



Weekly Australian Climate, Water and Agricultural Update



No. 18/2021

13 May 2021

Summary of key issues

- During the week ending 12 May 2021, troughs, cold fronts and a low-pressure system resulted in moderate rainfall being recorded across parts of western and south-eastern Australia ([see Section 1.1](#)).
- The rainfall across cropping regions in New South Wales and Queensland is likely to benefit the establishment of early sown winter crops and encourage additional planting activity. Most cropping regions in northern Victoria and South Australia continued to receive little to no rainfall. Farmers in these areas are reportedly dry sowing crops. Rain will be needed soon in these areas to increase topsoil moisture and subsequently trigger more uniform winter crop germination and emergence.
- Oceanic and atmospheric indicators show that the El Niño-Southern Oscillation (ENSO) remains neutral and its influence on Australia's weather patterns continues to weaken. The combination of a neutral ENSO and a neutral Indian Ocean Dipole (IOD) suggest that changes in the Southern Annular Mode (SAM) are likely to drive climatic conditions in Australia during the remainder of autumn ([see Section 1.2](#)).
- There is a 50% chance of recording average or close to average June to August rainfall totals across most winter cropping regions. This forecast coupled with average to above average soil moisture levels in New South Wales, and parts of Queensland and Western Australia are likely to provide ideal conditions for growth of winter crops. Close to average winter rainfall in Victoria and South Australia are likely to be sufficient to support the germination and establishment of winter crops in those areas that have yet to record an autumn break ([see Section 1.3](#)).
- Over the next eight days, high-pressure systems are expected to keep the majority of Australia dry.
- In Australia's cropping regions, little to no rainfall is expected during the next 8 days. The dry forecast for the next 8 days will maintain near ideal conditions for wheat, barley, and canola planting and early development where soil moisture is adequate to support growth, and continued summer crop harvesting. Elsewhere, mostly dry weather in northern Victoria and South Australia favours fieldwork, including winter crop planting ([see Section 1.4](#)).
- Water storage in the Murray–Darling Basin (MDB) increased by 93 gigalitres (GL) between 4 May 2021 and 11 May 2021. The current volume of water held in storage is 14,048 GL, which represents 55% of total capacity. This is 48% or 4,564 GL more than at the same time last year.
- Allocation prices in the Victorian Murray below the Barmah Choke increased from \$95 per ML on 6 May 2021 to \$97 per ML on 12 May 2021. Prices are lower in the Murrumbidgee due to the restriction of Murrumbidgee exports to 6 GL.

1. Climate

1.1. Rainfall this week

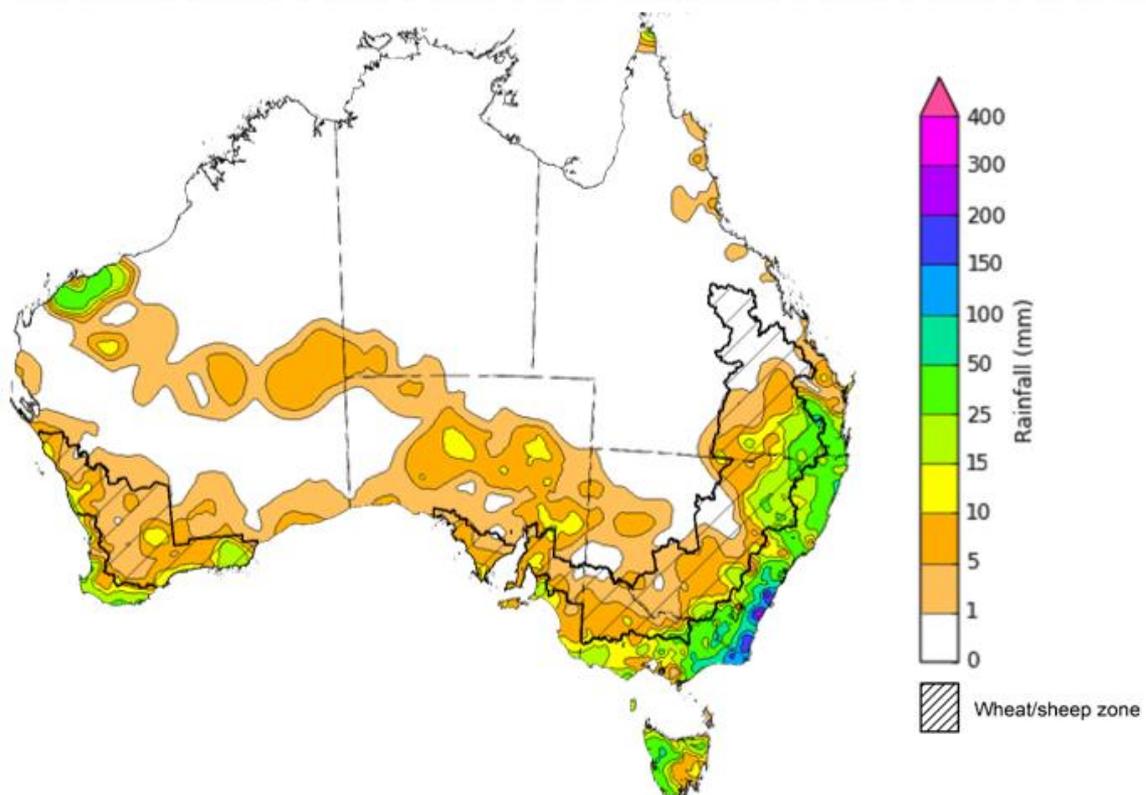
During the week ending 12 May 2021, troughs, cold fronts and a low-pressure system resulted in moderate rainfall being recorded across parts of western and south-eastern Australia.

Rainfall totals of between 5 and 25 millimetres were recorded across much of eastern New South Wales, south-eastern Queensland, Victoria, scattered areas of South Australia and Western Australia, and Tasmania. Rainfall totals in excess of 25 millimetres were recorded across parts of north-eastern and south-eastern New South Wales, the far south-east of Queensland, eastern Victoria, the north west of Western Australia and much of western Tasmania

In cropping regions, rainfall of between 5 and 15 millimetres was recorded across scattered areas of southern and northern New South Wales, southern Queensland, southern Victoria, northern and western Tasmania and scattered areas of South Australia and Western Australia. Rainfall of between 25 and 50 millimetres was recorded across parts of eastern New South Wales, south-east Queensland and southern Western Australia. Little to no rainfall was recorded across cropping regions in western New South Wales, northern Queensland, northern Victoria, the remainder of Western Australia.

In those parts of New South Wales and Queensland that recorded rainfall totals in excess of 10 millimetres, these falls will benefit the establishment for early sown winter crops and encourage addition planting activity. However most cropping regions in northern Victoria and South Australia continued to receive little to no rainfall. Although little rain has fallen here during the last 60 days, farmers reportedly have been dry sowing crops in these areas. It is important to note that rain will be needed soon in these areas to increase topsoil moisture and subsequently trigger more uniform winter crop germination and emergence.

Rainfall for the week ending 12 May 2021



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Note: The rainfall analyses and associated maps utilise data contained in the Bureau of Meteorology climate database, the Australian Data Archive for Meteorology (ADAM). The analyses are initially produced automatically from real-time data with limited quality control. They are intended to provide a general overview of rainfall across Australia as quickly as possible after the observations are received. For further information go to <http://www.bom.gov.au/climate/rainfall/>

1.2. Climate Drivers

Throughout autumn and early winter the climate drivers with the largest potential impact on Australia's climate patterns are the El Niño–Southern Oscillation (ENSO), the Indian Ocean Dipole (IOD) and the Southern Annular Mode (SAM). These climate drivers will likely influence the outlook for Australia's winter cropping season.

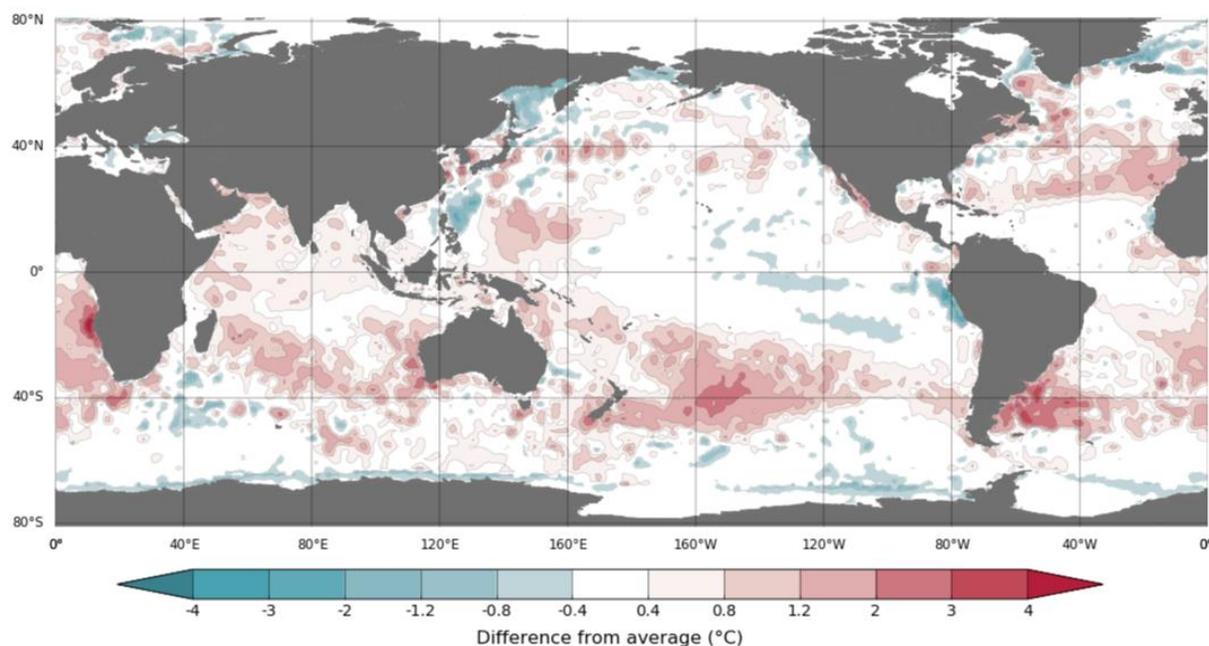
Analysis of oceanic and atmospheric indicators suggest that ENSO conditions remain neutral, reducing its influence on Australia's climate patterns. Analysis of sea surface temperatures in tropical Indian Ocean indicate that the IOD is also currently neutral.

A neutral ENSO and IOD means these climate drivers are unlikely to have much influence over Australia's climate over the short-term. If neutral ENSO and neutral IOD conditions persist into winter, the SAM will likely be the main influence on winter rainfall.

The SAM is currently positive and is expected to remain positive for the next week then decline towards neutral over the following week. At this time of year positive SAM can reduce rainfall over south-west Western Australia and south-eastern Australia, but enhance rainfall for western parts of the coastline of the Great Australian Bight, New South Wales, and southern Queensland.

Over the past two weeks, sea surface temperature anomalies have continued to weaken across the tropical Pacific Ocean. Below average sea surface temperatures in the eastern Pacific Ocean are associated with La Niña conditions, but a return to long-term average sea surface temperatures is associated with the return to a neutral ENSO. As of 12 May 2021, all of the international climate models surveyed predict sea surface temperatures in the tropical Pacific to remain neutral until at least October. Sea surface temperatures near Western Australia, Indonesia and the Philippines remain above average. The warm temperature anomalies in the eastern Indian Ocean have remained largely unchanged over the past couple of weeks.

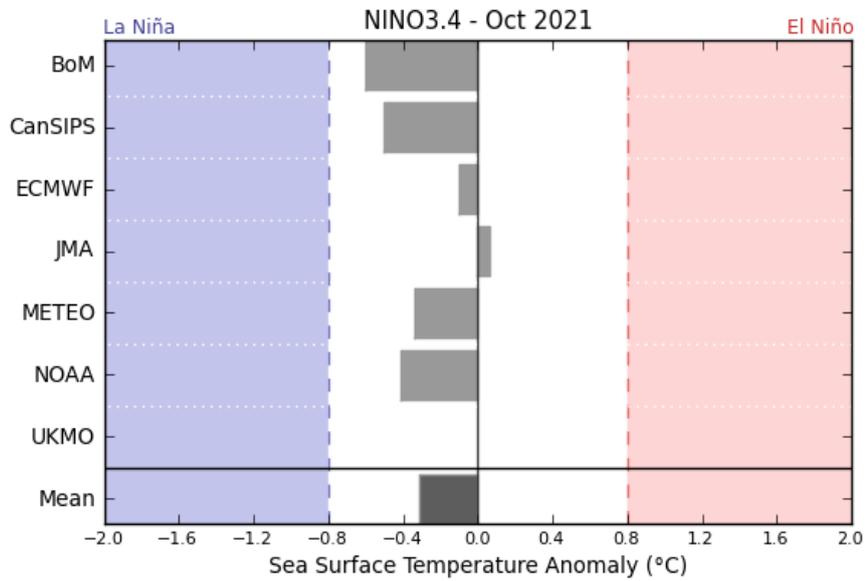
Difference from average sea surface temperature observations 19 April to 25 April 2021



Data: BOM SST
Climatology baseline: 1961 to 1990
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<http://www.bom.gov.au/climate> Weekly average: 25 April 2021
Created: 26/04/2021

International climate model outlooks for the NINO 3.4 region in October 2021

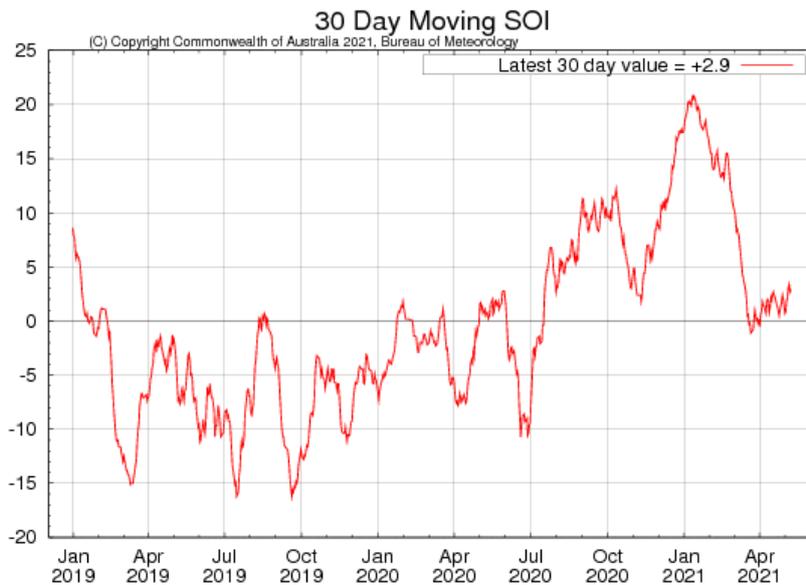


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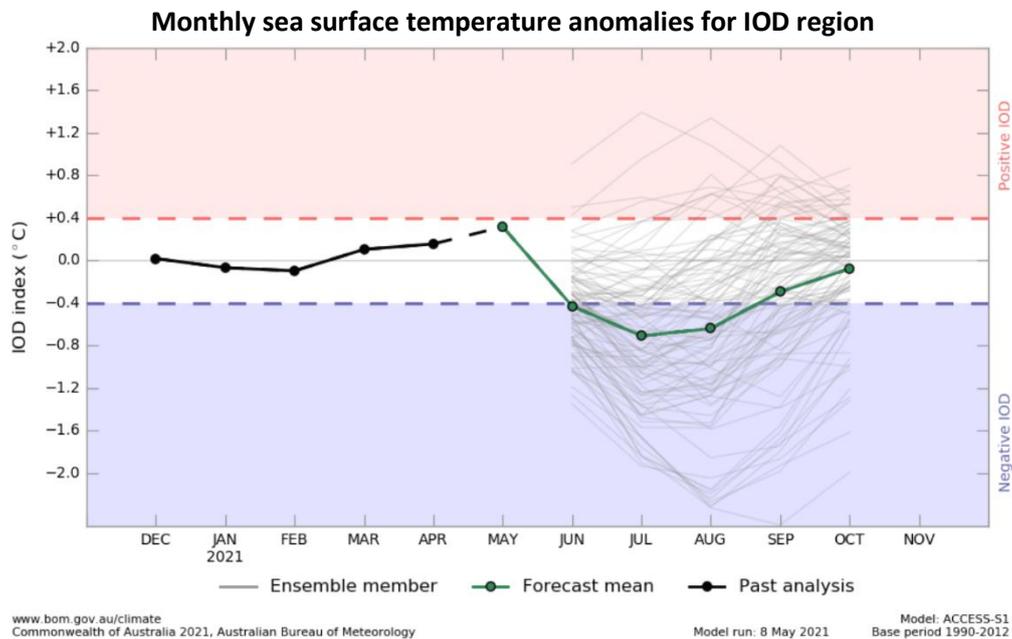
Issued: 12/05/2021

Trade wind strength across the tropical Pacific has remained close to average over the past fortnight. Above average trade wind strength had been observed over spring and summer and are associated with La Niña events. Cloudiness near the Date Line has also remained close to average over the past fortnight. The SOI provides an atmospheric measure of the development and intensity of the ENSO by assessing air pressure differences between Tahiti and Darwin. The 30-day SOI for the period ending 10 May was +3.1. For the period ending 9 May, the 90-day SOI value was +3.5. The 30-day and 90-day SOI have stabilised below the La Niña threshold value of +7. Overall, the SOI values indicate a continuation of neutral conditions.

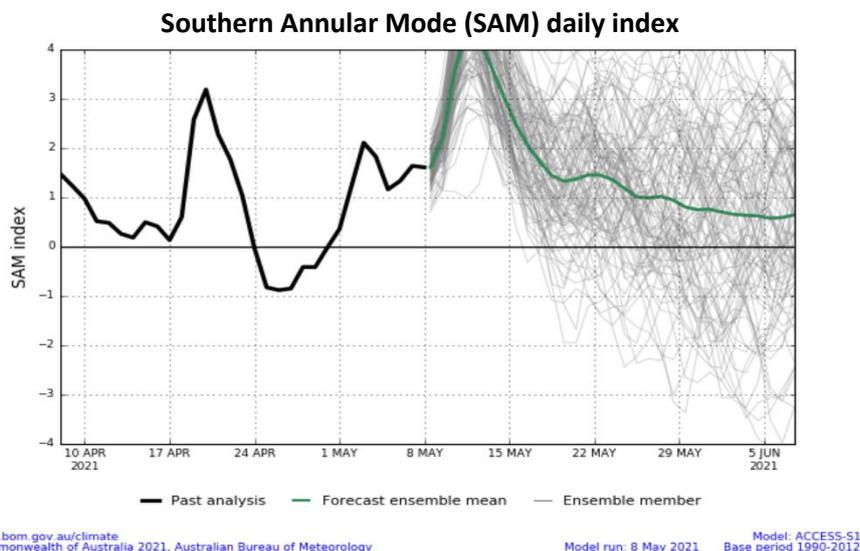
30-day Southern Oscillation Index (SOI) values ending 9 May 2021



As at 9 May, the Indian Ocean Dipole (IOD) weekly value was $+0.34^{\circ}\text{C}$, which remains neutral. The international climate models surveyed by the Bureau of Meteorology have mixed expectations for the months ahead. One of the five models predict a negative IOD in June (below -0.4°C), while four anticipate the IOD remaining neutral. By October, two of the five models predict a negative IOD, while three expect neutral IOD conditions. A positive IOD is associated with lower rainfall and above average temperatures across southern Australia during winter and spring. A negative IOD is associated with above average winter and spring rainfall across southern Australia, as well as the far north. It is also associated with an early northern rainfall onset.



The Southern Annular Mode (SAM) is currently positive and expected to remain positive over the coming week, before returning toward neutral. The SAM refers to the north-south shift of the band of rain-bearing westerly winds and weather systems in the Southern Ocean compared to the usual position. When SAM is positive during winter, the band of westerly winds is further south than normal. A negative SAM in winter is associated with increased rainfall for northern New South Wales, southern Queensland and southern parts of South Australia and Western Australia. It is also associated with decreased rainfall for much of Victoria, the west of Western Australia and Tasmania.



1.3. National Climate Outlook

These climate outlooks are generated by ACCESS–S (Australian Community Climate Earth-System Simulator–Seasonal). ACCESS–S is the Bureau of Meteorology's dynamical (physics-based) weather and climate model used for monthly, seasonal and longer-lead climate outlooks.

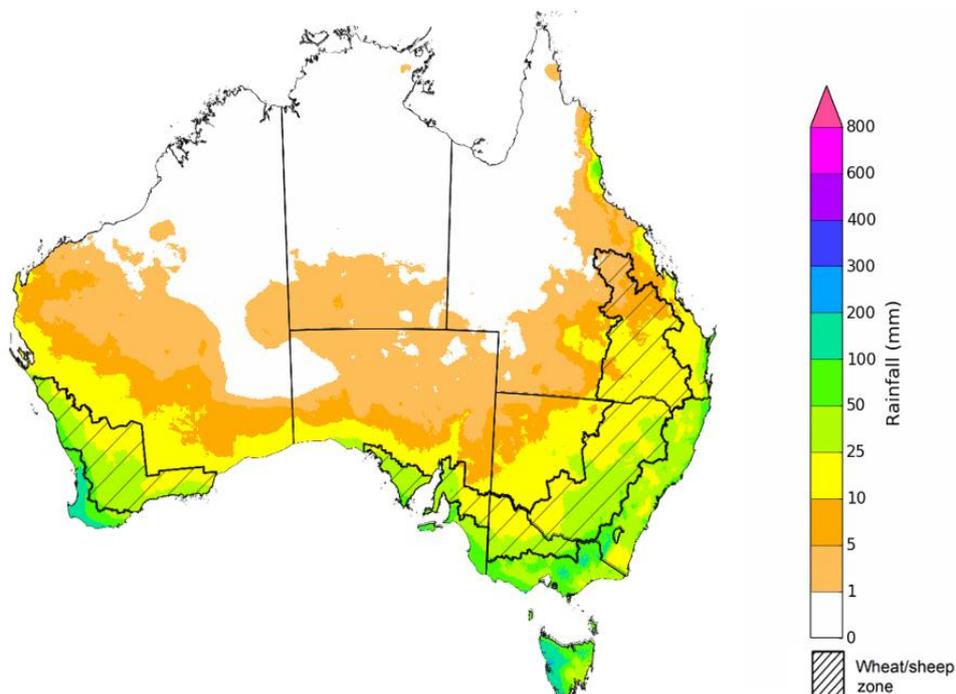
For further information, go to <http://www.bom.gov.au/climate/ahead/about/>

The Bureau of Meteorology's latest rainfall outlook indicated wetter than average conditions are more likely for much of northern, central and eastern Australia during June. It should be noted that May marked the beginning of the northern Australian dry season. This means tropical northern Australia typically has very low rainfall totals at this time of year, and only a small amount of rainfall is needed to exceed the median. In contrast, the wetter than average conditions expected in south-eastern Australia are likely influence the outlook for Australia's winter cropping season.

The outlook for June 2021 indicates that there is a 75% chance of rainfall totals between 10 and 100 millimetres across parts of eastern, south-western and far southern Australia. Rainfall totals in excess of 100 millimetres are expected across parts of Tasmania and isolated parts of south-eastern and south-western Australia.

Across cropping regions there is a 75% chance of rainfall totals of between 5 and 10 millimetres in central Queensland. There is a 75% chance of rainfall totals between 10 and 50 millimetres for New South Wales, southern Queensland, Victoria, South Australia and Western Australia.

Rainfall totals that have a 75% chance of occurring June 2021



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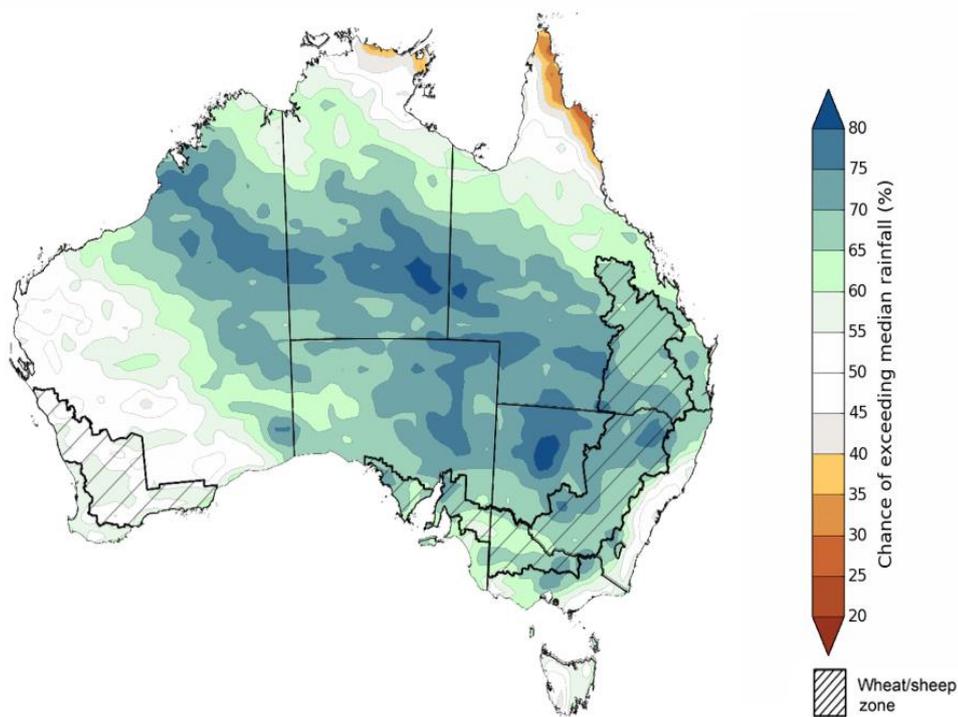
Issued: 06/05/2021

The ACCESS-S climate model suggests there is a 50% chance of recording close to average June rainfall totals across much of Australia, including most cropping regions in New South Wales, central and southern Queensland, Victoria, South Australia and Western Australia. An early autumn break has occurred for much of the New South Wales, southern areas of Queensland, Western Australian and Tasmanian cropping regions. Based on the 50% chance scenario those cropping regions in parts of western Victoria and South Australia that have yet to record an autumn break are forecast to receive between 25 to 50 millimetres of rainfall to support the germination and establishment of winter crops. If realised these forecast rainfall totals for June will provide sufficient moisture for planting of winter crops across most cropping regions.

The rainfall outlook for June to August 2021 suggests there is a greater than 60% chance of above average rainfall across much of New South Wales, Victoria, South Australia and the Northern Territory, as well as southern and central Queensland, and parts of Western Australia. There is a less than 40% chance of exceeding median rainfall across parts of northern Queensland and the north of the Northern Territory (Bureau of Meteorology 'National Climate Outlook', 6 May 2021).

Bureau of Meteorology rainfall outlooks for June to August have greater than 55% past accuracy across most of Australia. However, parts northern Queensland, the south of South Australia and the north of Western Australia and the northern Territory, where for this time of the year the outlook model performs no better than random chance. In contrast, outlook accuracy is greater than 65% accuracy across large parts of New South Wales, southern Queensland, northern Western Australia and the south of the Northern Territory, meaning more confidence can be placed in the rainfall outlook in these regions.

Chance of exceeding the median rainfall June to August 2021



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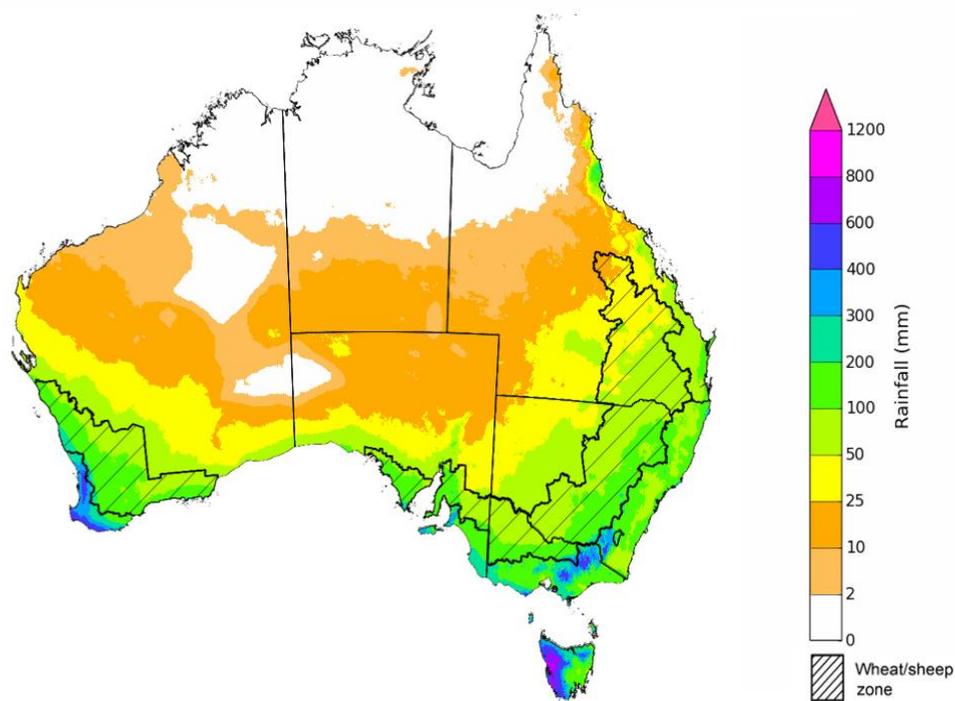
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The outlook for June to August suggests there is a 75% chance of rainfall totals between 50 and 200 millimetres across much of New South Wales and Victoria, south-eastern Queensland, the south of Southern Australia, the southwest of Western Australia and eastern Tasmania. Rainfall totals in excess of 300 millimetres are likely across parts of alpine regions of New South Wales and Victoria, and the far south-western Western Australia and western Tasmania.

Across cropping regions, there is a 75% chance of receiving between 50 and 200 millimetres in New South Wales, southern Queensland, Victoria, South Australia and Western Australia. Totals of less than 50 millimetres are expected in some north Queensland cropping regions.

There is a 50% chance of recording average or close to average June to August rainfall totals across most winter cropping regions. Average to above average soil moisture levels in New South Wales, and parts of Queensland and Western Australia are likely to provide good conditions for planting of winter crops, while the probability of close to average in-season rainfall will assist with yield development in the coming months.

Rainfall totals that have a 75% chance of occurring June to August 2021

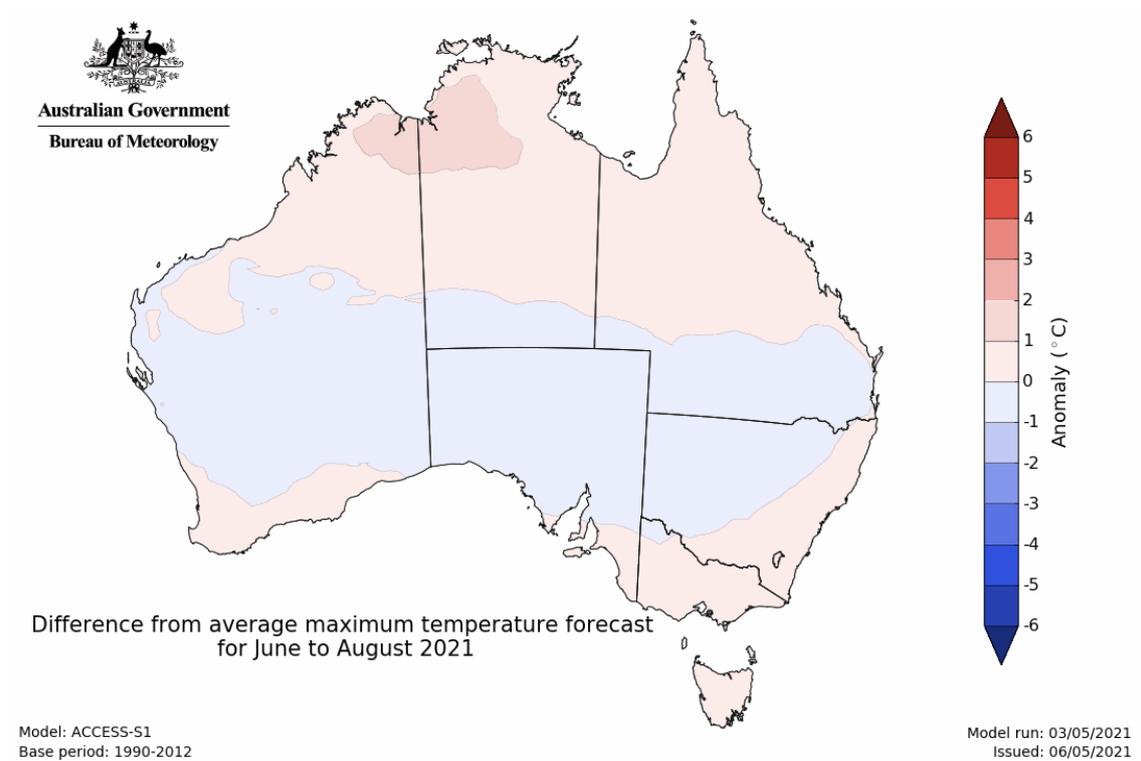


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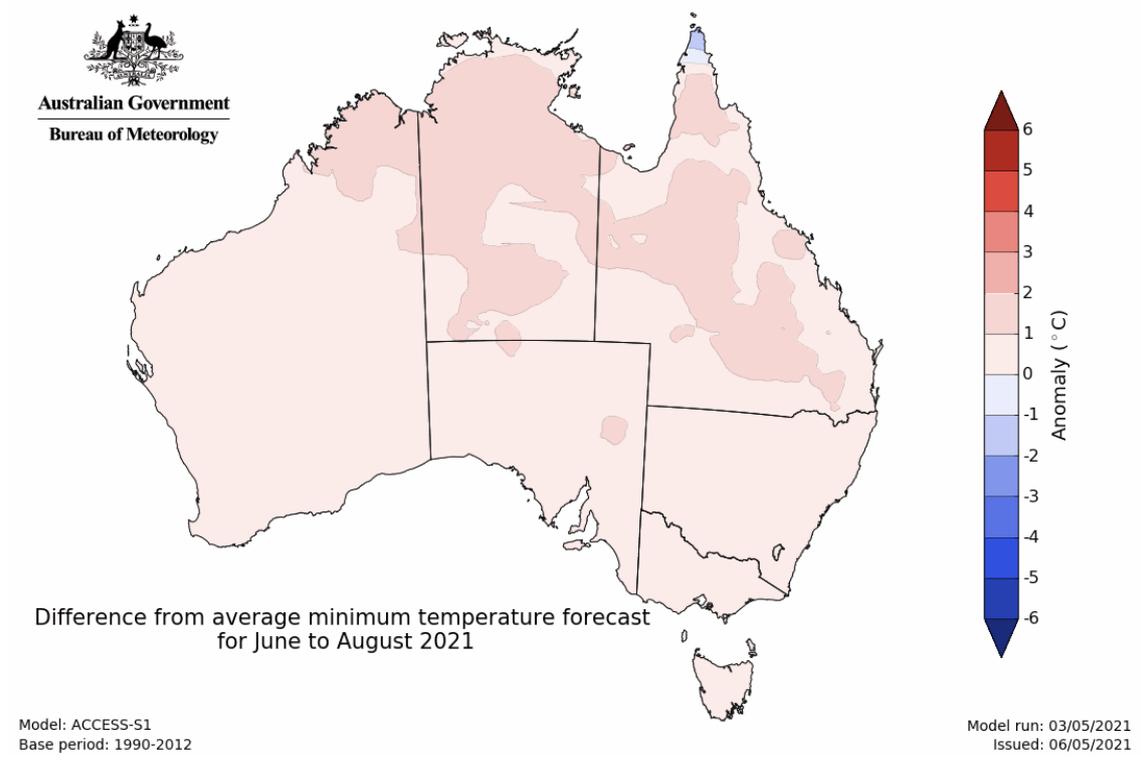
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The temperature outlook for June to August 2021 indicates that day-time and night-time temperatures across most of Australia are likely to be close to the 1990-2012 average (- 1°C to 1°C) (Bureau of Meteorology 'National Climate Outlook', 6 May 2021).

Predicted maximum temperature anomaly for June to August 2021



Predicted minimum temperature anomaly for June to August 2021



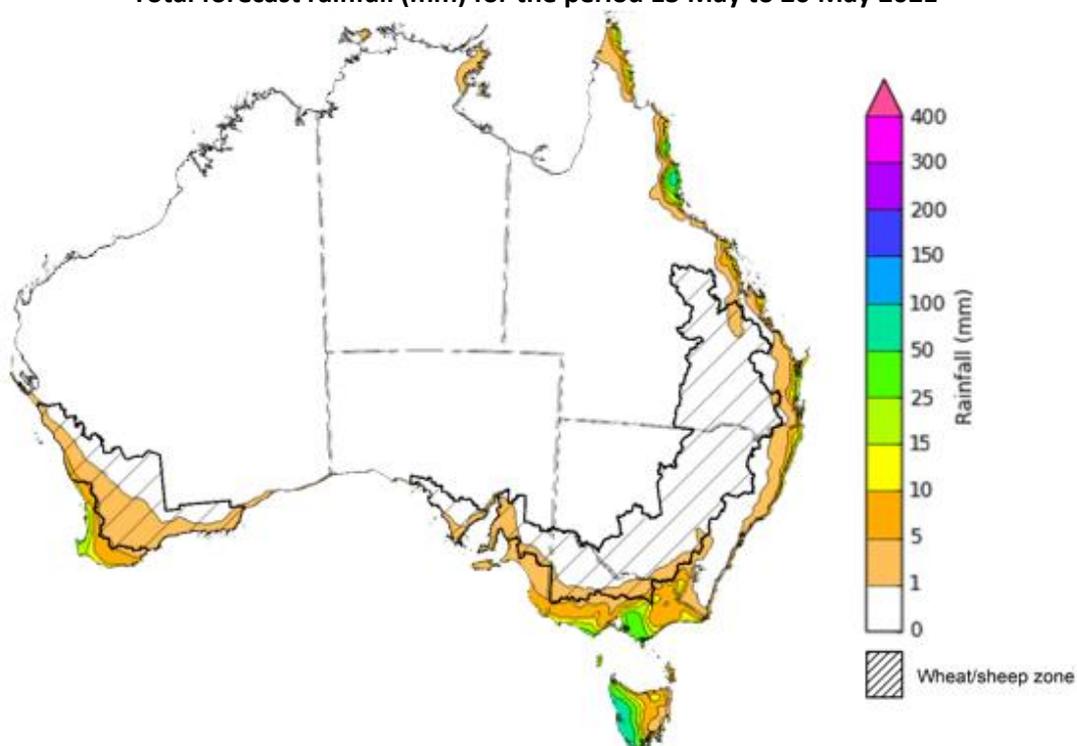
1.4. Rainfall forecast for the next eight days

Low-pressure systems are likely to bring isolated showers to parts of southern Australia, while onshore flow is expected to bring falls to isolated location along the east coast during the 8 days to 20 May 2021. High-pressure systems are expected to keep the majority of Australia dry during the next 8 days.

Rainfall totals of between 5 and 50 millimetres are forecast for parts of eastern and southern Victoria, the far south-western of Western Australia, Tasmania and isolated parts of Australia's east coast. Rainfall totals in excess of 50 millimetres are forecast for western Tasmania.

In Australia's cropping regions, little to no rainfall is expected dry during the next 8 days. The dry forecast for the next 8 days will maintain near ideal conditions for wheat, barley, and canola planting and early development where soil moisture is adequate to support growth, and continued summer crop harvesting. Elsewhere in the wheat belt, mostly dry weather in northern Victoria and South Australia favoured fieldwork, including winter crop planting.

Total forecast rainfall (mm) for the period 13 May to 20 May 2021



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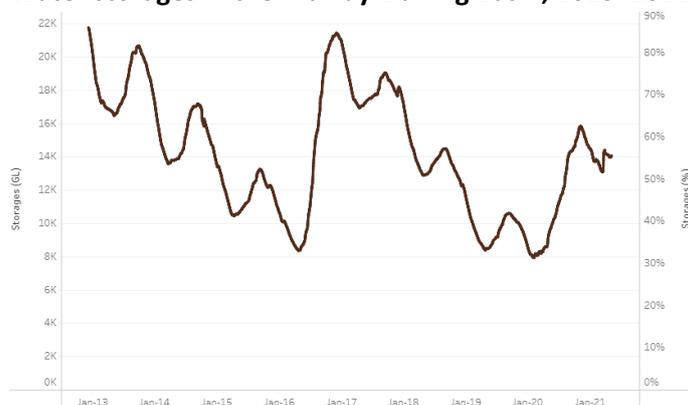
Note: This rainfall forecast is produced from computer models. As the model outputs are not altered by weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.

2. Water

2.1. Water markets – current week

Water storage in the Murray–Darling Basin (MDB) increased by 93 gigalitres (GL) between 4 May 2021 and 11 May 2021. The current volume of water held in storage is 14,048 GL, which represents 55% of total capacity. This is 48% or 4,564 GL more than at the same time last year.

Water storages in the Murray-Darling Basin, 2013–2021

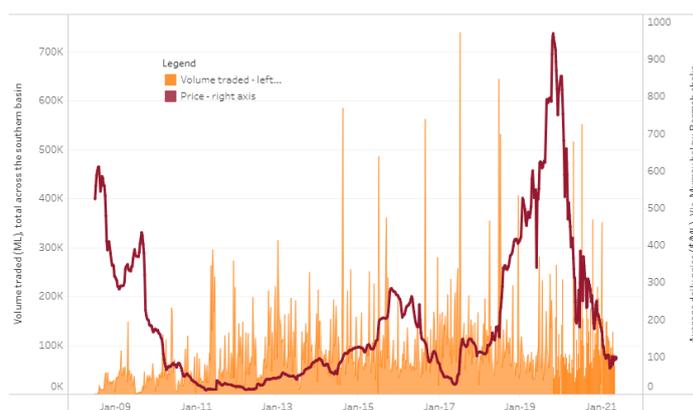


Water storage data is sourced from the Bureau of Meteorology.

Allocation prices in the Victorian Murray below the Barmah Choke increased from \$95 per ML on 6 May 2021 to \$97 per ML on 12 May 2021. Prices are lower in the Murrumbidgee due to the restriction of Murrumbidgee exports to 6 GL.

Region	\$/ML
NSW Murray Above	97
NSW Murrumbidgee	72
VIC Goulburn-Broken	100
VIC Murray Below	97

Surface water trade activity, Southern Murray–Darling Basin



The trades shown reflect estimated market activity and do not encompass all register trades. The price is shown for the VIC Murray below the Barmah choke. Historical prices (before 1 July 2019) are ABARES estimates after removing outliers from BOM water register data. Prices after 1 July 2019 and prior to the 30 October 2019 reflect recorded transaction prices as sourced from Ruralco. Prices after the 30 October 2019 are sourced from Waterflow. Data for volume traded is sourced from the BOM water register. Data shown is current at 13 May 2021.

To access the full, interactive, weekly water dashboard, which contains the latest and historical water storage, water market and water allocation information, please visit

http://www.agriculture.gov.au/abares/products/weekly_update/weekly-update-130521

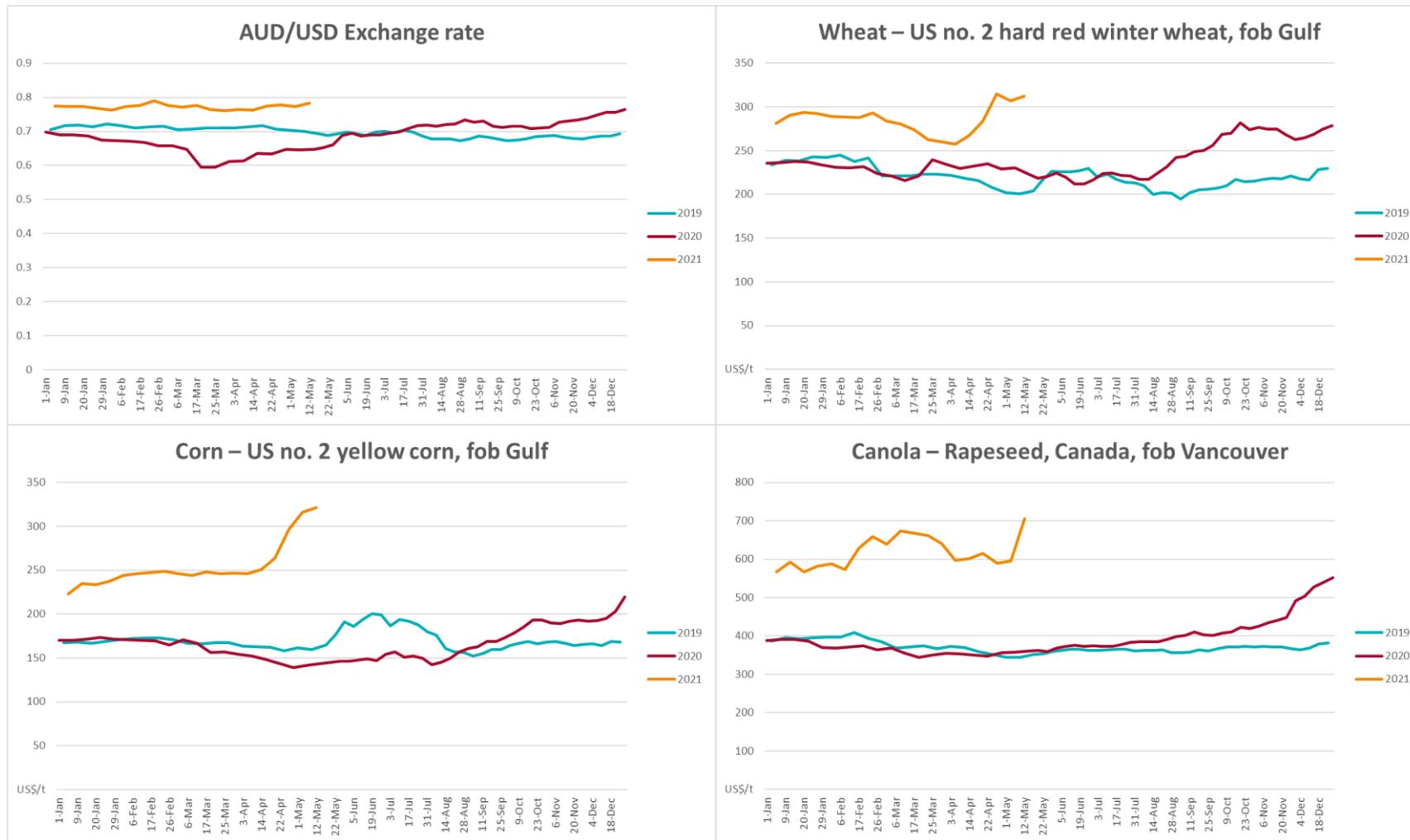
3. Commodities

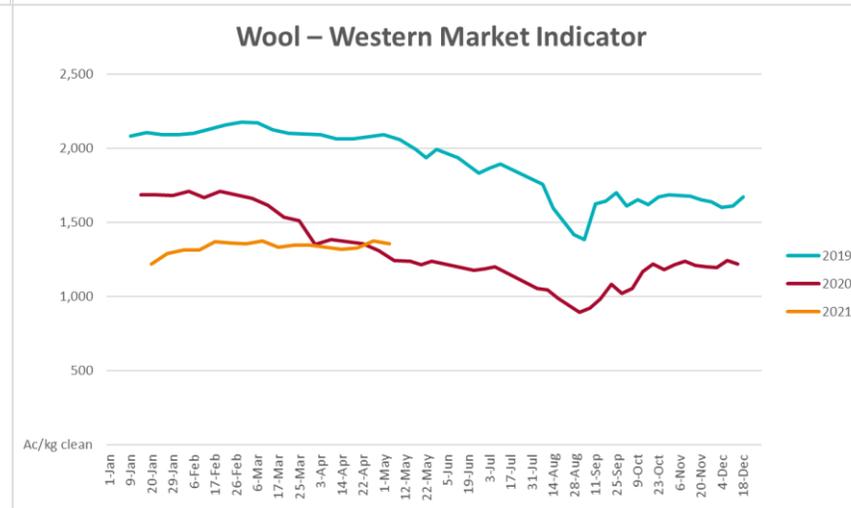
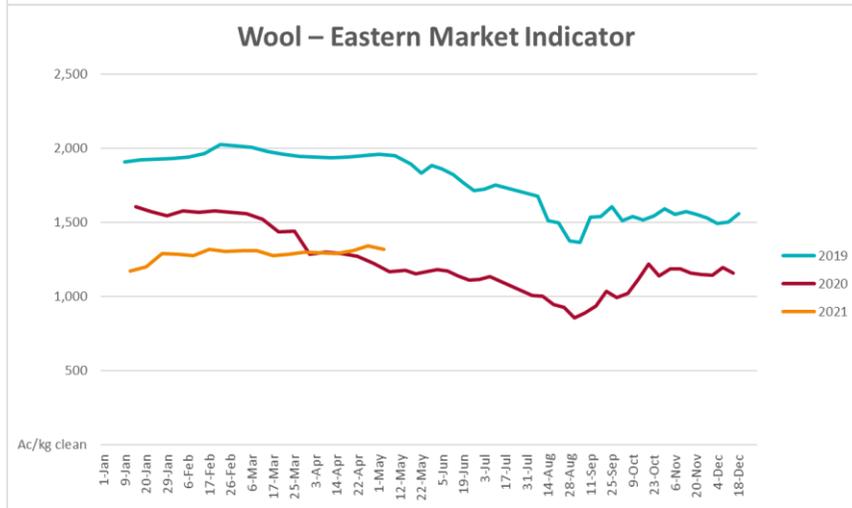
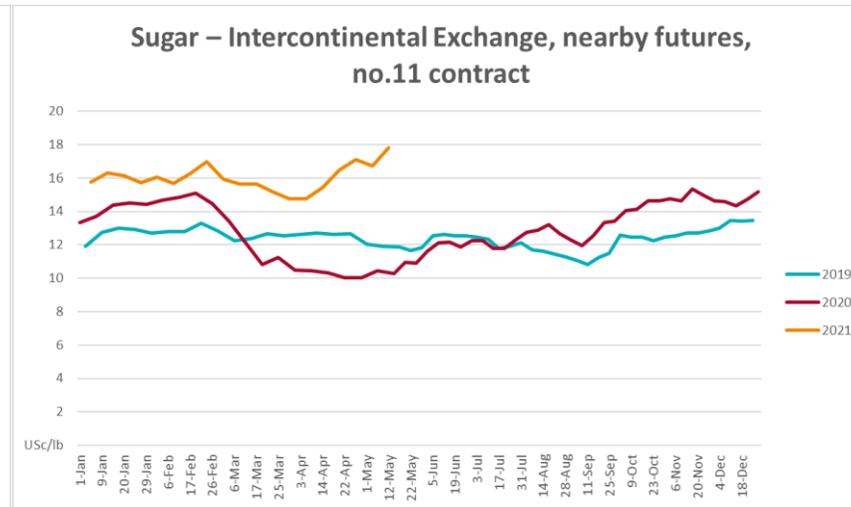
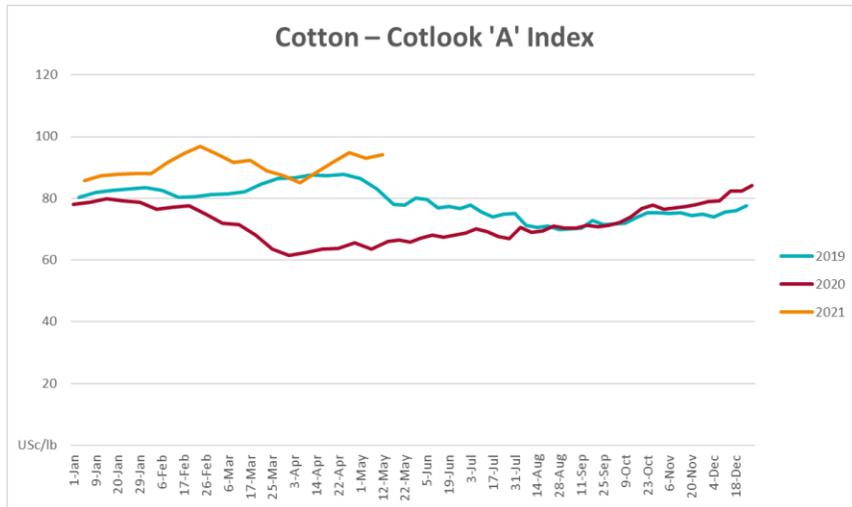
Indicator	Week ended	Unit	Latest price	Previous week	Weekly change	Price 12 months ago	Annual change
Selected world indicator prices							
AUD/USD Exchange rate	12-May	A\$/US\$	0.78	0.77	1%	0.65	20%
Wheat – US no. 2 hard red winter wheat, fob Gulf	12-May	US\$/t	313	307	2%	218	43%
Corn – US no. 2 yellow corn, fob Gulf	12-May	US\$/t	321	316	2%	145	122%
Canola – Rapeseed, Canada, fob Vancouver	12-May	US\$/t	705	596	18%	363	94%
Cotton – Cotlook 'A' Index	12-May	USc/lb	94	93	1%	67	42%
Sugar – Intercontinental Exchange, nearby futures, no.11 contract	12-May	USc/lb	18	17	7%	11	63%
Wool – Eastern Market Indicator	05-May	Ac/kg clean	1,319	1,342	-2%	1,442	-9%
Wool – Western Market Indicator	05-May	Ac/kg clean	1,355	1,375	-1%	1,667	-19%
Selected Australian grain export prices							
Milling Wheat – APW, Port Adelaide, SA	12-May	A\$/t	383	375	2%	406	-6%
Feed Wheat – ASW, Port Adelaide, SA	12-May	A\$/t	381	373	2%	404	-6%
Feed Barley – Port Adelaide, SA	12-May	A\$/t	316	307	3%	282	12%
Canola – Kwinana, WA	12-May	A\$/t	756	717	5%	643	18%
Grain Sorghum – Brisbane, QLD	12-May	A\$/t	370	363	2%	433	-14%
Selected domestic livestock indicator prices							
Beef – Eastern Young Cattle Indicator	12-May	Ac/kg cwt	899	886	2%	708	27%
Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic	12-May	Ac/kg cwt	658	653	1%	674	-2%
Lamb – Eastern States Trade Lamb Indicator	12-May	Ac/kg cwt	813	801	1%	941	-14%
Pig – Eastern Seaboard (60.1–75 kg), average of buyers & sellers	05-May	Ac/kg cwt	353	357	-1%	406	-13%
Goats – Eastern States (12.1–16 kg)	12-May	Ac/kg cwt	857	855	0%	790	8%
Live cattle – Light steers ex Darwin to Indonesia	17-Feb	Ac/kg lwt	355	355	0%	360	-1%
Live sheep – Live wethers (Muchea WA saleyard) to Middle East	12-May	\$/head	145	146	-1%	#N/A	#N/A

Indicator	Week ended	Unit	Latest price	Previous week	Weekly change	Price 12 months ago	Annual change
Global Dairy Trade (GDT) weighted average prices ^a							
Dairy – Whole milk powder	05-May	US\$/t	4,115	4,097	0%	3,317	24%
Dairy – Skim milk powder	05-May	US\$/t	3,433	3,365	2%	2,405	43%
Dairy – Cheddar cheese	05-May	US\$/t	4,274	4,436	-4%	4,248	1%
Dairy – Anhydrous milk fat	05-May	US\$/t	5,730	6,003	-5%	5,867	-2%

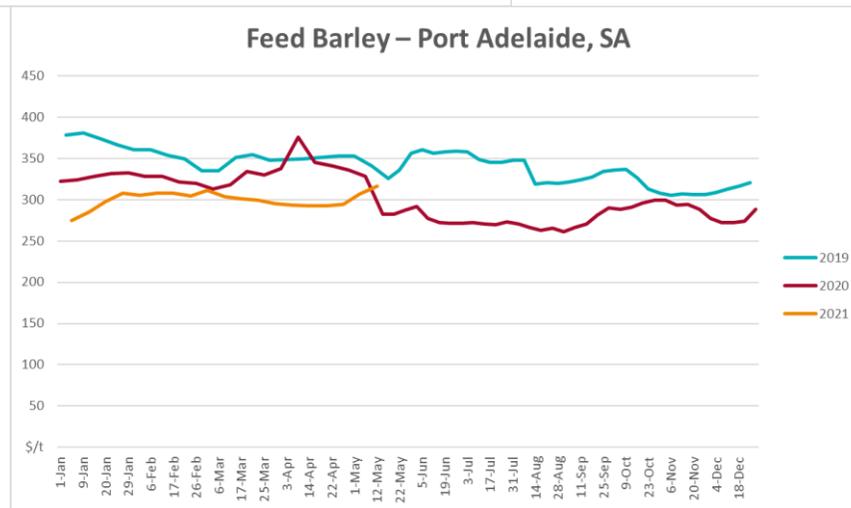
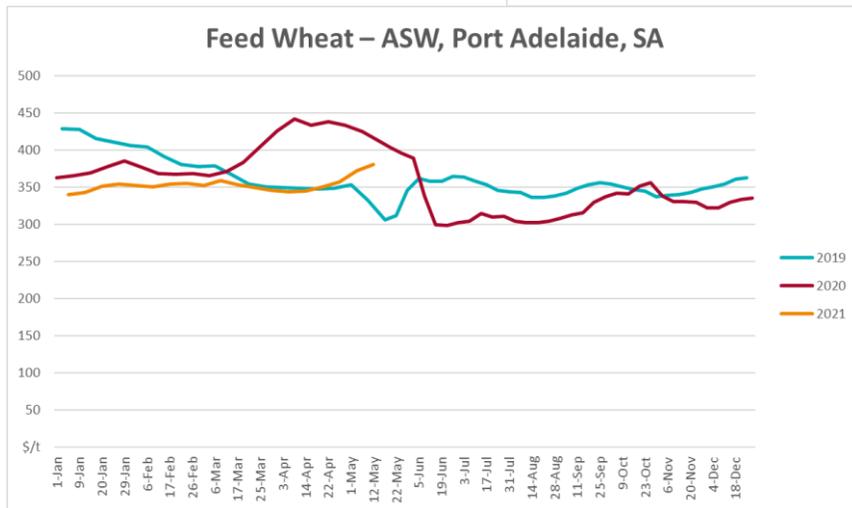
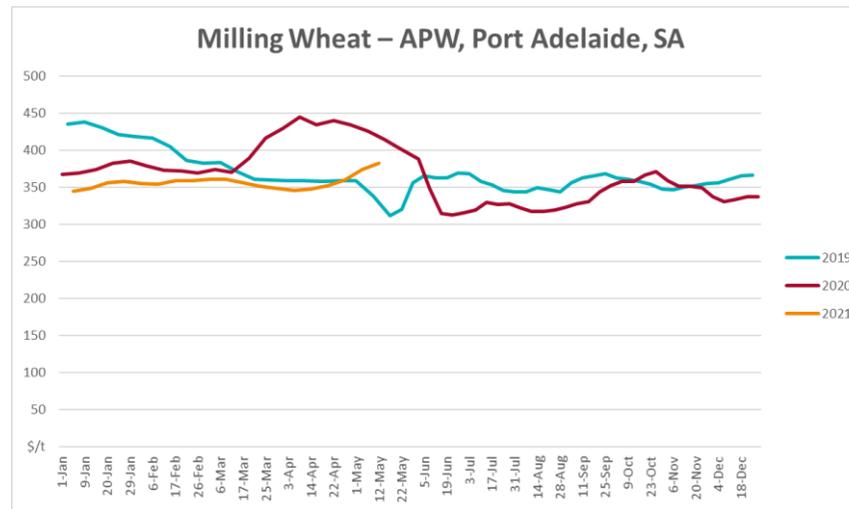
^a Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.

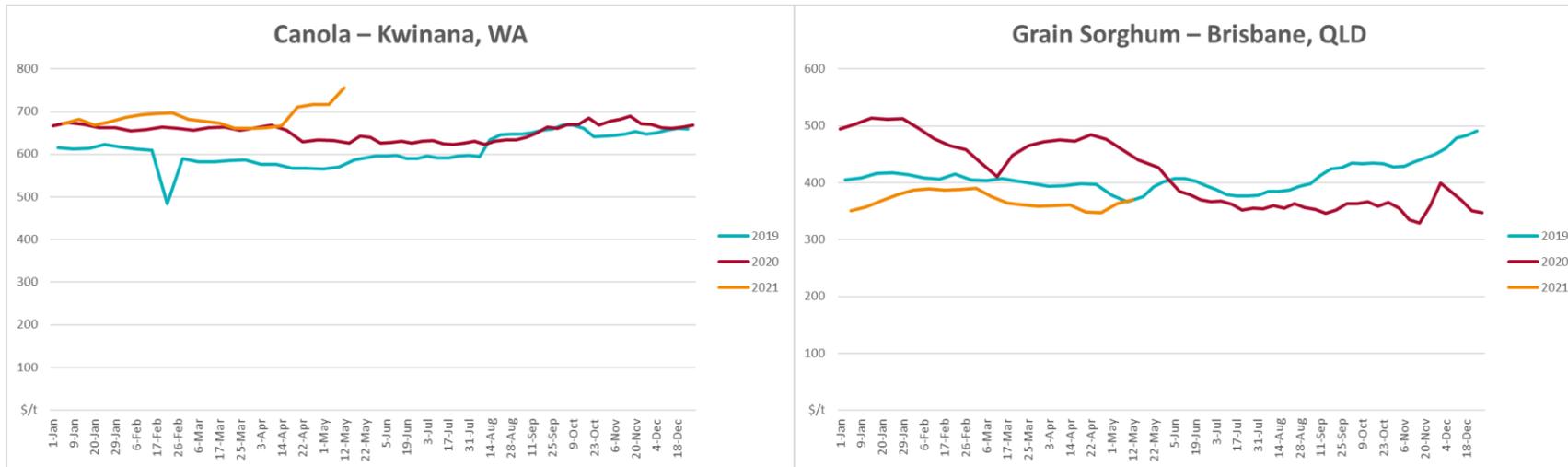
3.1. Selected world indicator prices



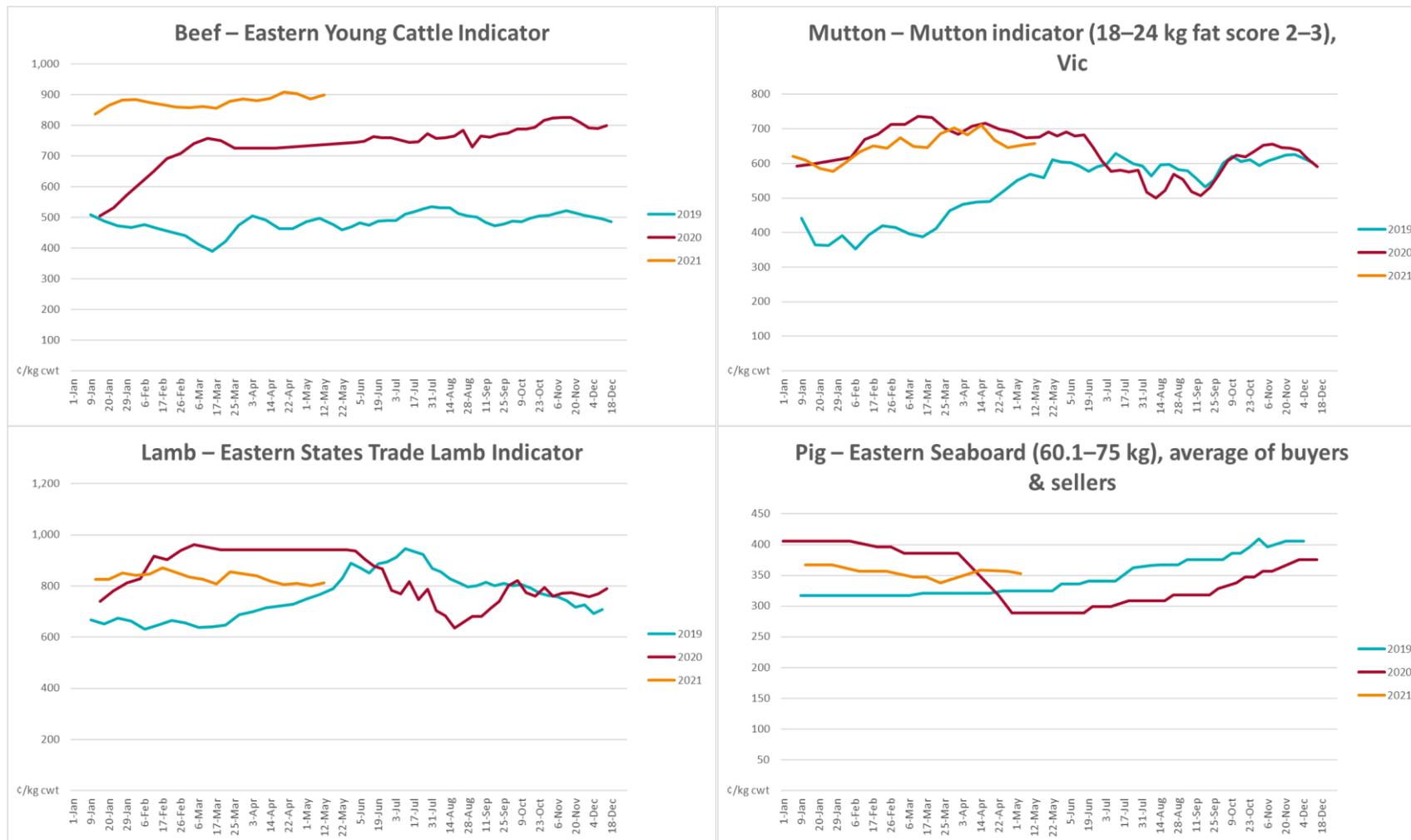


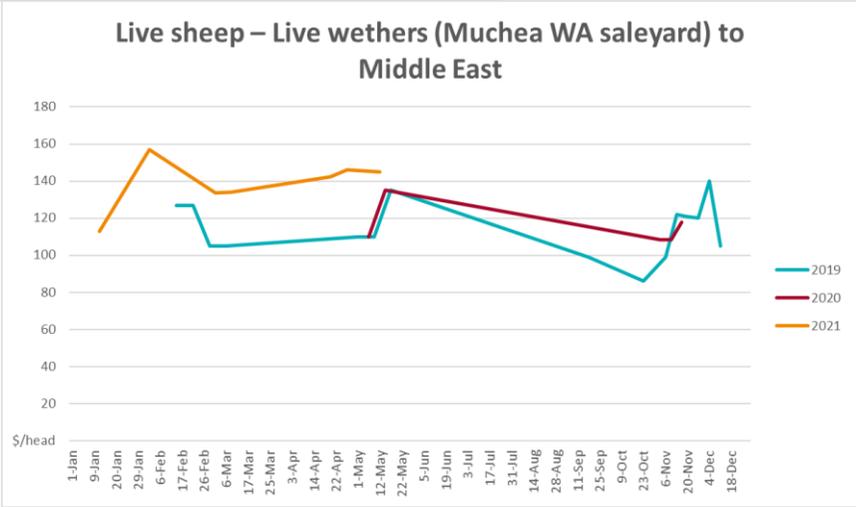
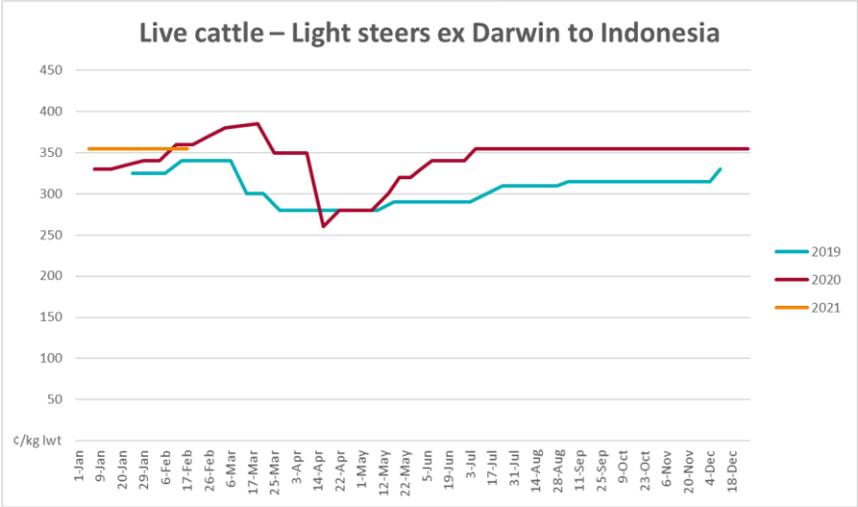
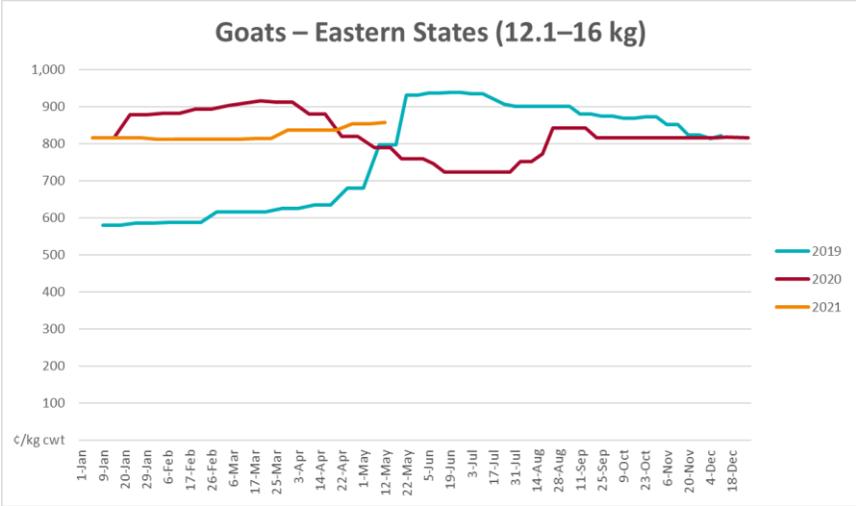
3.2. Selected domestic crop indicator prices



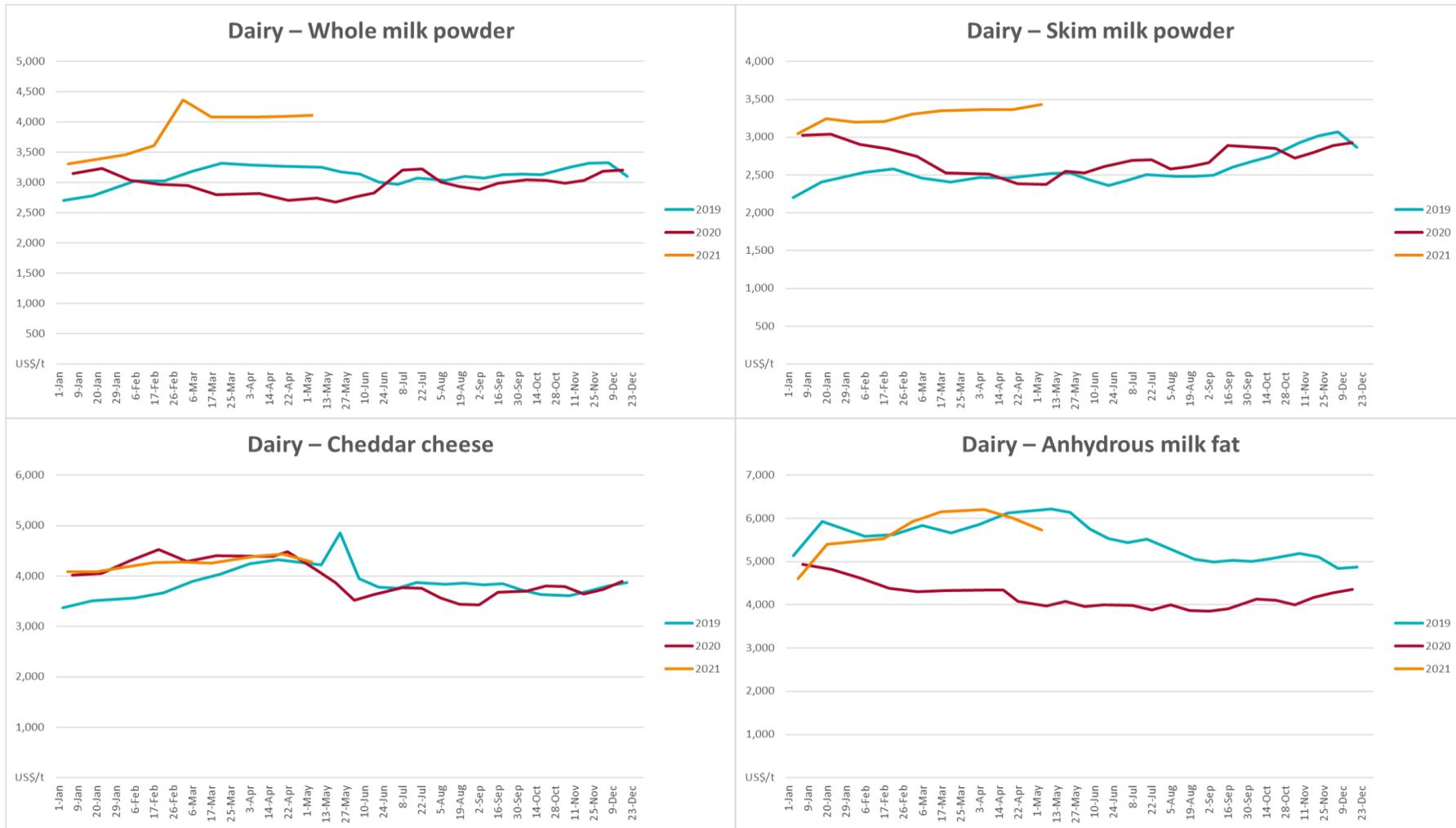


3.3. Selected domestic livestock indicator prices

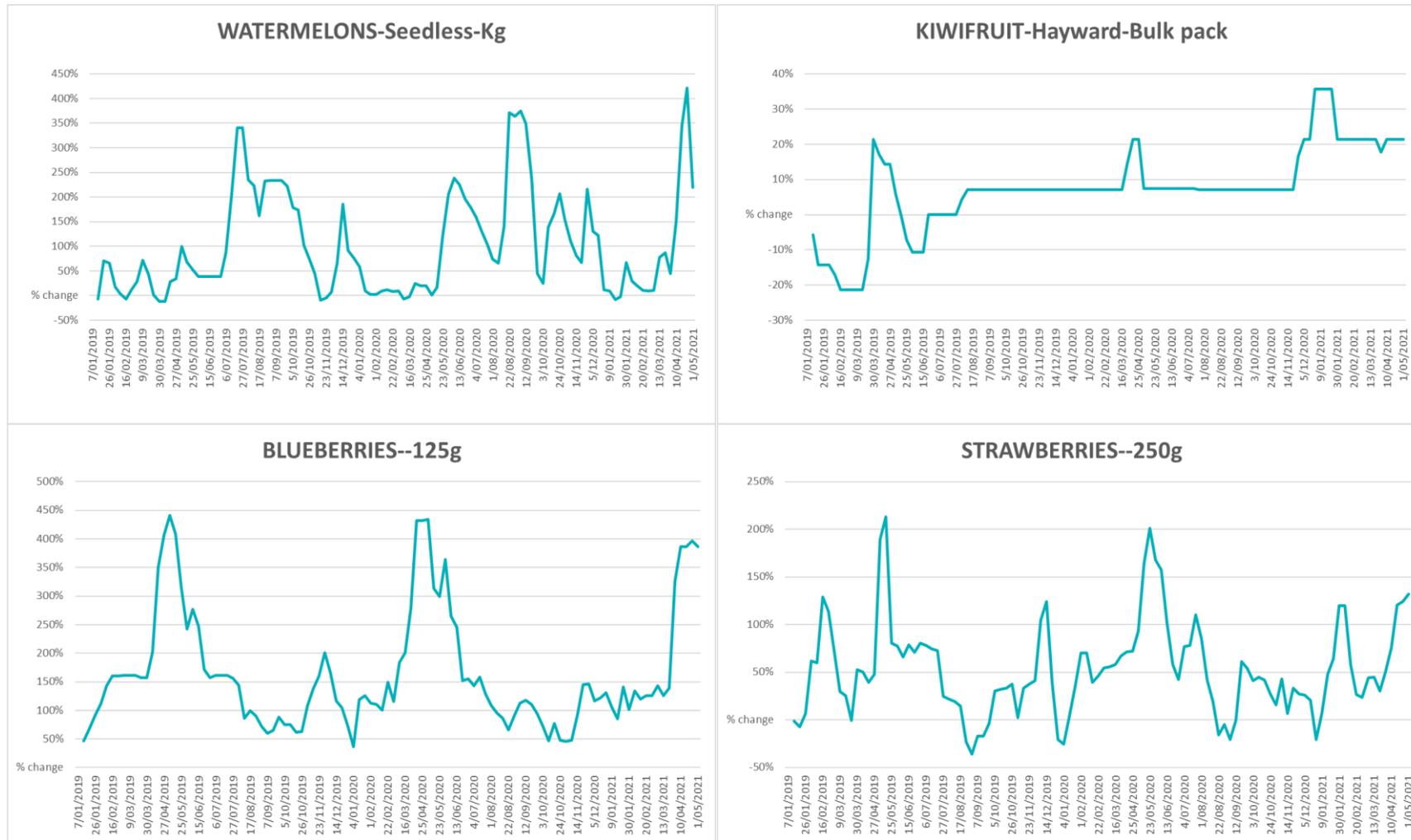




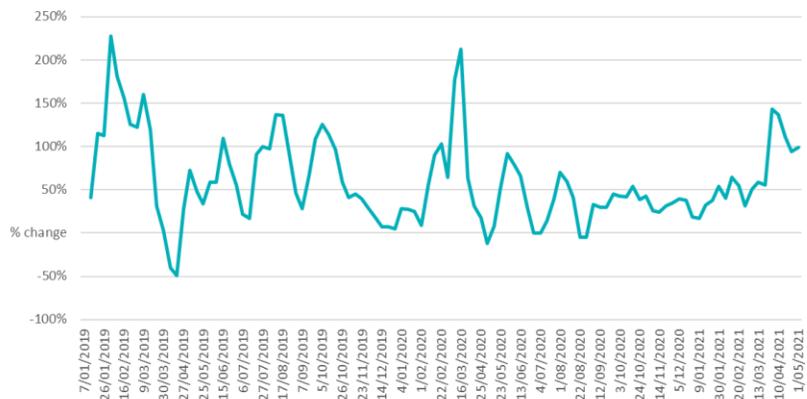
3.4. Global Dairy Trade (GDT) weighted average prices



3.5. Selected fruit and vegetable prices



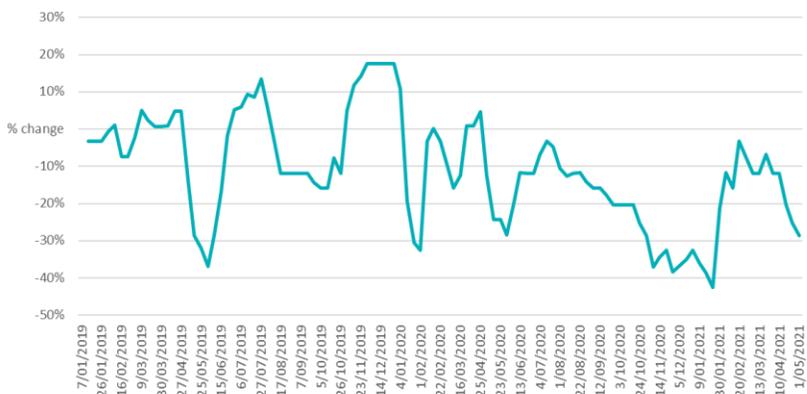
BANANAS-Cavendish-Carton



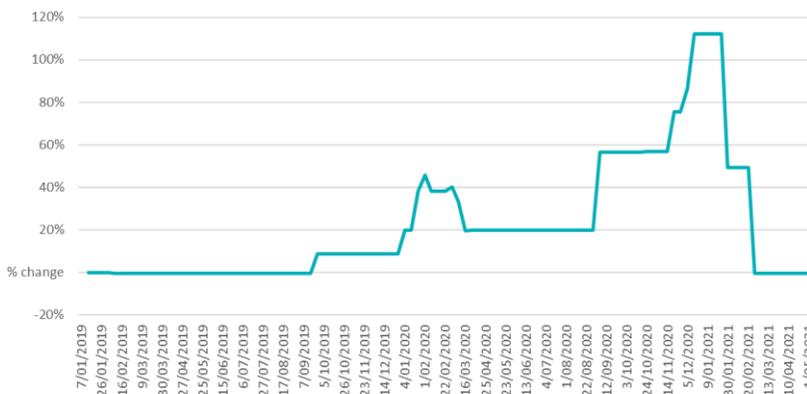
AVOCADOS-Hass-Tray

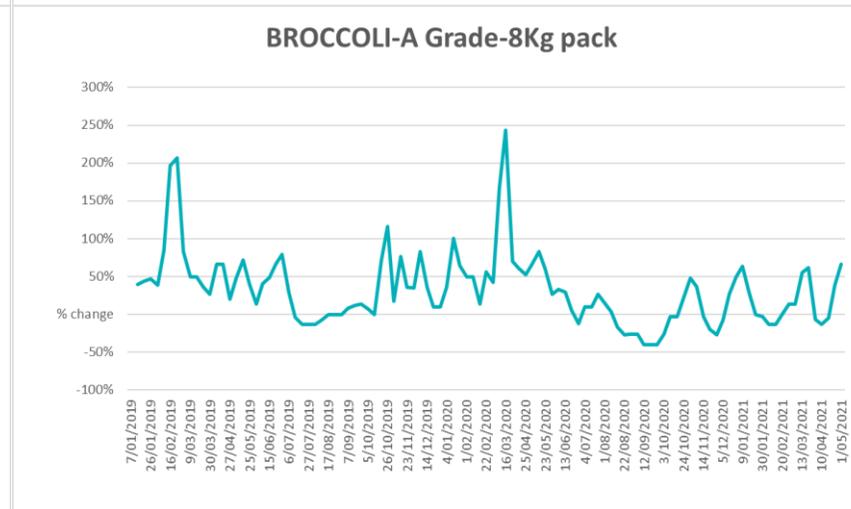
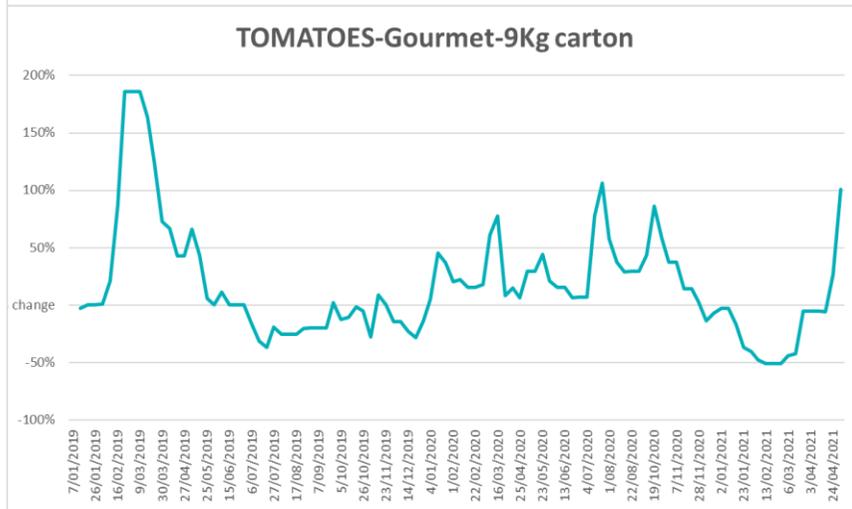
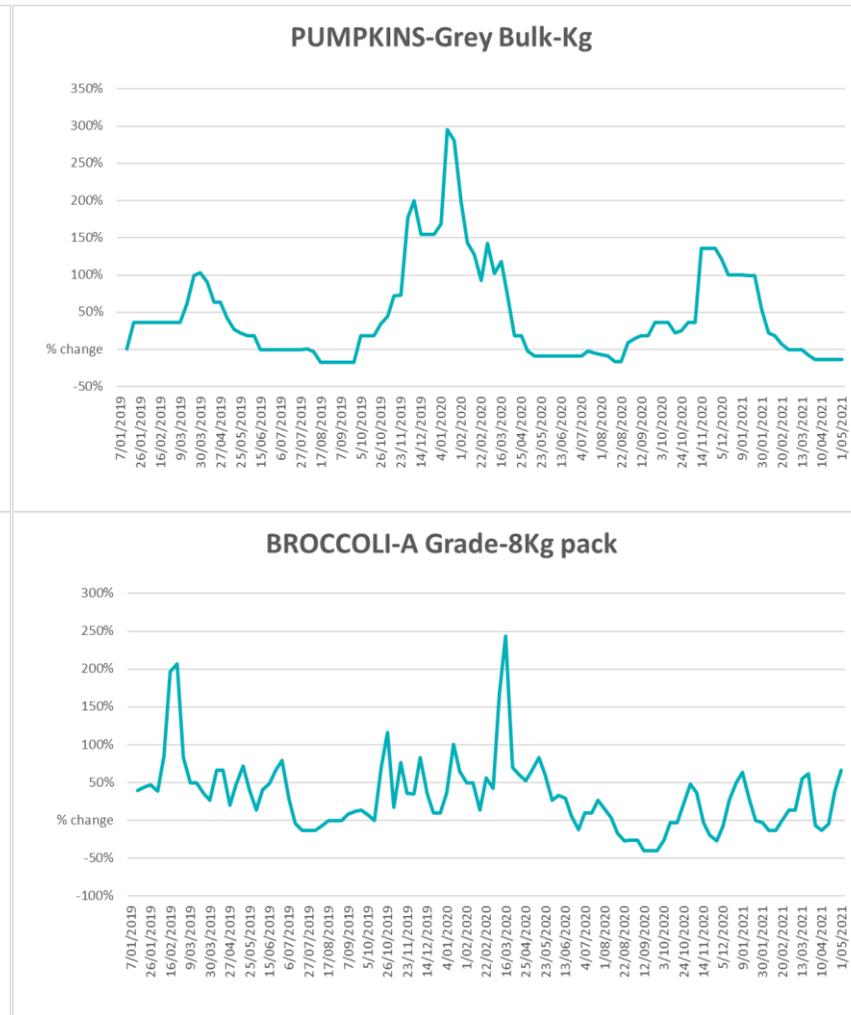
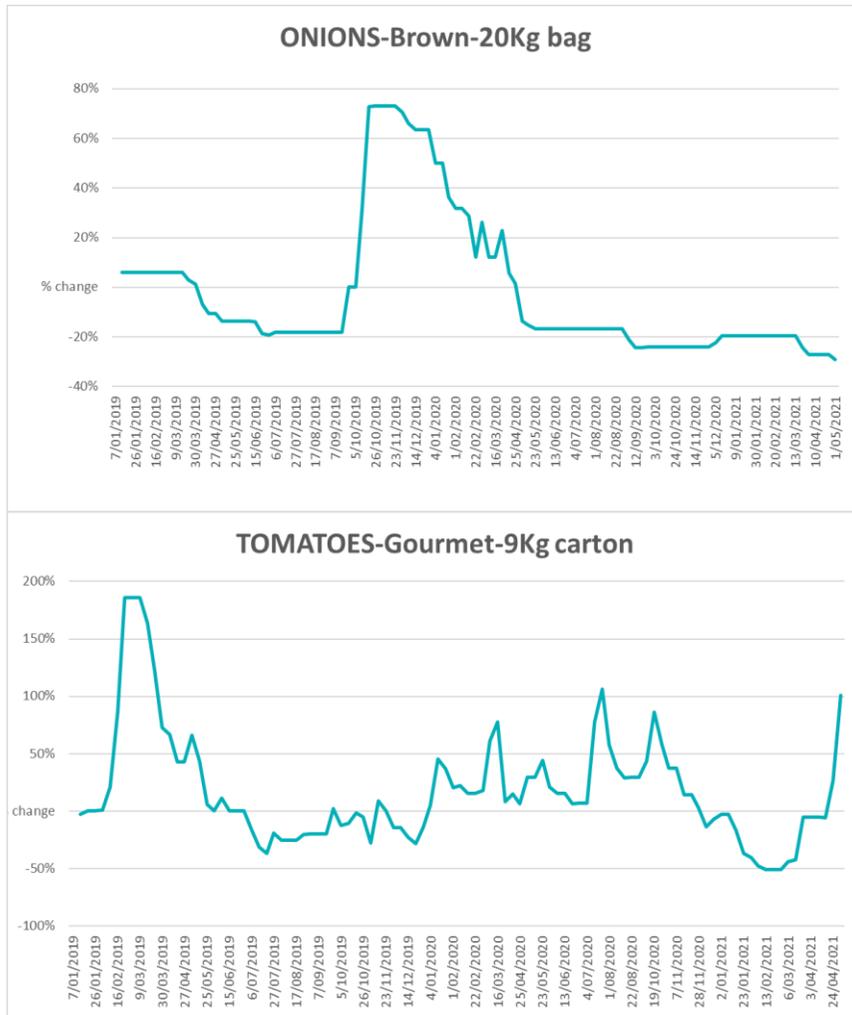


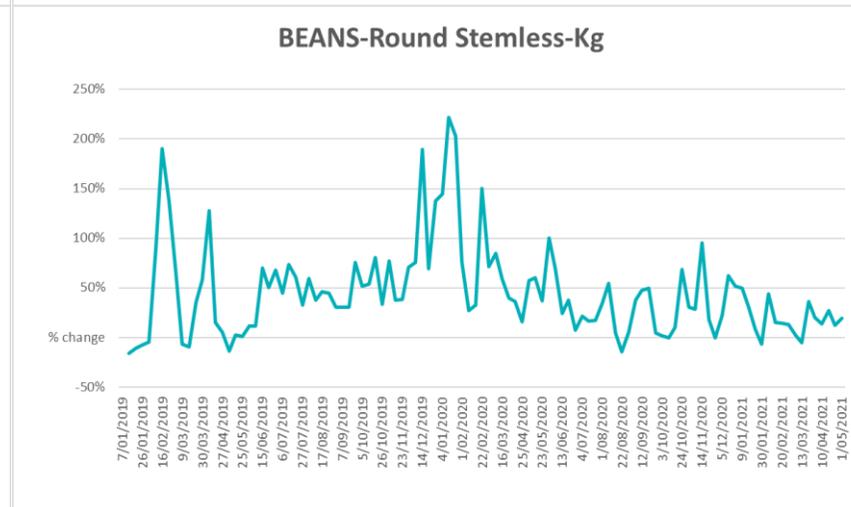
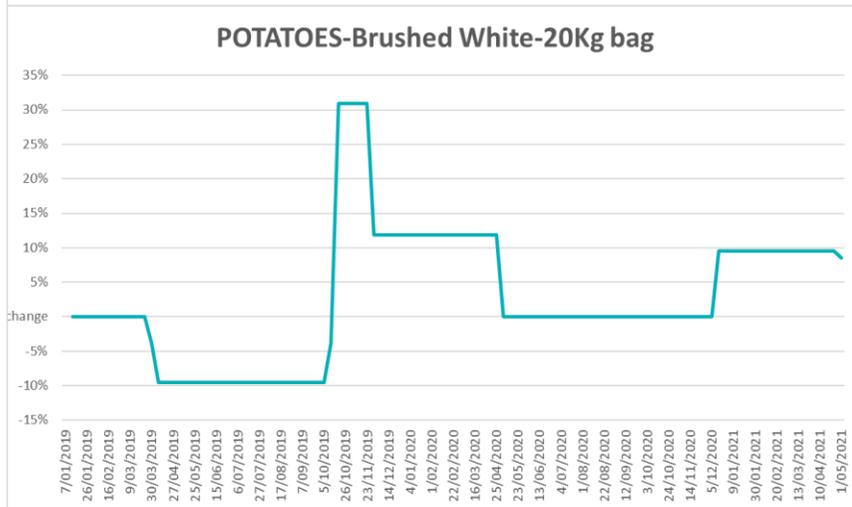
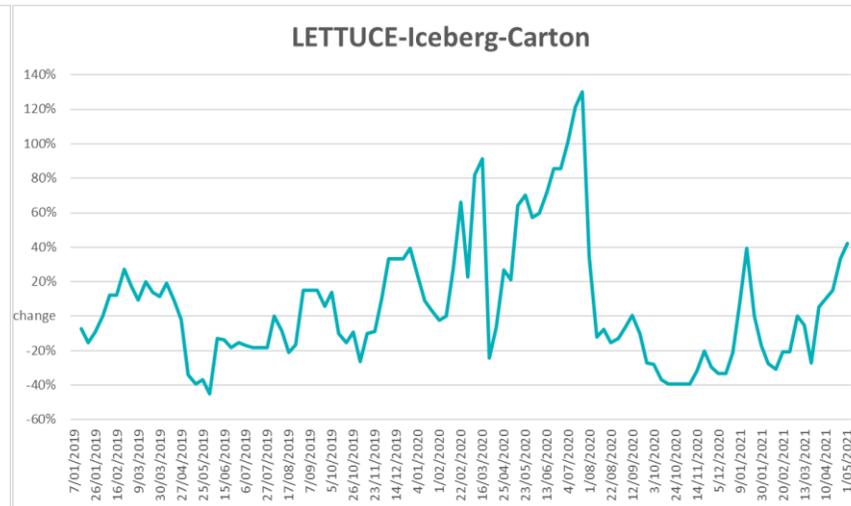
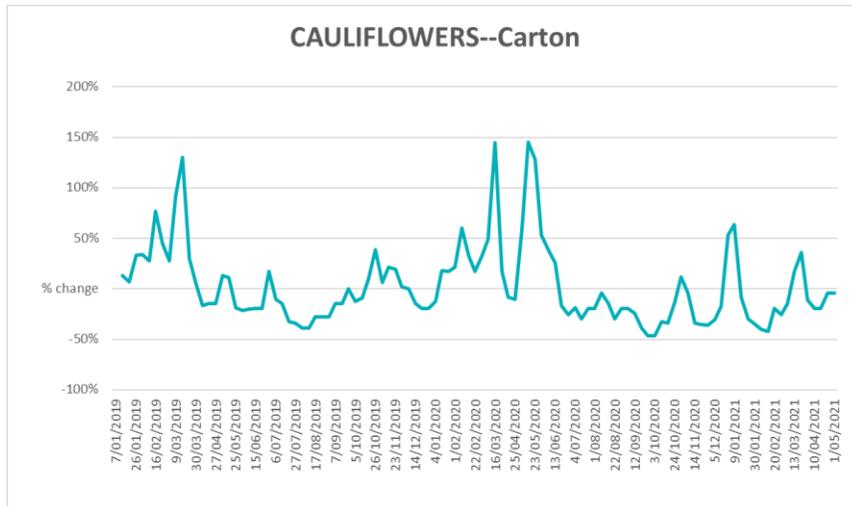
PINEAPPLES-Smoothleaf-Tray



APPLES-Royal Gala-12kg carton







4. Data attribution

Climate

Bureau of Meteorology

- Weekly rainfall totals: www.bom.gov.au/jsp/awap/rain/index.jsp
- Monthly and last 3-month rainfall percentiles: www.bom.gov.au/jsp/awap/rain/index.jsp
- Temperature anomalies: www.bom.gov.au/jsp/awap/temp/index.jsp
- Rainfall forecast: www.bom.gov.au/jsp/watl/rainfall/pme.jsp
- Seasonal outlook: www.bom.gov.au/climate/outlooks/#/overview/summary/
- Drought statement: www.bom.gov.au/climate/drought/drought.shtml
- Soil moisture: www.bom.gov.au/water/landscape/

Other

- Pasture growth: <https://www.longpaddock.qld.gov.au/aussiegrass/>
- 3-month global outlooks: [Environment and Climate Change Canada](#), [NOAA Climate Prediction Center](#), [EUROBRISA CPTC/INPE](#), [European Centre for Medium-Range Weather Forecasts](#), [Hydrometcenter of Russia](#), [National Climate Center Climate System Diagnosis and Prediction Room \(NCC\)](#), [International Research Institute for Climate and Society](#)
- Global production: <https://ipad.fas.usda.gov/ogamaps/cropmapsandcalendars.aspx>
- Autumn break: Pook et al., 2009, <https://rmets-onlinelibrary-wiley-com.virtual.anu.edu.au/doi/epdf/10.1002/joc.1833>

Water

New South Wales

- New South Wales Water Information: <http://waterinfo.nsw.gov.au/>
- New South Wales Office of Water, Department of Primary Industries: www.water.nsw.gov.au/Home/default.aspx
- Available water determinations register: www.water.nsw.gov.au/water-licensing/registers

Queensland

- Sunwater: www.sunwater.com.au
- Seqwater: <http://seqwater.com.au>

South Australia

- SA Water: www.sawater.com.au/community-and-environment/the-river-murray/river-reports/daily-flow-report
- South Australian Department of Environment, Water and Natural Resources: www.environment.sa.gov.au

Victoria

- Goulburn–Murray Water: www.g-mwater.com.au

Commodities

Fruit and vegetables

- Datafresh: www.freshstate.com.au

Pigs

- Australian Pork Limited: www.australianpork.com.au

Dairy

- Global Dairy Trade: www.globaldairytrade.info/en/product-results/

World wheat, canola

- International Grains Council

World coarse grains

- United States Department of Agriculture

World cotton

- Cotlook: www.cotlook.com/

World sugar

- New York Stock Exchange - Intercontinental Exchange

Wool

- Australian Wool Exchange: www.awex.com.au/

Domestic wheat, barley, sorghum and canola

- Jumbuk Consulting Pty Ltd: <http://www.jumbukag.com.au/>

Cattle, beef, mutton, lamb, goat and live export

- Meat and Livestock Australia: www.mla.com.au/Prices-and-market

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