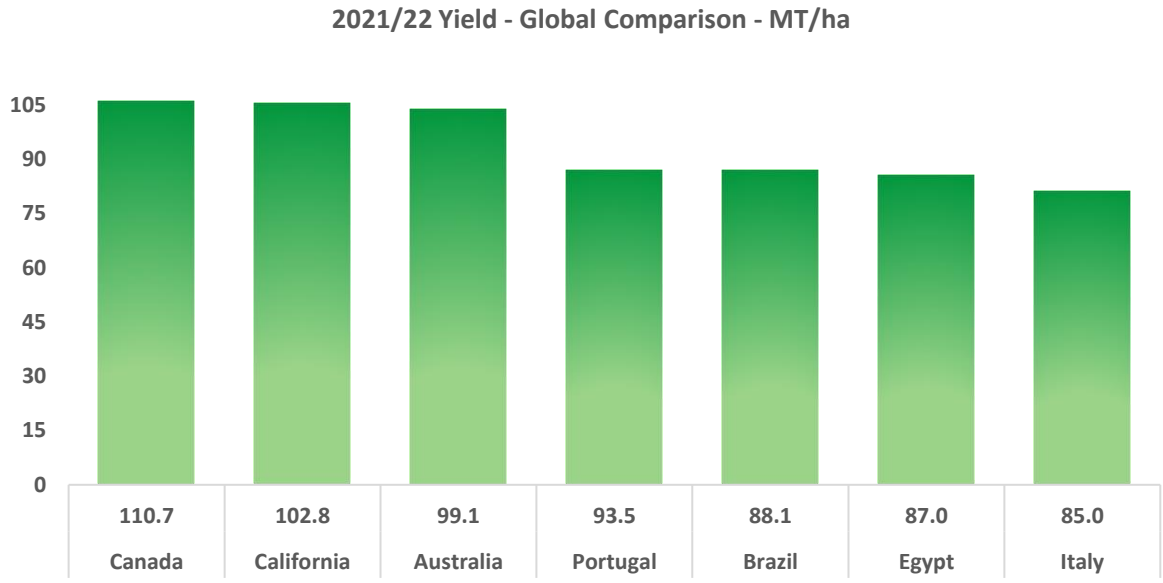
3.2.2 Average yield (t/ha) (APTRC)

The industry recorded an average yield of only 67.9 tonnes per ha for season 2022/23, which by global standards is a lower than ideal outcome. However given the extreme constraints of the season, the figure is quite explainable.

The industry had to adapt to the season by planting many weeks outside the usual schedule, by working intensely with nurseries to alter transplant orders and by trialling alternate soil preparation methods for planting.

The major grower last year, Kagome Farms even utilised their knowledge in growing other processing crops in sand under a combination of pivot and drip irrigation to achieve whatever tonnes they could late in the season to help satisfy buyer demand. Planting on sand may now become a standard practice for a portion of the crop in future to help mitigate risk and widen the planting/harvest window for industry.

Additionally, the ongoing annual industry cultivar evaluation trials and research into root disease are some of the current actions the APTRC and the Australian processing tomato industry are undertaking to help achieve higher yield outcomes under adverse climatic conditions.

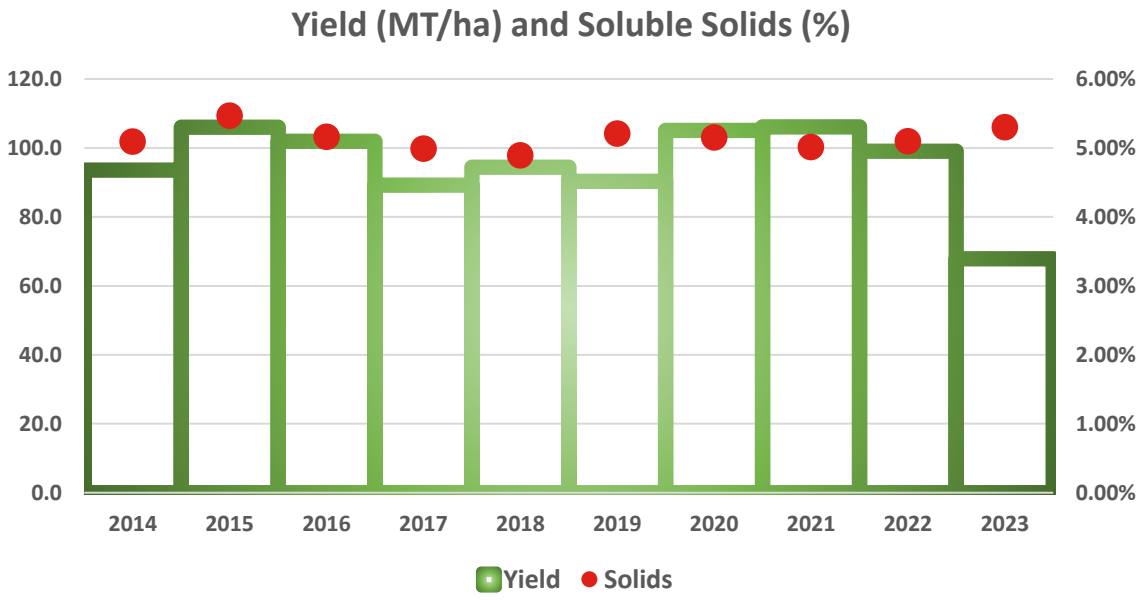


3.2.3 2022 average yield (MT/ha), by country (Colvine)

Note: To get the most accurate global comparison, data for international production is a season behind and in this report, represents the previous season (2021/2022). This is due to the offset availability of data from the Northern Hemisphere.

In the 2022 processing year, Australia achieved an average yield of 99.1 tonnes per ha. This result is slightly lower than ideal and was due primarily to delayed harvests. The causal factors for this were in the first instance, stilted processing operations and harvesting complications from a lack of available staff due to carry-over affect from the pandemic. In the second instance, rainfall from mid-April onwards further delayed harvest operations and ultimately left 180 ha of crop in the field.

3.3 Soluble Solids



3.3.1 Soluble solids (%) and yield (t/ha) (APTRC)

Average soluble solids for the season were 5.3%, which is well above the minimum benchmark of 5.0% preferred by processors. The past decade of results shows that the minimum soluble solids benchmark is being met (or very close to it) every season.

3.4 Cultivar

CULTIVARS	Percentage of Total Area Grown	
	2022/23	*2021/22*
H3402	24.3%	*35.0%*
H1015	18.4%	*8.2%*
H1014	14.4%	*4.6%*
UG19406/UG16112	12.4%	*16.1%*
H1301	7.8%	*2.1%*
H1311	5.8%	*2.5%*
UG4014	5.4%	*4.0%*
SVTM9000	4.7%	*3.1%*
UG16112	2.5%	*1.0%*
SVTM9024	2.0%	*3.3%*
H3402mix	0.9%	*7.6%*
H3406	0.6%	*1.5%*
H1311mix	0.4%	*8.1%*
HM58811	0.3%	*0.2%*

3.4.1 Cultivar by proportion of total area

When comparing the 2021/22 and 2022/23 seasons, there were some significant shifts in the balance of cultivars grown by area. Many factors influence the mix of cultivars grown from season to season including changing customer requirements, upgrading of processing infrastructure, new market access or loss of previous markets, seasonal harvesting logistics and agronomic suitability to growing region and soil type.

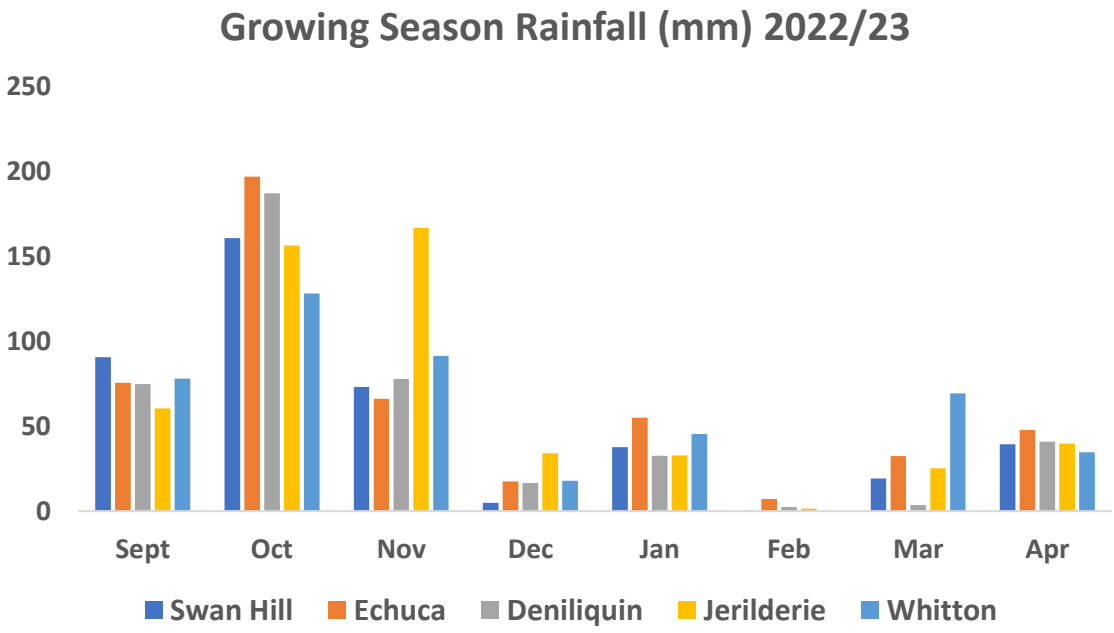
The trend away from the blending of cultivars in-field to obtain a desirable processing outcome is a noticeable progression in industry, with the introduction of alternative processing techniques making the mixing of cultivars less important.

There were no new cultivars commercially grown this past season either, which given the extreme challenges is not surprising.

The APTRC are hoping to re-establish the normal cultivar evaluation program this coming season and explore cultivars with improved genetic resistances to soil and foliar diseases.

4 The Season

4.1 Rainfall

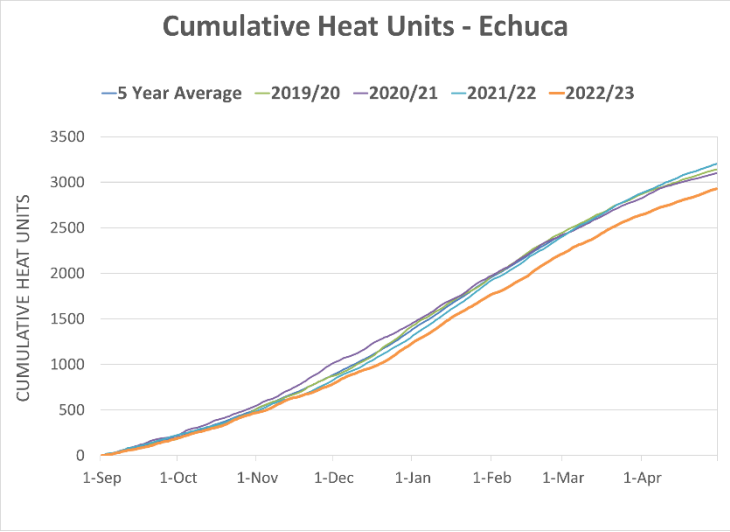


4.1.1 Rainfall across the major growing regions (mm) (BOM)

As seen in the above chart, for most regions, rainfall was extreme for the start of the season, particularly in October 2022 and as such planting and sowing operations were severely compromised. Planting is usually completed prior to December, however in the 2022/23 season, planting continued well into January 2023!

A few crops suffered hail damage early, which was highly unfortunate for those growers in the path of these storm events and led to some crop being ploughed in. Thankfully, the rainfall was more moderate for the rest of the season, allowing a relatively smooth (but late) harvest period.

4.2 Heat Units



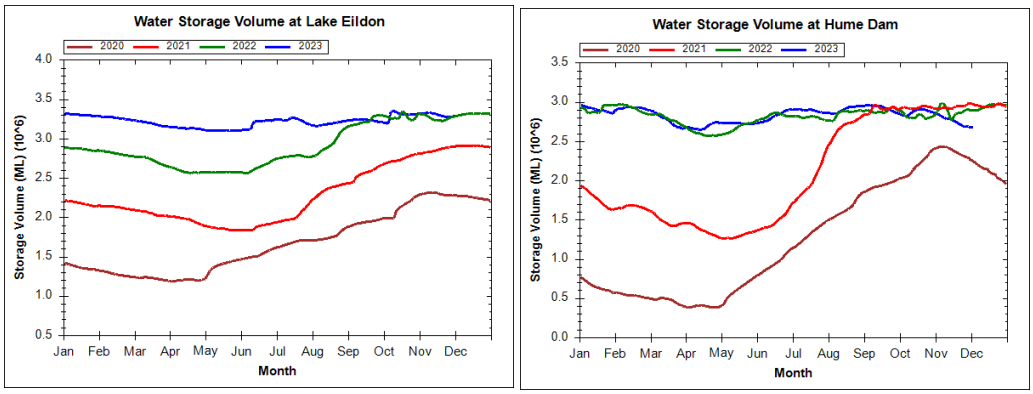
4.2.1 Heat units – Echuca (BOM)

The heat units recorded during the major crop growth period demonstrate that the season was cumulatively much cooler than the previous 5-year average and the most recent season.

This cool weather severely hampered growth in young transplants and most crops never achieved their full potential.

Although this graph uses data from Echuca, it's a central point for industry and can be generally considered indicative of what was experienced by growers in surrounding regions.

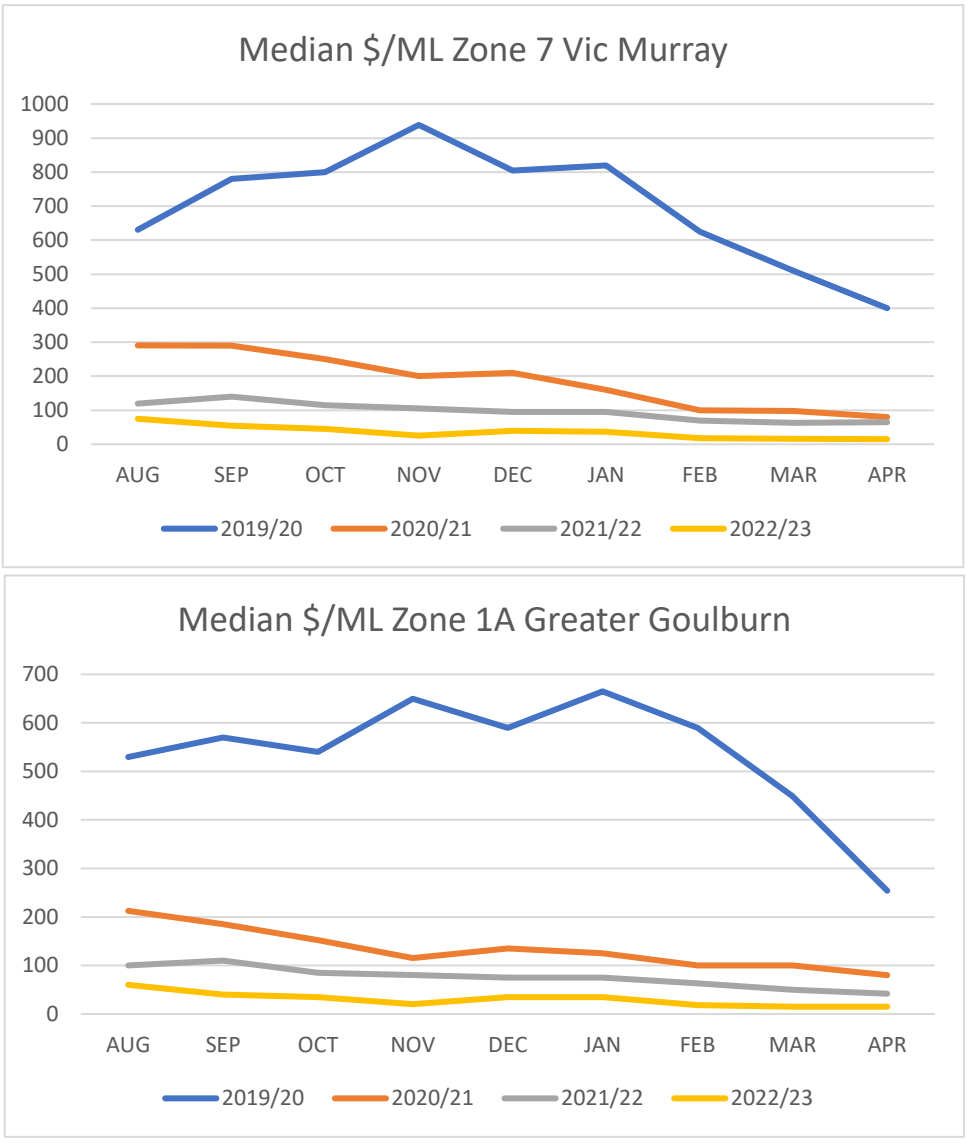
4.3 Water Storages



4.3.1 Storage Volume, Lake Eildon and Hume Dam (GMW)

The water storage levels across all catchments have remained high or increased significantly throughout the calendar year due to high inflows from last season's persistent La Niña climate conditions. The cost of water will be moderate to low throughout the 2022/23 growing season and due to the quantum of water in storages, availability should be relatively stable for at least the next season.

4.4 Water Price



4.4.1 Zone 1A and Zone 7 median water price ($/ML) (Registry)

The price of water during 2022/23 remained low and the price of water could be seen as a direct reflection of higher allocations and inflows into major water storages for Victoria and NSW during this period.

Water prices are predicted to remain supressed for at least another season.

5 Trade

5.1 Imports

Product	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Dried/powder	39,125	35,940	26,875	34,506	37,934	37,660	34,880	28,017	29,143	34,263
Whole/pcs <1.14L	48,060	42,660	45,222	40,965	43,354	42,683	41,799	51,121	36,356	45,488
Whole/pcs >1.14L	18,911	28,402	28,088	22,997	24,002	24,275	22,369	21,129	21,316	24,029
Paste/puree<1.14L	80,602	83,976	153,210	102,733	107,923	109,578	110,328	159,447	137,971	125,751
Paste/puree>1.14L	145,214	109,242	102,866	130,171	140,532	144,906	133,524	43,118	140,502	187,046
Juice	137	116	75	83	38	75	50	30	17	47
Sauce/ketchup	33,633	38,628	39,276	38,462	45,705	45,946	47,050	48,375	45,788	51,585
Total Tomato	**365,682**	**338,964**	**395,612**	**369,917**	**399,488**	**405,123**	**389,999**	**51,236**	**411,093**	**468,210**

5.1.1 Imports of Tomato Products (equivalent raw tonnes) (ABARES)

The volume of imports rose significantly during 2022, with increases in all import categories, except for small pack 'Paste/puree'. Imports for 2022were the highest in well over 10 years.

The largest sources of these imports, sorted by category were as follows (where the major importer supplied less than 90% of the total, the next most significant supplier/s are also included).

- **Dried/powder** – Turkey 57.13%, Israel 12.14%, New Zealand 11.18%
- **Whole/pcs <1.14L** – Italy 96.46%
- **Whole/pcs >1.14L** – Italy 97.61%,
- **Paste/puree<1.14L** – Italy 83.76%, China 12.51%
- **Paste/puree>1.14L** – USA 51.32%, China 24.11%, Italy 18.26%
- **Juice** – Mexico 29.18%, UK 28.06%, USA 20.59%
- **Sauce/ketchup** – Italy 40.83%, New Zealand 19.39%, China 11.37%

At 67% of total volume (last year 68%), Italy remains the dominant source of imported processed tomato products into Australia. The next largest suppliers were USA and China, supplying 12% and 10% respectively into Australia.

Product	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Dried/powder	5.92	6.33	7.01	6.18	6.39	6.44	6.25	6.85	5.97	6.05
Whole/pcs <1.14L	1.22	1.38	1.37	1.41	1.25	1.30	1.38	1.53	3.33	1.58
Whole/pcs >1.14L	1.02	1.18	1.16	1.06	1.01	1.08	1.10	1.10	2.27	1.24
Paste/puree<1.14L	1.38	1.61	1.60	1.56	1.44	1.41	1.54	1.73	1.70	1.75
Paste/puree>1.14L	1.06	1.24	1.49	1.32	1.23	1.28	1.36	1.44	1.32	1.47
Juice	1.12	1.45	1.80	1.02	2.70	2.00	2.05	3.40	3.65	2.85
Sauce/ketchup	1.76	1.93	2.01	2.01	1.99	1.99	2.09	2.41	2.37	2.22
Total Tomato	**1.33**	**1.51**	**1.54**	**1.52**	**1.44**	**1.47**	**1.56**	**1.70**	**2.33**	**1.70**

5.1.2 Average import prices ($/kg), in 2022 monetary values (ABARES)

5.2 Correlation between Imports and Price

- The overall price for imports during 2022 dropped significantly from the previous year's high of $2.33, to the same level as 2020 ($1.70/kg). However, despite this, the average price for Dried/powder and Paste/puree categories actually increased.

- The correlation across the past 10 years for Juice and price appears to be strengthening.

    - Juice exhibits a strong negative correlation, meaning as price goes down, imports go up.

- The correlation across the past 10 years for Sauce/ketchup and price appears to be only moderate.

    - Sauce/ketchup exhibits a moderate positive correlation, meaning as price goes down, imports go down.

- The correlations for imported product are quite varied and swing from moderately positive to moderately negative and deviate within different package sizes within category groups. Therefore, it suggests that overall, the variability in imported volumes does not appear to be strongly price driven for most categories (except for Juice).

5.3 Exports

Product	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Whole/pieces	1,075	2,552	746	461	133	62	139	623	273	417
Paste/puree	14,987	33,800	43,747	104,518	21,852	16,402	11,695	32,766	38,323	22,032
Sauce/ketchup	3,218	3,524	8,196	4,039	8,799	11,636	13,227	14,788	17,986	13,660
Juice	224	195	131	57	50	80	106	52	47	118
Total Tomato	**19,504**	**40,070**	**52,819**	**109,075**	**30,834**	**28,180**	**25,167**	**48,228**	**56,629**	**36,227**

5.3.1 Exports of tomato products (ABARES) (equivalent raw tonnes)

The overall volume of exports decreased substantially in 2022, most noticeably in the paste/puree and sauce/ketchup categories. Juice and whole/pieces categories increased; however, they represent a small portion of total exports.

The largest export markets, sorted by category and then by country were as follows:

- **Whole/pieces** – Philippines 33%, Thailand 10%, Papua New Guinea 10%

- **Paste/puree** – Japan 43%, Vietnam 28%, New Zealand 15%

- **Sauce/ketchup** – New Zealand 38%, Japan 33%, China 20%
- **Juice** – New Zealand 40%, Singapore 15%, Fiji 14%

At 35% of all products, Japan remains the major export destination for Australian processed tomato produce, with New Zealand close behind at 29% and China at 13% of total exports.

Product	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Whole/pieces	3.67	1.45	4.52	5.62	7.31	5.20	2.86	1.84	3.21	3.61
Paste/puree	1.55	1.54	1.41	1.09	1.30	1.54	1.96	2.46	2.30	2.46
Sauce/ketchup	3.05	2.88	2.84	2.99	2.13	2.18	2.22	2.55	2.19	2.25
Juice	1.35	1.36	1.41	1.76	1.24	1.89	1.14	1.17	1.08	1.19
Total Tomato	**2.25**	**1.65**	**1.95**	**1.30**	**1.73**	**1.88**	**2.03**	**2.34**	**2.12**	**2.35**

5.3.2 Average export prices ($/kg) (ABARES), in 2022 monetary values

The real price of exports increased slightly in 2022, which is beneficial for the Australian processing industry.

The data suggests a moderate negative correlation between average export price and volume exported, meaning that as price goes up, volume exported goes down. This applies to all product categories, except for Juice, which consistently appears to have no correlation to export price whatsoever.

It's worth noting that there is a moderate, but not a strong, negative correlation between export volumes and the USD exchange rates across the last 10 years, meaning that as exchange rates decrease, exports increase and vice versa. The fact that it is only a moderate correlation may suggest that exports from Australia aren't heavily dictated by exchange rates and that other market forces are having more influence on annual export opportunities.

5.4 Market Demand

Calendar Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	5 yr	10 yr
Dom. Demand	537,173	520,525	629,620	534,691	553,336	604,579	576,793	613,485	587,025	658,422	608,061	581,565
Imports	365,682	338,964	395,613	368,918	399,488	405,123	389,999	451,236	411,093	468,210	425,132	399,433
Net Australian	171,491	181,561	234,007	165,773	153,848	199,456	186,794	162,249	175,933	190,212	182,929	182,132
Imported %	68%	65%	63%	69%	72%	67%	68%	74%	70%	71%	70%	69%
Local %	32%	35%	37%	31%	28%	33%	32%	26%	30%	29%	30%	31%
Per capita (kgs)	**23**	**22**	**26**	**22**	**22**	**24**	**22**	**24**	**23**	**25**	**24**	**24**

5.4.1 Apparent domestic market demand (ABARES) (equivalent raw tonnes)

Table 5.4.1 represents the Australian market demand for processed tomato products and shows how this demand is being met from local or imported products.

For individual years, combining data can produce non-matched results; ABARES data is based on a calendar year, rather than a seasonal year, and this survey is unable to account for year-end stocks. However, these factors should tend to be mitigated when viewed over time, such as through the 5-year or 10-year averages.

Considering this data, the following may be noted:

- **Imports:** Imports decreased quite significantly in the 2021 calendar year but have since surged back to the highest levels in over 10 years.

- **Net Australian:** The net Australian figure was higher for the third year running and equates to tomatoes processed, less exports. This increase means that a greater volume of locally grown and processed product was used for domestic consumption than in the previous year.

- **Domestic Demand:** After a dip in domestic demand for 2021, the total demand for processed tomato products in Australia is at the highest level in over 10 years.

- **Imported %:** The imported percentage of processed tomato products stayed almost the same as 2021. Ideally, we would like to see the imports decrease, as more Australian produce meets local demand.

- **Local %:** The percentage of local product sold in the Australian market decreased only by 1% in 2022.

- **Per Capita kgs:** The average per capita consumption rose to 25 kilograms of equivalent raw tomatoes. This is a positive result and sits the 2022 consumption just slightly above the 5yr and 10yr averages.

6 Global Industry

6.1 Production

In 2022, the recorded global production totalled 38.449 million tonnes, compared to 39,184 million tonnes for the previous year; a decrease of 2%.

In 2022, Australia contributed 0.6% of global production and moved its ranking up one position to 17th for industry volume. This move in position however was only due the fact of Ukraine having a low production year, resulting from the current war.

Country	Season	2021	2022	2023E	% Change 2022-23E	Ranking 2022	% Total 2022
USA	Jul-Dec	10,223	9,964	11,920	20%	1	26.1%
China	Jul-Dec	4,800	6,200	8,000	29%	2	12.2%
Italy	Jul-Dec	6,059	5,476	5,400	-1%	3	15.5%
Turkey	Jul-Dec	2,200	2,350	2,700	15%	4	5.6%
Spain	Jul-Dec	3,185	2,125	2,600	22%	5	8.1%
Iran	Jul-Dec	1,300	1,800	2,000	11%	6	3.3%
Brazil	Jul-Dec	1,525	1,632	1,650	1%	7	3.9%
Portugal	Jul-Dec	1,596	1,414	1,500	6%	8	4.1%
Algeria	Jul-Dec	1,000	1200	1350	13%	9	2.6%
Chile	Jan-Jun	1,174	971	1150	18%	10	3.0%
Tunisia	Jul-Dec	940	649	675	4%	11	2.4%
Russia	Jul-Dec	523	638	660	3%	12	1.3%
Argentina	Jan-Jun	596	626	586	-6%	13	1.5%
Canada	July-Dec	399	548	530	-3%	14	1.0%
Egypt	Jul-Dec	440	456	600	32%	15	1.1%
Greece	Jul-Dec	420	340	390	15%	16	1.1%
Australia	**Jan-Jun**	**233**	**227**	**110**	-52%	**17**	**0.6%**
Dominican Republic	Jul-Dec	227	227	227	0%	18	0.6%
Israel	Jul-Dec	200	200	200	0%	19	0.5%
Poland	Jul-Dec	175	175	250	43%	20	0.4%
India	Jan-Jun	162	162	162	0%	21	0.4%
France	Jul-Dec	164	142	160	13%	22	0.4%
Peru	Jan-Jun	120	125	150	20%	23	0.3%
Ukraine	Jul-Dec	800	120	500	317%	24	2.0%
South Africa	Jan-Jun	125	120	160	33%	25	0.3%
Morocco	Jul-Dec	100	100	100	0%	26	0.3%
Hungary	Jul-Dec	115	80	110	38%	27	0.3%
Senegal	Jan-Jun	73	73	73	0%	28	0.2%
New Zealand	Jan-Jun	50	52	25	-52%	29	0.1%
Syria	Jul-Dec	40	40	40	0%	30	0.1%
Thailand	Jan-Jun	40	40	40	0%	31	0.1%
Mexico	Jan-Jun	40	40	40	0%	32	0.1%

Bulgaria	Jul-Dec	40	40	37	-8%	33	0.1%
Japan	Jul-Dec	28	27	26	-4%	34	0.1%
Czech Republic	Jul-Dec	25	25	25	0%	35	0.1%
Venezuela	Jan-Jun	20	20	20	0%	36	0.1%
Slovakia	Jul-Dec	20	20	20	0%	37	0.1%
Malta	Jul-Dec	7	5	8	60%	38	0.0%
Total		**39,184**	**38,449**	**44,194**	**15%**	38	100.0%

6.1.1 World Production by Country ('000 tonnes) (Colvine)

6.2 Outlook

- It is currently anticipated that production in Australia will increase significantly in 2023/24 (by 15% over the 2022/23 figure), due to large planting areas and favourable weather forecasts for major production regions. This is in part to make up for stock depletion due to the poor 2022/23 season, and equates to a preliminary estimate of 260,000 MT, which includes a small quantity of organic tomatoes.

7 References

ABARES. (n.d.). Australian Bureau of Agricultural and Resource Economics and Sciences.

APTRC. (n.d.). *Previous Survey Data.* Australian Processing Tomato Research Council.

https://aptrc.asn.au/info-for-industry

BOM. (n.d.). *Climate Summary Archive.* Bureau of Meterology.

http://www.bom.gov.au/climate/current/statement_archives.shtml

Branthôme, F.-X. (25/03/2022). *Consumption: 2021 in the wake of 2020.*Tomato News.

https://www.tomatonews.com/en/consumption-2021-in-the-wake-of-2020_2_1618.html

Colvine, S. (n.d.). World Processing Tomato Research Council.

GMW. (2022-23). *Storage Levels.* Goulburn Murray Water.

https://www.g-mwater.com.au/water-resources/catchments/storage-levels

Registry. (n.d.). *Allocation Trading History.* Victorian Water Registry.

https://www.waterregister.vic.gov.au/water-trading/allocation-trading

** n.d. denotes where 'no date' could be found for publishing.*