



# Weekly Australian Climate, Water and Agricultural Update

No. 31/2022

11 August 2022

## Summary of key issues

- For the week ending 10 August 2022, low-pressure troughs and cold fronts across southern and eastern Australia brought rainfall and strong winds. Over northern parts of the country, high-pressure systems dominated, bringing clear, dry conditions (see Section 1.1).
- The moderate rainfall received across central New South Wales and central Queensland over the past 8-days has increased the risk of waterlogging, with soil moisture levels already well above average. In Western Australia, rainfall consolidated falls received the previous week, boosting plant available water for the coming weeks.
- Oceanic and atmospheric El Niño–Southern Oscillation (ENSO) indicators remain neutral, reducing its influence on Australia’s climate patterns. However, a negative Indian Ocean Dipole (IOD) event has become established in the tropical Indian Ocean, and the Southern Annular Mode (SAM) has recently returned to positive values. Given current and expected conditions, the IOD and SAM are likely to be the major influences on late winter and early spring rainfall across Australia (see Section 1.2).
- The outlook for September 2022 indicates that there is a 75% chance of rainfall totals between 10 and 50 millimetres across much of New South Wales, south-eastern and parts of north-eastern Queensland, Victoria, southern South Australia, the south-west of Western Australia, Tasmania and isolated parts in the north of the Northern Territory. Rainfall totals in excess of 100 millimetres are expected across alpine regions of New South Wales and Victoria, as well as western Tasmania (see Section 1.3).
- Over the 8-days to 18 August 2022, low-pressure troughs and cold fronts are expected to bring rainfall to large areas of south-western and south-eastern Australia. However, high-pressure systems across remaining parts of the country are expected to result in clear, dry conditions. This forecast rainfall is expected to increase soil moisture levels across cropping regions in southern New South Wales, Victoria, South Australia and Western Australia. Across these regions, soil moisture levels have declined in recent months to below average to average levels. Rainfall in parts of southern Queensland and central New South Wales will add to above average soil moisture levels and may lead to waterlogging in isolated areas, negatively impacting crop development (see Section 1.4).
- Water storage in the Murray–Darling Basin (MDB) increased by 698 gigalitres (GL) between 3 August 2022 and 10 August 2022. The current volume of water held in storage is 22,927 GL, which represents 91% of total capacity. This is 15% or 2,997 GL more than at the same time last year.
- Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$79 per ML on 29 July 2022 to \$78 per ML on 5 August 2022. Prices are lower in the Goulburn-Broken and regions above the Barmah choke due to the binding of the Goulburn intervalley trade limit and Barmah choke trade constraint.

# 1. Climate

## 1.1. Rainfall this week

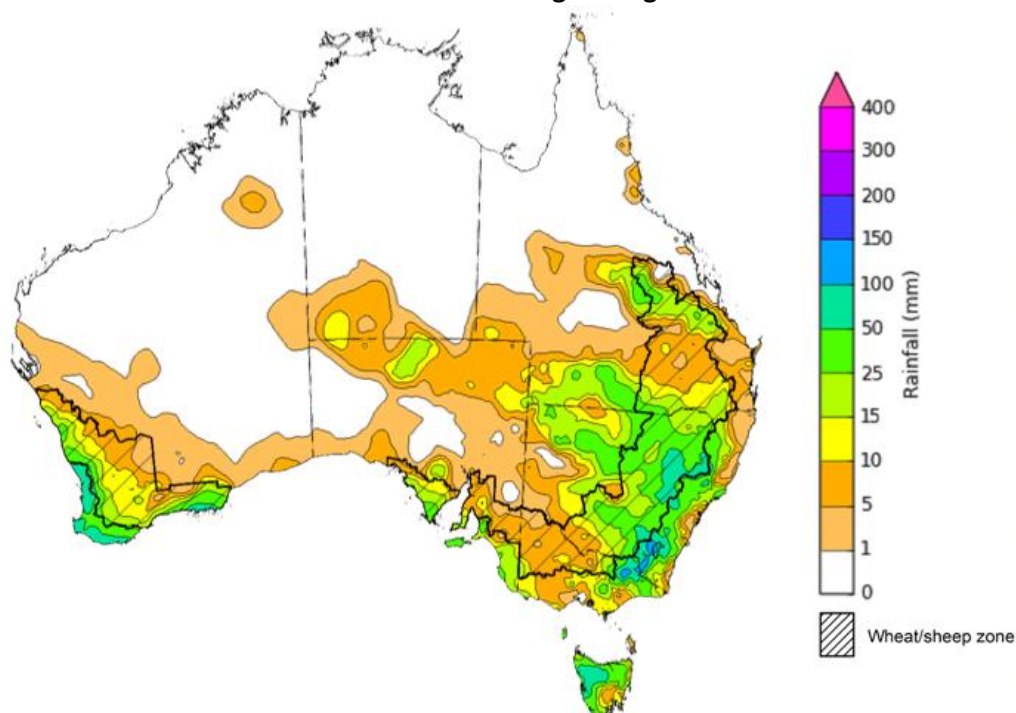
For the week ending 10 August 2022, low-pressure troughs and cold fronts across southern and eastern Australia brought rainfall and strong winds. Over northern parts of the country, high-pressure systems dominated, bringing clear, dry conditions.

Rainfall totals of between 10 and 50 millimetres were recorded across much of New South Wales, southern and central parts of Queensland, the east and south-west of Victoria, parts of southern and northern South Australia, the south-west of Western Australia, most of Tasmania, as well as isolated areas in the south of the Northern Territory. Rainfall totals in excess of 50 millimetres were recorded in alpine areas of New South Wales and Victoria, the central-east of New South Wales, the south-west of Western Australia and western Tasmania. Remaining parts of Australia received little to no rainfall.

In Australian cropping regions, rainfall totals of between 10 and 50 millimetres were recorded across most of New South Wales, parts of southern and northern Queensland, isolated parts of Victoria, western areas of South Australia, as well as most of Western Australia. Rainfall totals in excess of 50 millimetres were recorded across central-eastern cropping regions in New South Wales. Little to no rainfall was recorded across remaining cropping regions for the week ending 10 August 2022.

The moderate rainfall received across central New South Wales and central Queensland over the past 8-days has increased the risk of waterlogging, with soil moisture levels already well above average. Given the late start to the season for many growers, the rain will further delay field access for pest management and top dressing. In Western Australia, rainfall consolidated falls received the previous week, boosting plant available water for the coming weeks. While yield potentials remain favourable at this stage, more rainfall will be needed in spring, and frost events during critical reproductive stages present a significant downside risk to production potential given the advanced growth stage of many crops. Despite limited rainfall across Victoria and South Australia, root zone soil moisture levels remain close to average, with sufficient plant available water to support ongoing crop development.

**Rainfall for the week ending 10 August 2022**



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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

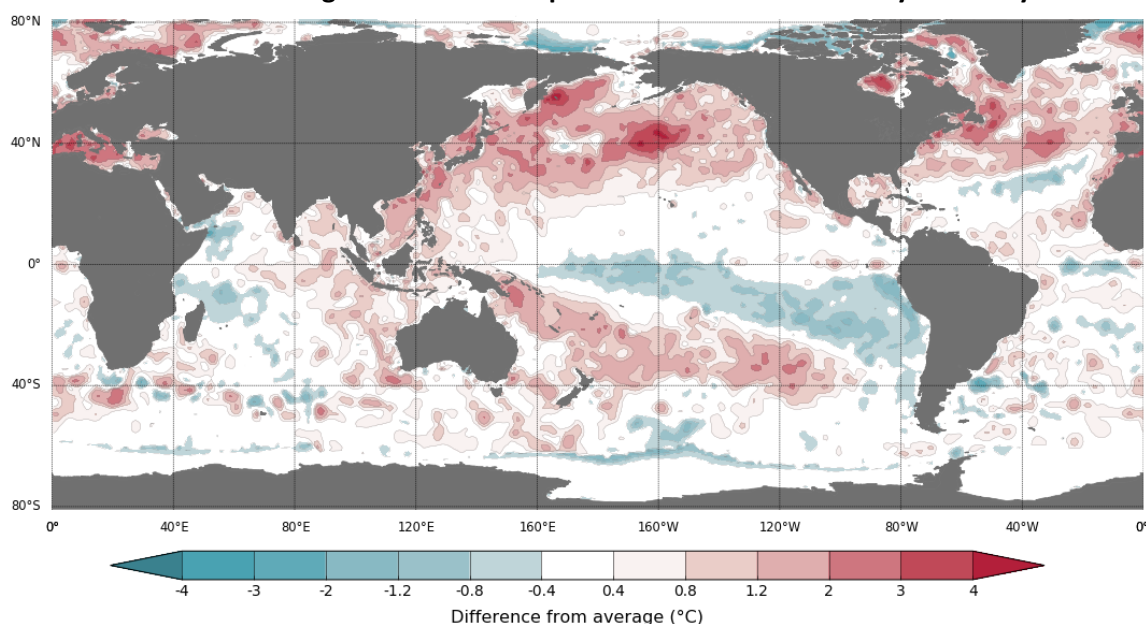
Throughout the late winter and early spring period the climate drivers with the largest potential impact on Australia's climate patterns are the El Niño–Southern Oscillation (ENSO), the Indian Ocean Dipole (IOD) and the Southern Annular Mode (SAM). These climate drivers are likely to influence pasture growth across southern Australia and the growth and yield prospects for winter crops.

Oceanic and atmospheric ENSO indicators remain neutral, reducing its influence on Australia's climate patterns. However, some atmospheric indicators, such as the Southern Oscillation Index and Pacific trade winds have maintained a La Niña-like pattern. Most international climate models expect the ENSO to remain neutral throughout the remainder of winter, although five of the seven models predict the development of a La Niña event in late spring. A negative IOD event has become established in the tropical Indian Ocean, and the SAM has recently returned to positive values. Given current and expected conditions, the IOD and SAM are likely to be the major influences on late winter and early spring rainfall across Australia.

Sea surface temperature (SSTs) anomalies in the tropical Pacific Ocean close to the equator have been cooler than average in some parts and close to average in other parts over the previous week. Small pockets of weak warm anomalies were detected in the eastern Pacific along the equator. SSTs were slightly cooler than average over much of the tropical central and eastern Pacific south of the equator. Neutral Pacific equatorial sea surface temperatures are associated with neutral ENSO conditions.

Warm sea surface temperature anomalies continue across the eastern Indian Ocean and the southern Maritime Continent, while cool anomalies are present near the Horn of Africa and the north-west of the Indian Ocean basin. The temperature gradient established across the tropical Indian Ocean underpin the recent establishment of a negative IOD event.

### Difference from average sea surface temperature observations 25 July to 31 July 2022



Data: BOM SST  
Climatology baseline: 1961 to 1990  
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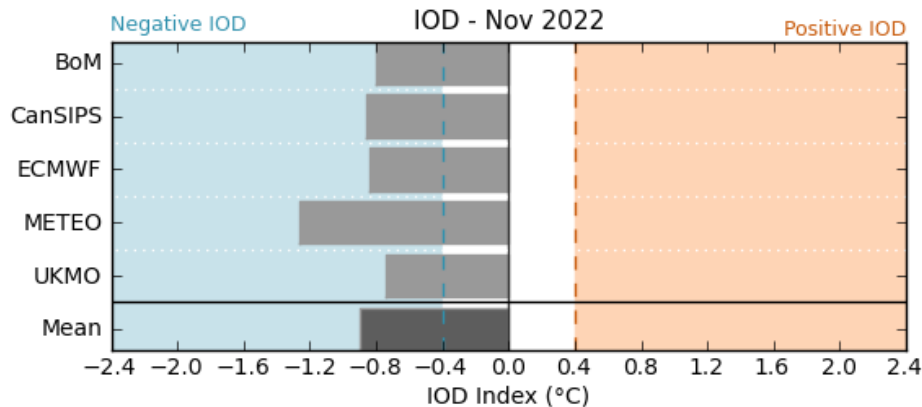
<http://www.bom.gov.au/climate>

Weekly average: 31 July 2022  
Created: 01/08/2022

A negative IOD event is underway, following eight weeks of values close to or exceeding the negative IOD threshold ( $-0.4\text{ }^{\circ}\text{C}$ ). Warmer than average water temperatures in the east of the Indian Ocean and cooler than average temperatures in the west are associated with above average rainfall across southern Australia throughout winter and spring, as well as the far north. It is also associated with the early onset of northern Australia rainfall.

As at 31 July 2022, the Indian Ocean Dipole (IOD) weekly value was  $-0.9^{\circ}\text{C}$ . All international climate models surveyed by the Bureau of Meteorology predict the negative IOD event to persist until late spring.

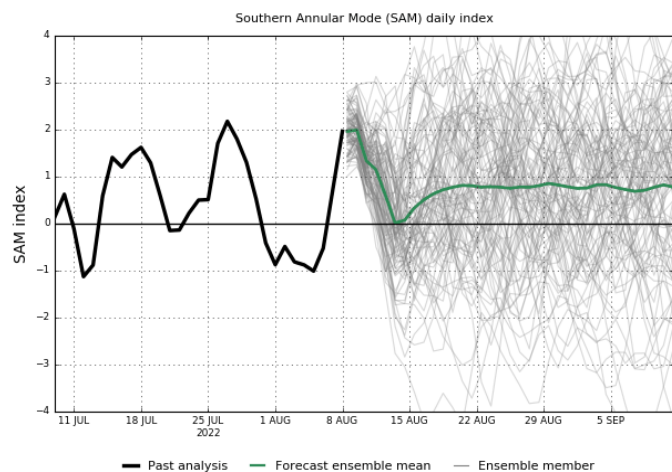
### International climate model outlooks for the IOD index in November 2022



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The Southern Annular Mode (SAM) is currently strongly positive, with neutral and positive values being recorded throughout much of June and July. SAM is expected to return to near-neutral values and remain neutral to positive over the coming weeks. 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. A positive SAM in winter is associated with increased rainfall for parts of eastern Australia. It is also associated with decreased rainfall for western and central Victoria, the south-east of South Australia, the west of Western Australia and Tasmania.

### Southern Annular Mode (SAM) daily index



www.bom.gov.au/climate  
Commonwealth of Australia 2022, Australian Bureau of Meteorology

Model run: 8 Aug 2022 Model: ACCESS-S2  
Base period 1990-2012



### 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 dynamic (physics-based) weather and climate model used for monthly, seasonal and longer-lead climate outlooks.

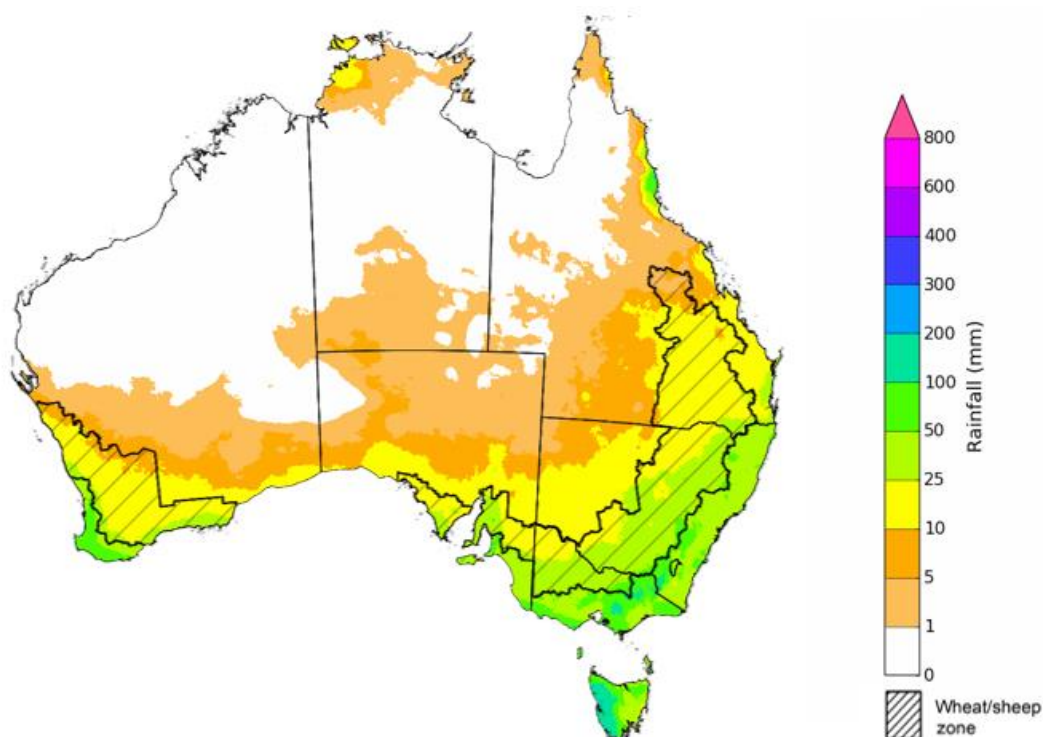
For further information, go to <http://www.bom.gov.au/climate/ahead/about/>

The Bureau of Meteorology's latest rainfall outlook indicates wetter than average conditions are expected across most of Australia during September. The ACCESS-S climate model suggests there is close to a 60% chance of exceeding median for parts of eastern, central and much of western Australia, with below median rainfall likely for the south-west of Western Australia, south-western Victoria and western Tasmania.

The outlook for September 2022 indicates that there is a 75% chance of rainfall totals between 10 and 50 millimetres across much of New South Wales, south-eastern and parts of north-eastern Queensland, Victoria, southern South Australia, the south-west of Western Australia, Tasmania and isolated parts in the north of the Northern Territory. Rainfall totals in excess of 100 millimetres are expected across alpine regions of New South Wales and Victoria, as well as western Tasmania.

Across cropping regions there is a 75% chance of rainfall totals of between 25 and 50 millimetres across eastern New South Wales, southern Victoria, central South Australia and isolated parts of Western Australia. There is a 75% chance of rainfall less than 25 millimetres for northern and western New South Wales, the northwest of Victoria, parts of eastern and western South Australia, most of Queensland, and central and eastern cropping regions in Western Australia. These falls are likely to be sufficient to support the current yield potential of winter crops and average or better pasture growth potential, given average to above average soil moisture level across most southern Australian growing regions.

**Rainfall totals that have a 75% chance of occurring September 2022**



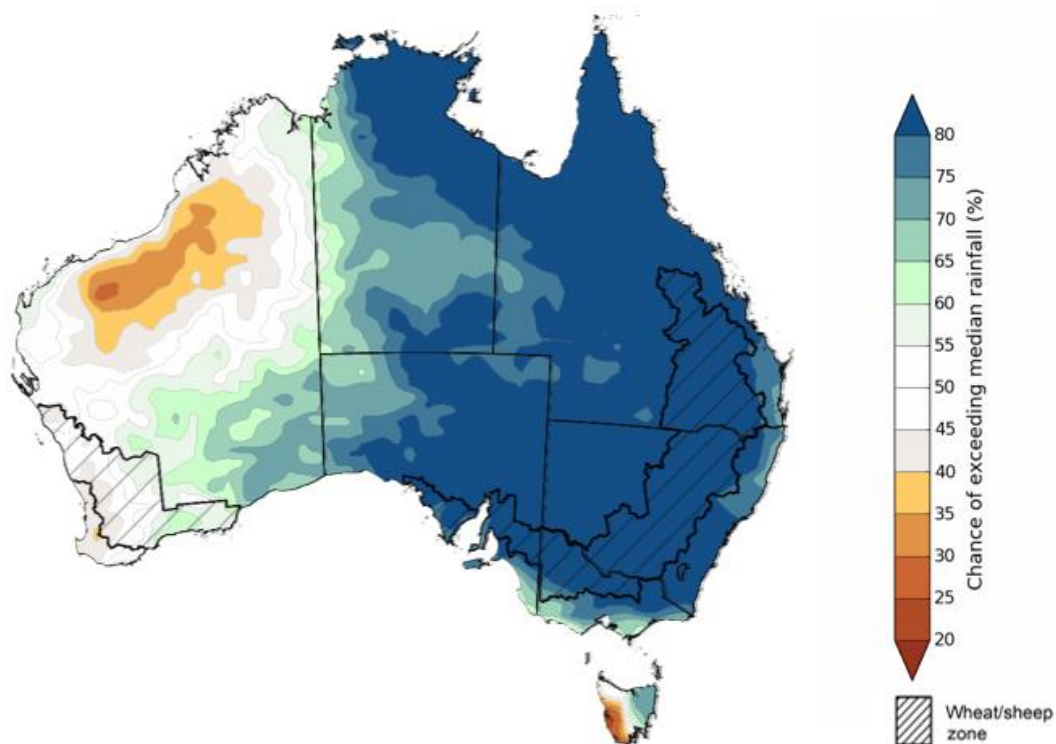
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Issued: 04/08/2022

The rainfall outlook for September to November 2022 suggests there is a greater than 75% chance of exceeding median rainfall across most of New South Wales, Queensland, Victoria, South Australia and the Northern Territory. For remaining regions of Australia, there is no strong tendency towards above or below median rainfall, except for parts of north-western Western Australia and south-western Tasmania where below median rainfall is likely between September to November 2022 (Bureau of Meteorology 'National Climate Outlook', 4 August 2022).

Bureau of Meteorology rainfall outlooks for September to November have greater than 55% past accuracy across most of eastern and central Australia. Outlook accuracy is greater than 65% across large areas of New South Wales, Victoria and parts of Queensland. Past accuracy is low (less than 50%) for western and southern parts of Western Australia.

### Chance of exceeding the median rainfall September to November 2022



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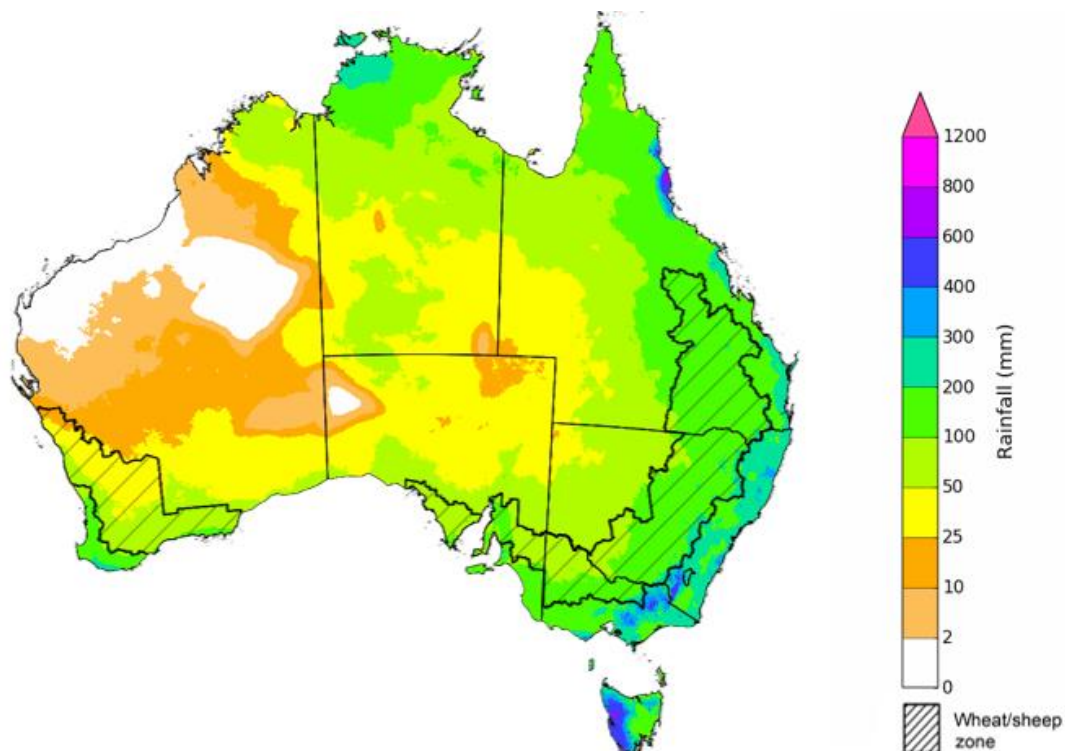
Issued: 04/08/2022

The outlook for September to November 2022 suggests there is a 75% chance of rainfall totals between 50 and 200 millimetres across Victoria, most of New South Wales and Queensland, southern parts of South Australia, the south-west and far north of Western Australia, Tasmania and the north and south-west of the Northern Territory. Rainfall totals in excess of 200 millimetres are forecast for alpine regions of New South Wales and Victoria, coastal areas of New South Wales, Queensland and Victoria, the far north of the Northern Territory and western Tasmania.

Across cropping regions, there is a 75% chance of receiving between 50 and 100 millimetres across parts of western New South Wales, north-western Victoria, much of South Australia and southern parts of Western Australia. Totals of between 100 and 200 millimetres are expected across much of eastern New South Wales and Queensland, southern Victoria and central South Australia.

The high probability of above average rainfall across eastern and southern cropping regions through spring is likely to provide mixed results. For much of southern New South Wales, Victoria and South Australia, where winter crops were planted in a timely manner and conditions have been favourable thus far, above average rainfall and mild temperatures will support strong yield development through spring. However, above average rainfall across central and northern New South Wales and Queensland is likely to exacerbate waterlogging issues, contribute to the leaching of fertilizers and impede crop development. These all present a potential downside risk of realising current strong crop yield predictions. However, for regions that avoid waterlogging issues, the rainfall will improve yield potentials. If realised, the near-average rainfall outlook for Western Australia through spring should be sufficient to support winter crops through critical development stages, and setup winter crops for strong yields.

#### Rainfall totals that have a 75% chance of occurring September to November 2022

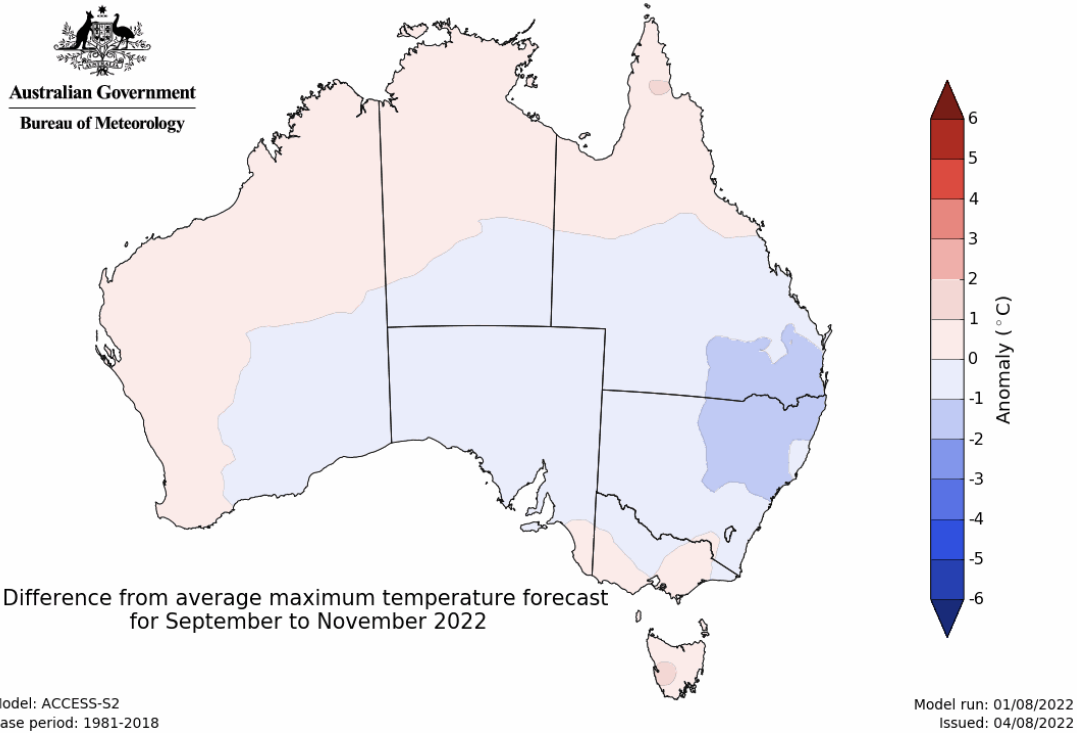


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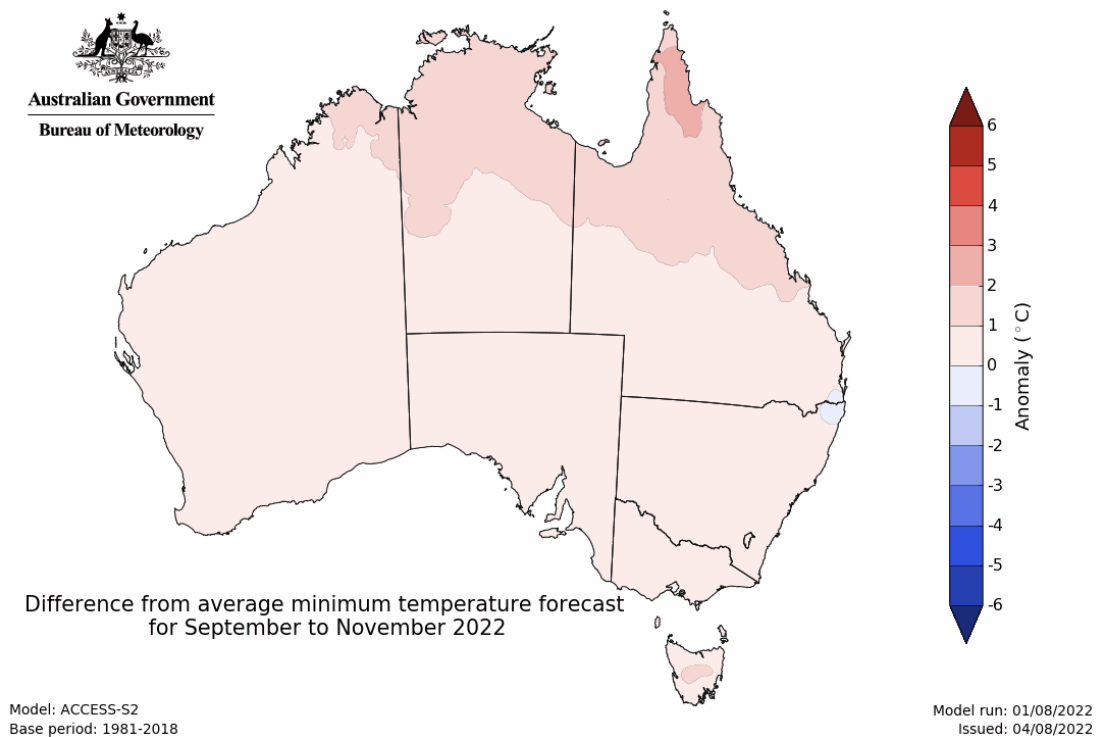
Issued: 04/08/2022

The temperature outlook for September to November 2022 indicates that maximum temperatures across most of Australia are likely to be close to the 1990-2012 average (the difference in the range of -1°C to +1°C), with slightly lower than average temperatures across northern New South Wales and southern Queensland. Minimum temperatures are expected to be slightly above average for much of the northern Australia, and close to average for the rest of Australia (Bureau of Meteorology 'National Climate Outlook', 4 August 2022).

### Predicted maximum temperature anomaly for September to November 2022



### Predicted minimum temperature anomaly for September to November 2022





## 1.4. Rainfall forecast for the next eight days

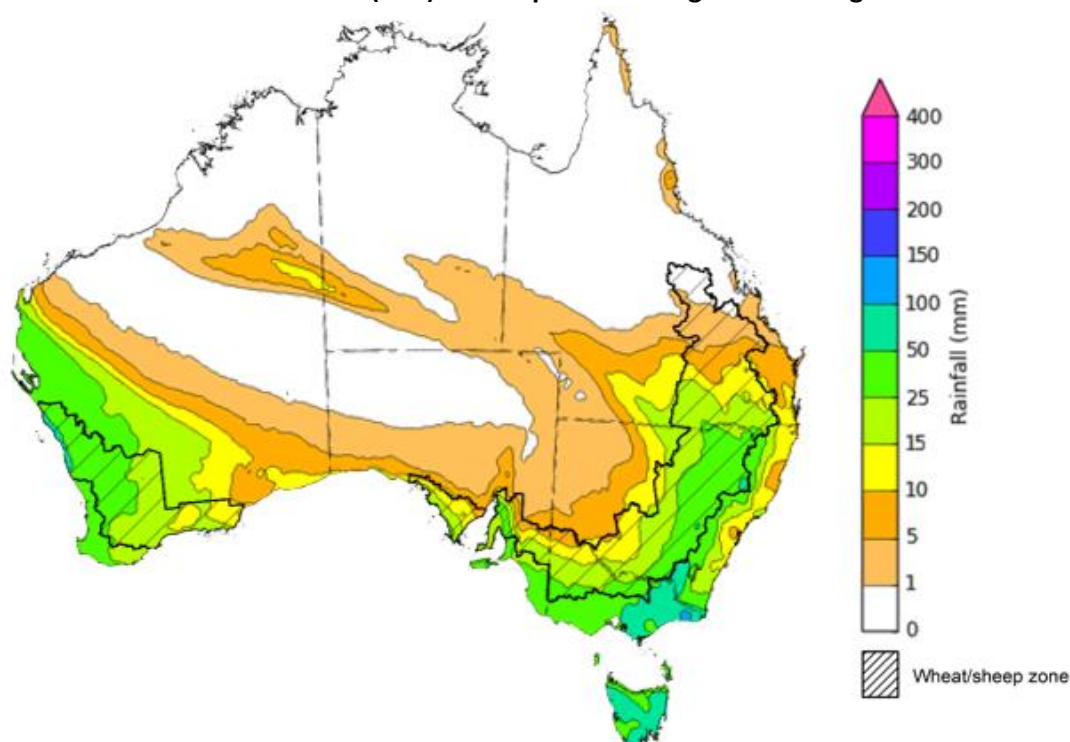
Over the 8-days to 18 August 2022, low-pressure troughs and cold fronts are expected to bring rainfall to large areas of south-western and south-eastern Australia. However, high-pressure systems across remaining parts of the country are expected to result in clear, dry conditions.

Rainfall totals of between 10 and 50 millimetres are forecast for much of central and eastern New South Wales, Victoria, southern Queensland, the south-east of South Australia and south-west of Western Australia. Rainfall totals in excess of 50 millimetres are forecast for alpine regions of New South Wales, eastern Victoria and most of Tasmania. Little to no rainfall is forecast across remaining parts of Australia over the next 8-days.

In Australian cropping regions, rainfall totals of between 10 and 50 millimetres are expected across most of New South Wales, Victoria and South Australia, southern Queensland and Western Australia. Little to no rainfall is forecast for all remaining cropping regions during the next 8-days.

This forecast rainfall is expected to increase soil moisture levels across cropping regions in southern New South Wales, Victoria, South Australia and Western Australia. Across these regions, soil moisture levels have declined in recent months to below average to average levels. The expected rainfall will support the continued development of winter crops over the coming weeks. Rainfall in parts of southern Queensland and central New South Wales will add to above average soil moisture levels and may lead to waterlogging in isolated areas, negatively impacting crop development. However, dry conditions are forecast for most northern and central Queensland winter cropping regions, allowing soil profiles to drain, benefitting winter crop development.

**Total forecast rainfall (mm) for the period 11 August to 18 August 2022**



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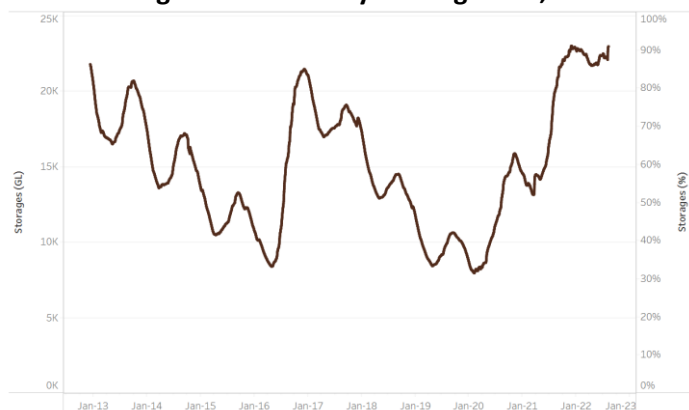
Note: This rainfall forecast is produced from computer models. As the model outputs are not altered by weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.

## 2. Water

### 2.1. Water markets – current week

Water storage in the Murray–Darling Basin (MDB) increased by 698 gigalitres (GL) between 3 August 2022 and 10 August 2022. The current volume of water held in storage is 22,927 GL, which represents 91% of total capacity. This is 15% or 2,997 GL more than at the same time last year.

**Water storages in the Murray-Darling Basin, 2013–2022**

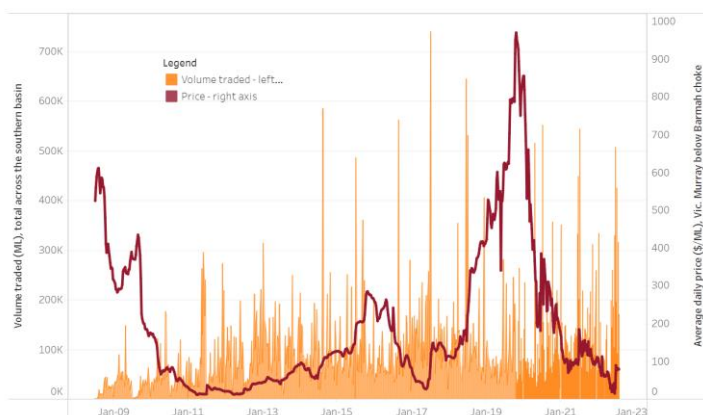


Water storage data is sourced from the Bureau of Meteorology.

Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$79 per ML on 29 July 2022 to \$78 per ML on 5 August 2022. Prices are lower in the Goulburn-Broken and regions above the Barmah choke due to the binding of the Goulburn intervalley trade limit and Barmah choke trade constraint.

Region	\$/ML
NSW Murray Above	46
NSW Murrumbidgee	78
VIC Goulburn-Broken	66
VIC Murray Below	78

**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 11 August 2022.

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-110822](http://www.agriculture.gov.au/abares/products/weekly_update/weekly-update-110822)

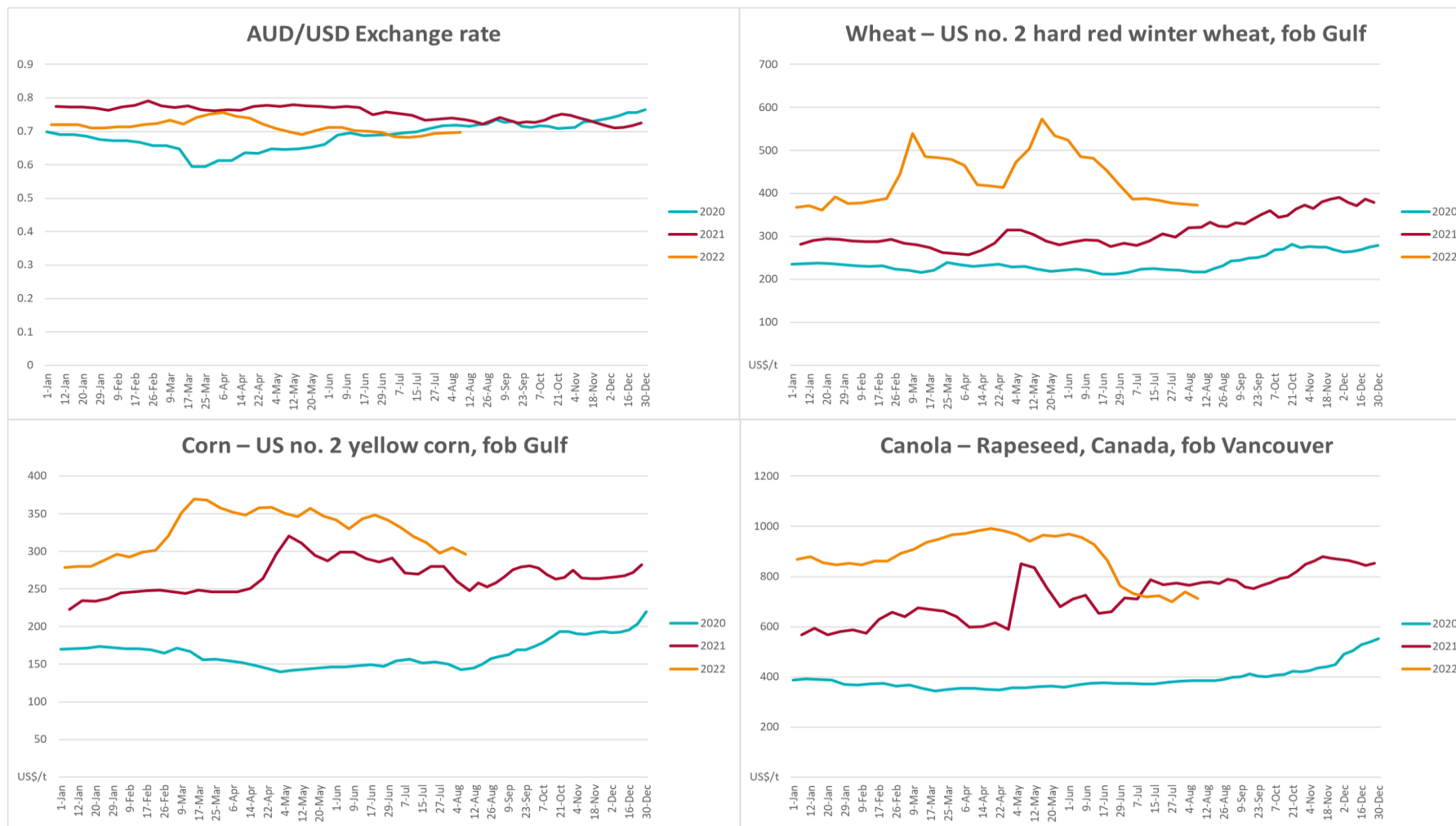
### 3. Commodities

Indicator	Week ended	Unit	Latest price	Previous week	Weekly change	Price 12 months ago	Annual change
<b>Selected world indicator prices</b>							
AUD/USD Exchange rate	10-Aug	A\$/US\$	0.70	0.69	0%	0.73	-5%
Wheat – US no. 2 hard red winter wheat, fob Gulf	10-Aug	US\$/t	373	375	-1%	333	12%
Corn – US no. 2 yellow corn, fob Gulf	10-Aug	US\$/t	296	305	-3%	258	15%
Canola – Rapeseed, Canada, fob Vancouver	10-Aug	US\$/t	712	740	-4%	779	-9%
Cotton – Cotlook 'A' Index	10-Aug	USc/lb	115	112	3%	103	12%
Sugar – Intercontinental Exchange, nearby futures, no.11 contract	10-Aug	USc/lb	18.0	17.8	2%	21	-13%
Wool – Eastern Market Indicator	06-Jul	Ac/kg clean	1,388	1,407	-1%	1,315	6%
Wool – Western Market Indicator	06-Jul	Ac/kg clean	1,473	1,486	-1%	1,333	11%
<b>Selected Australian grain export prices</b>							
Milling Wheat – APW, Port Adelaide, SA	10-Aug	A\$/t	561	576	-3%	409	37%
Feed Wheat – ASW, Port Adelaide, SA	10-Aug	A\$/t	521	535	-3%	405	29%
Feed Barley – Port Adelaide, SA	10-Aug	A\$/t	481	493	-2%	333	44%
Canola – Kwinana, WA	10-Aug	A\$/t	1,107	1,126	-2%	846	31%
Grain Sorghum – Brisbane, QLD	03-Aug	A\$/t	436	434	1%	365	19%
<b>Selected domestic livestock indicator prices</b>							
Beef – Eastern Young Cattle Indicator	10-Aug	Ac/kg cwt	935	908	3%	995	-6%
Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic	10-Aug	Ac/kg cwt	517	521	-1%	704	-27%
Lamb – Eastern States Trade Lamb Indicator	10-Aug	Ac/kg cwt	716	619	16%	924	-22%
Pig – Eastern Seaboard (60.1–75 kg), average of buyers & sellers	27-Jul	Ac/kg cwt	376	377	0%	328	15%
Goats – Eastern States (12.1–16 kg)	12-Jan	Ac/kg cwt	879	879	0%	818	8%
Live cattle – Light steers ex Darwin to Indonesia	01-Jun	Ac/kg lwt	480	480	0%	320	50%
Live sheep – Live wethers (Muchea WA saleyard) to Middle East	20-Apr	\$/head	113	113	0%	122	-7%

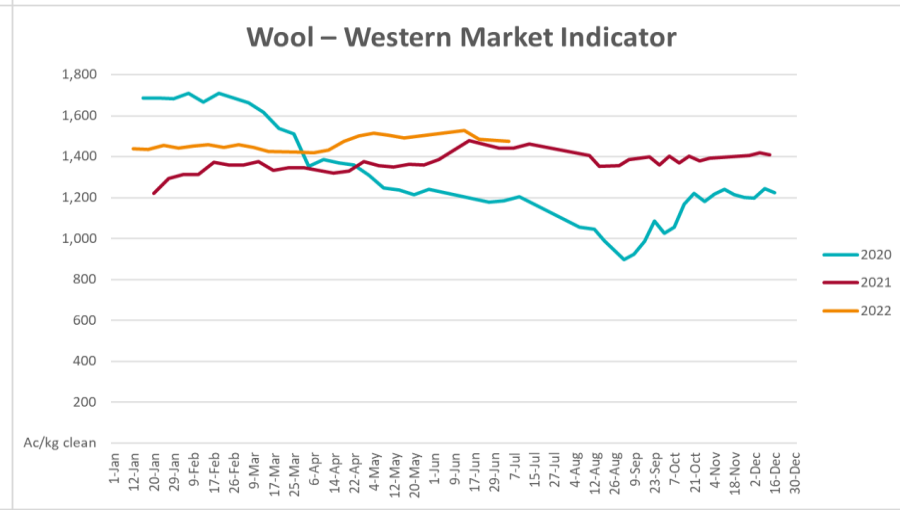
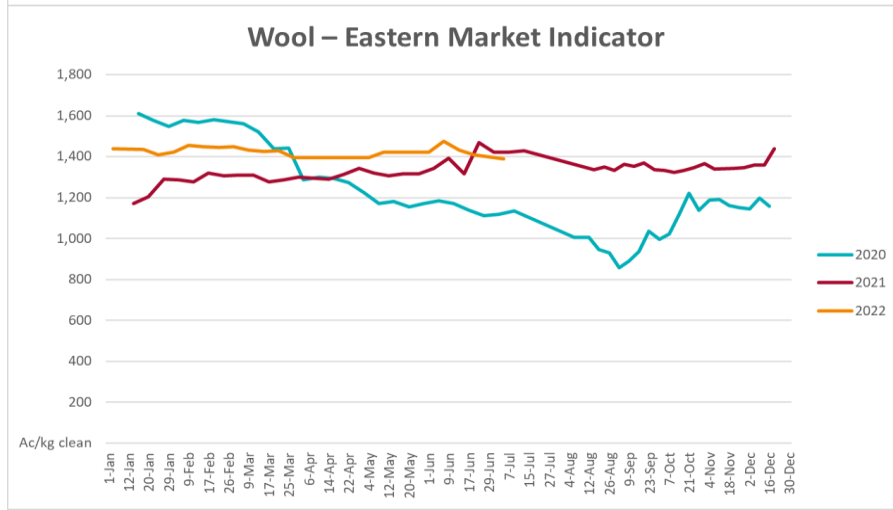
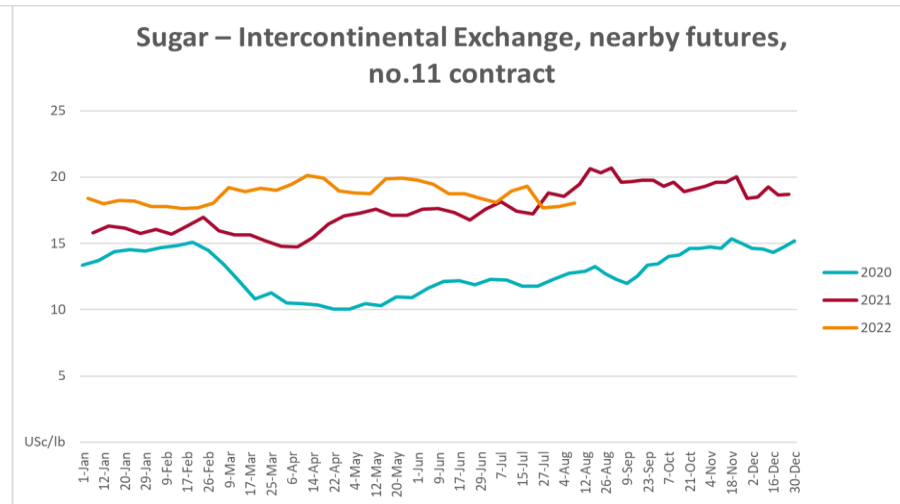
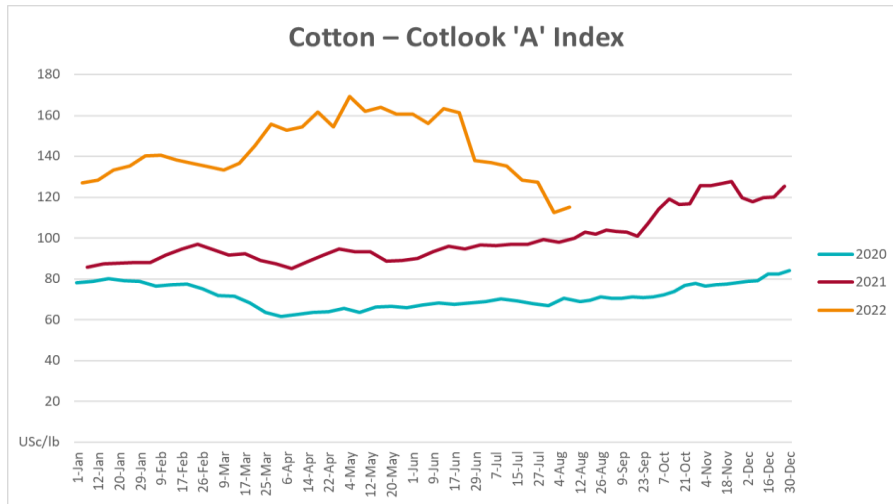
Indicator	Week ended	Unit	Latest price	Previous week	Weekly change	Price 12 months ago	Annual change
<b>Global Dairy Trade (GDT) weighted average prices <sup>a</sup></b>							
Dairy – Whole milk powder	03-Aug	US\$/t	3,544	3,757	-6%	2,829	25%
Dairy – Skim milk powder	03-Aug	US\$/t	3,524	3,709	-5%	2,609	35%
Dairy – Cheddar cheese	03-Aug	US\$/t	4,798	4,825	-1%	3,631	32%
Dairy – Anhydrous milk fat	03-Aug	US\$/t	5,518	5,580	-1%	3,993	38%

<sup>a</sup> Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.

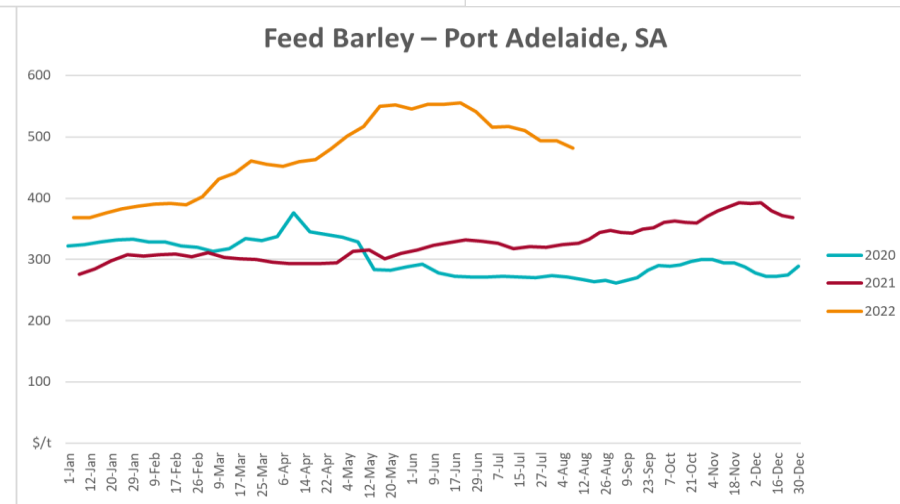
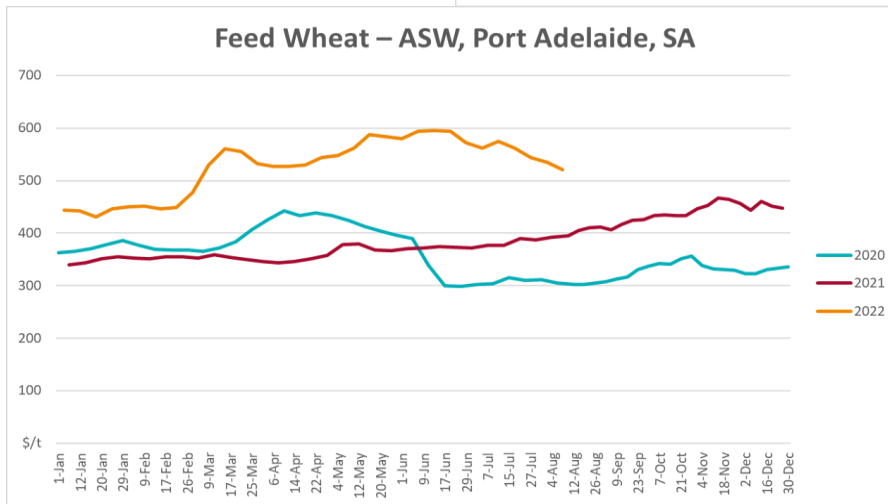
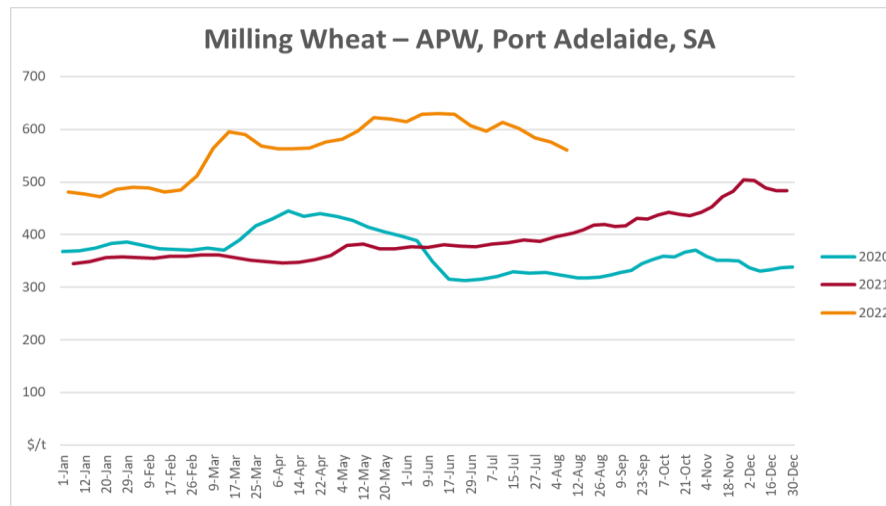
### 3.1. Selected world indicator prices

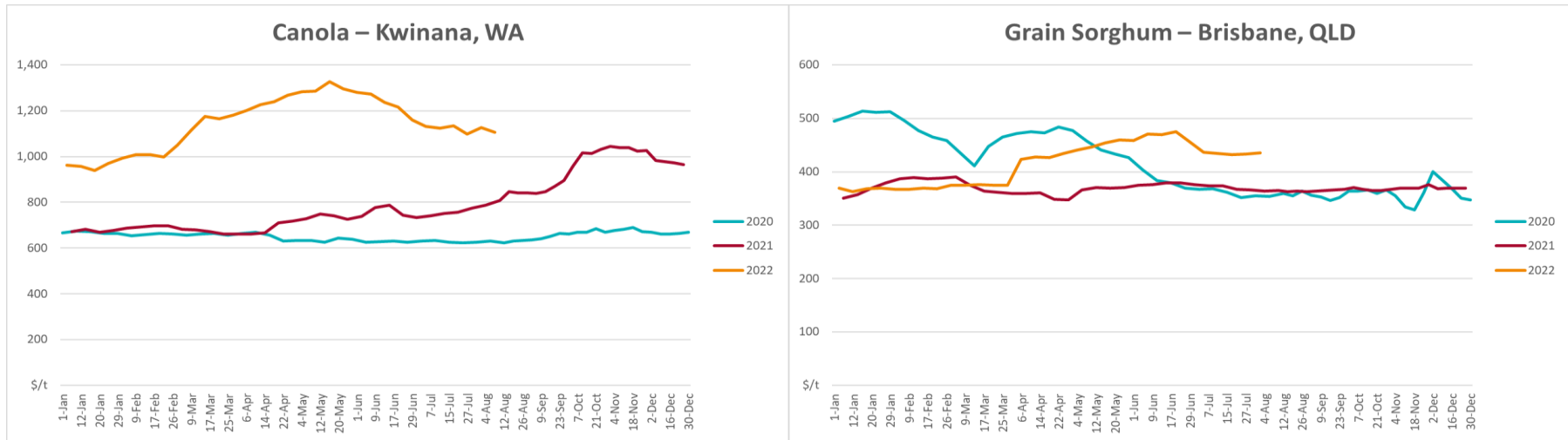




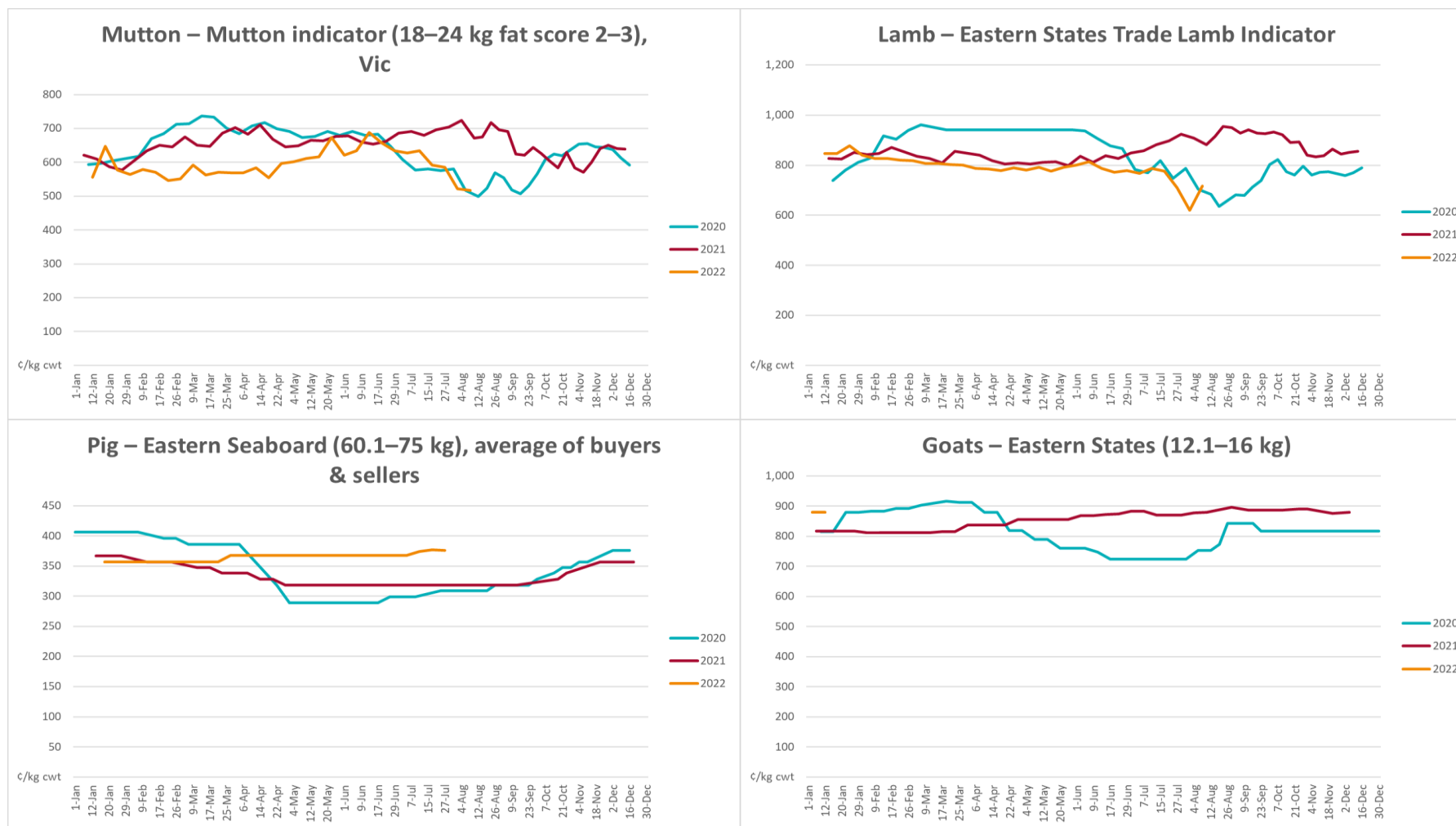


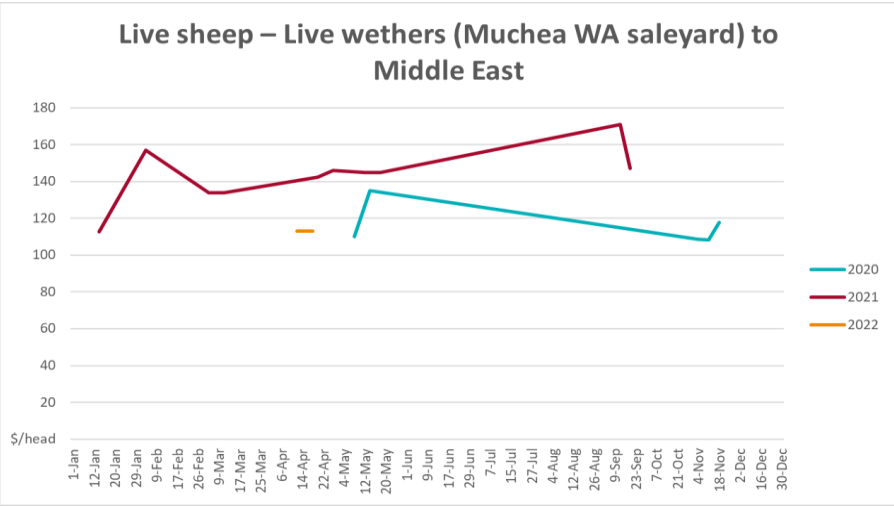
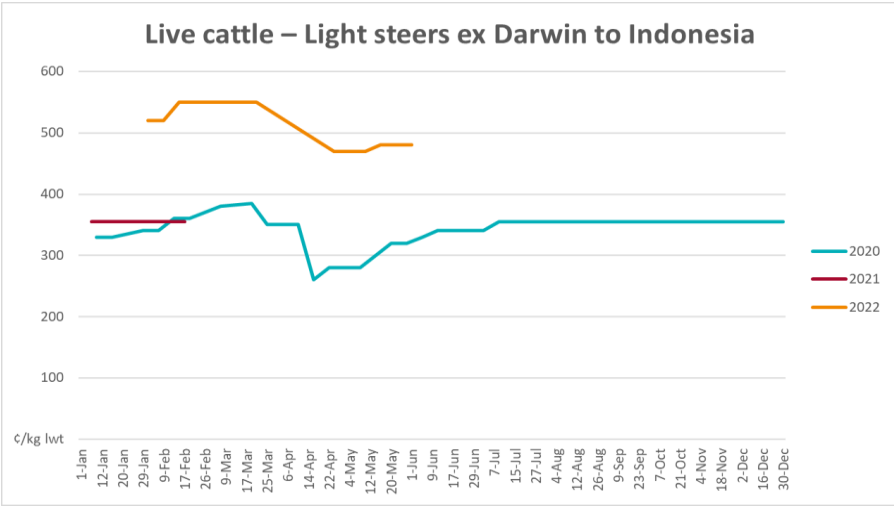
### 3.2. Selected domestic crop indicator prices





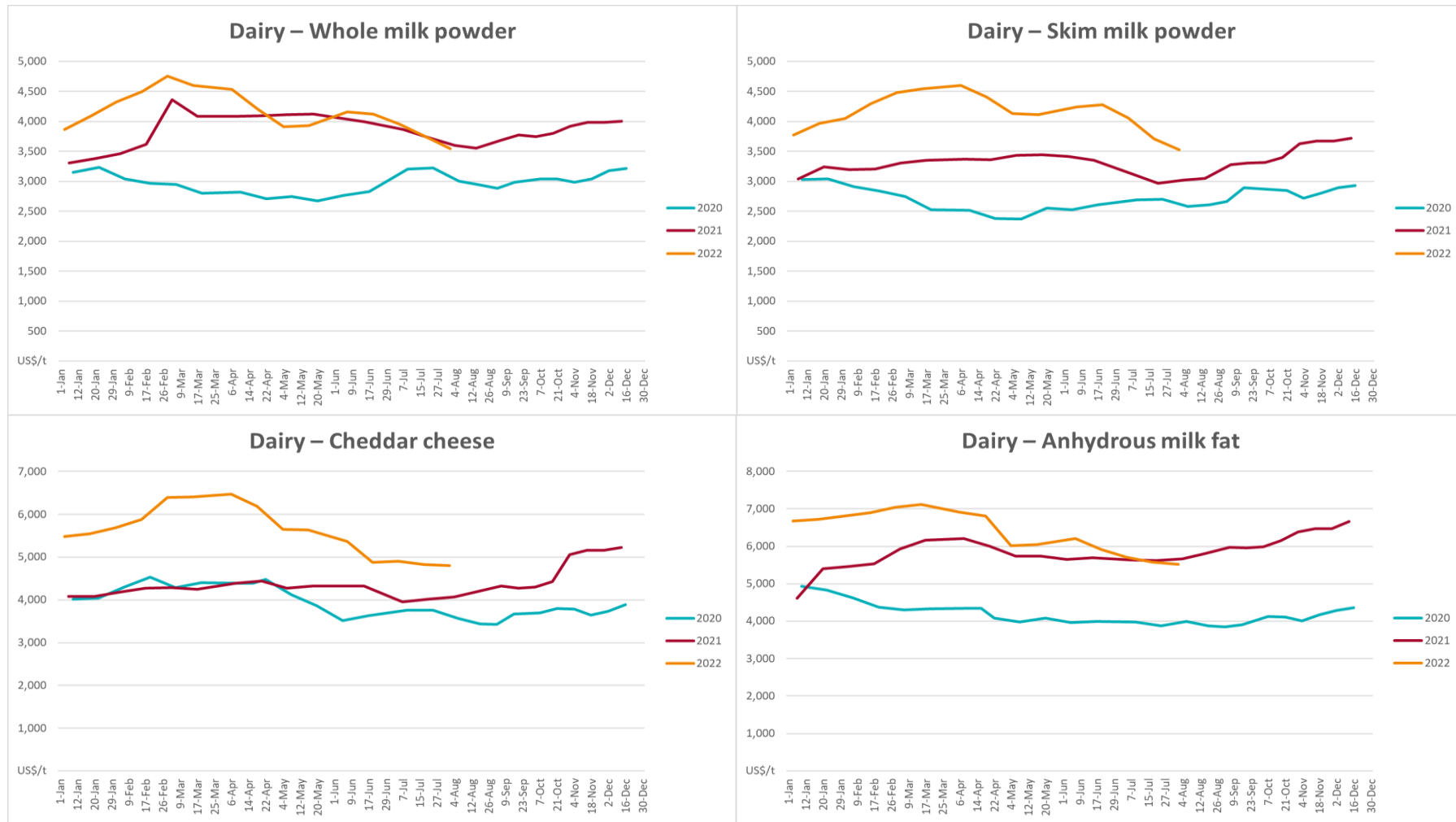
### 3.3. Selected domestic livestock indicator prices



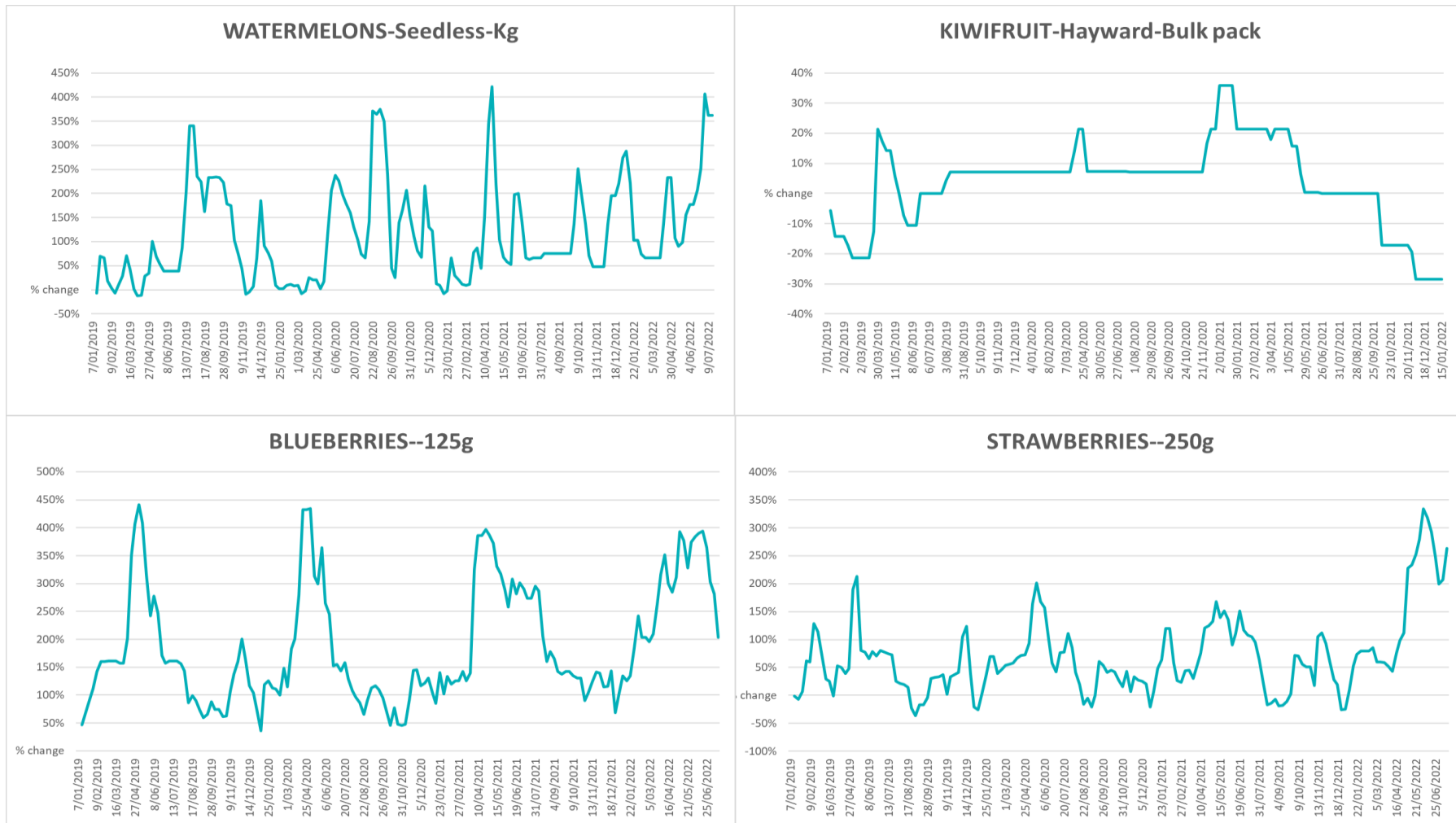


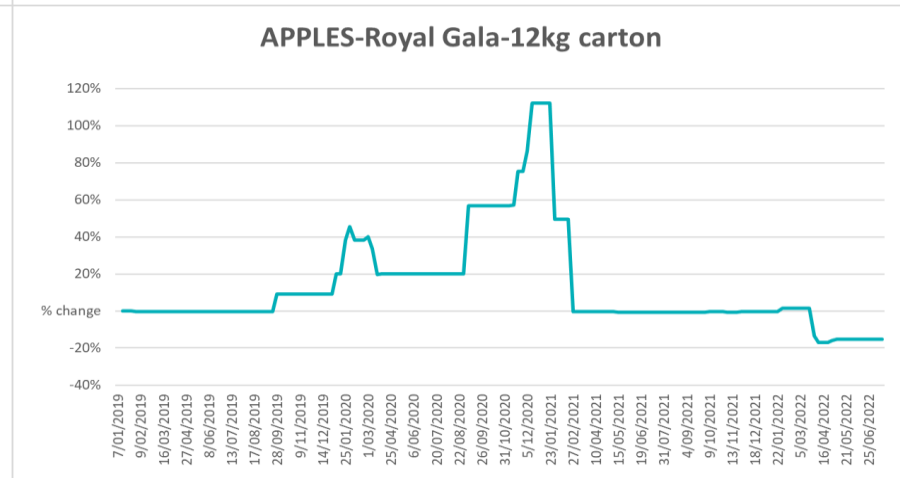
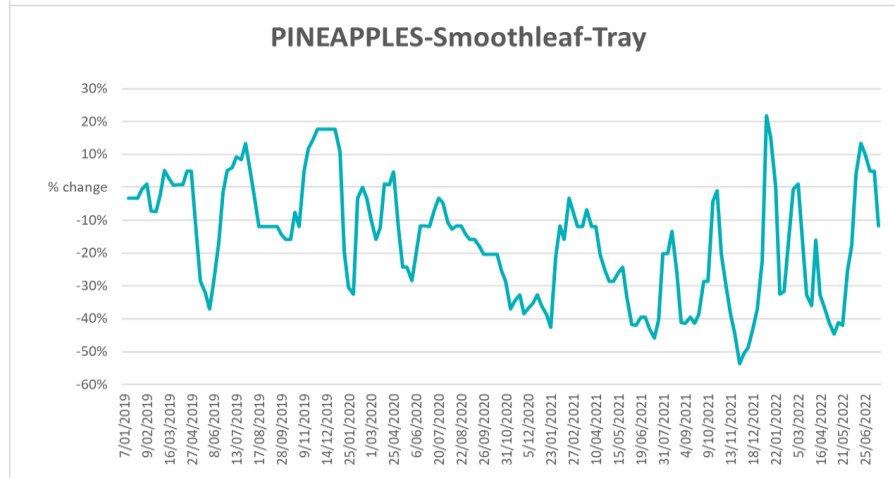
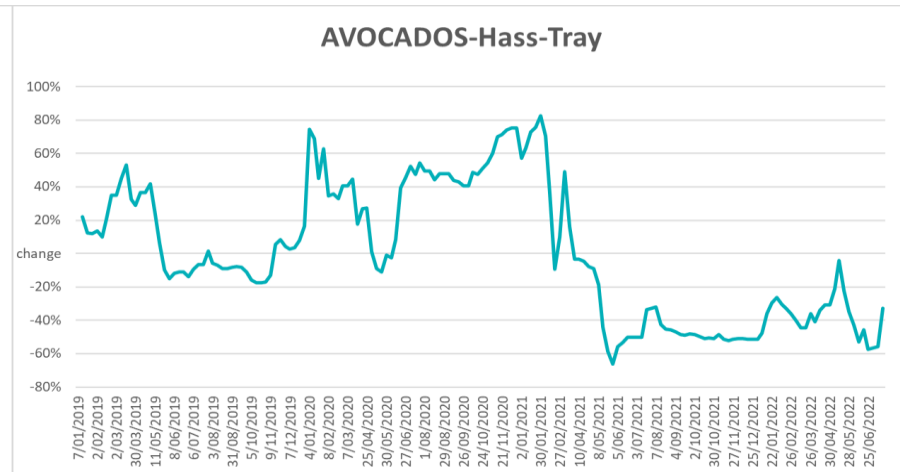
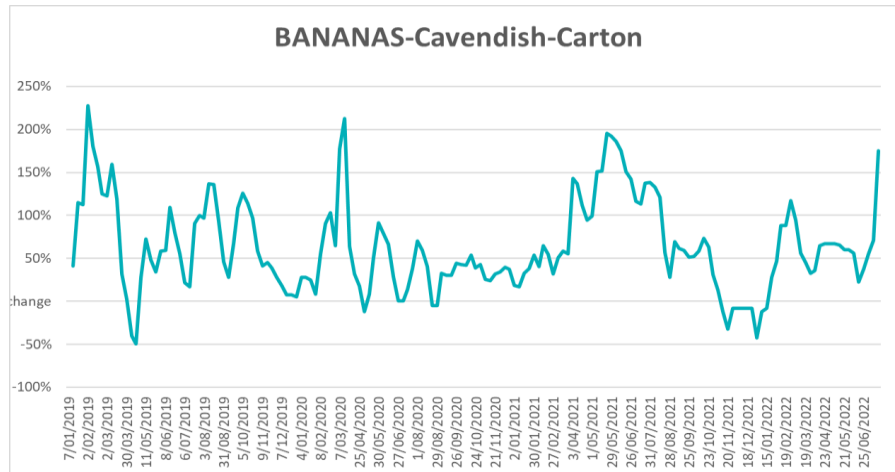


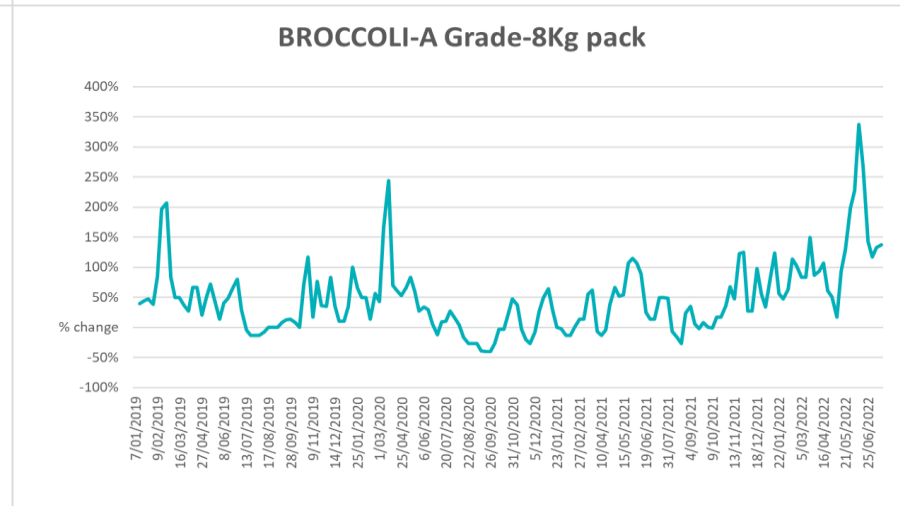
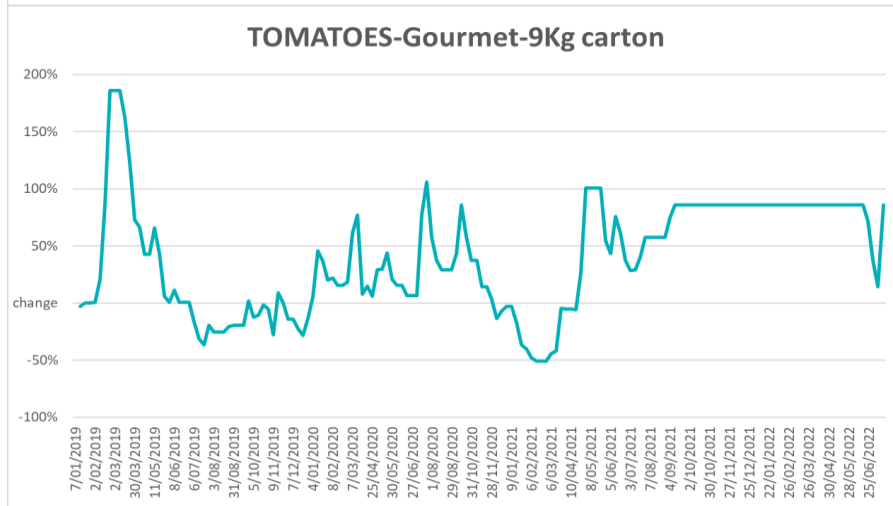
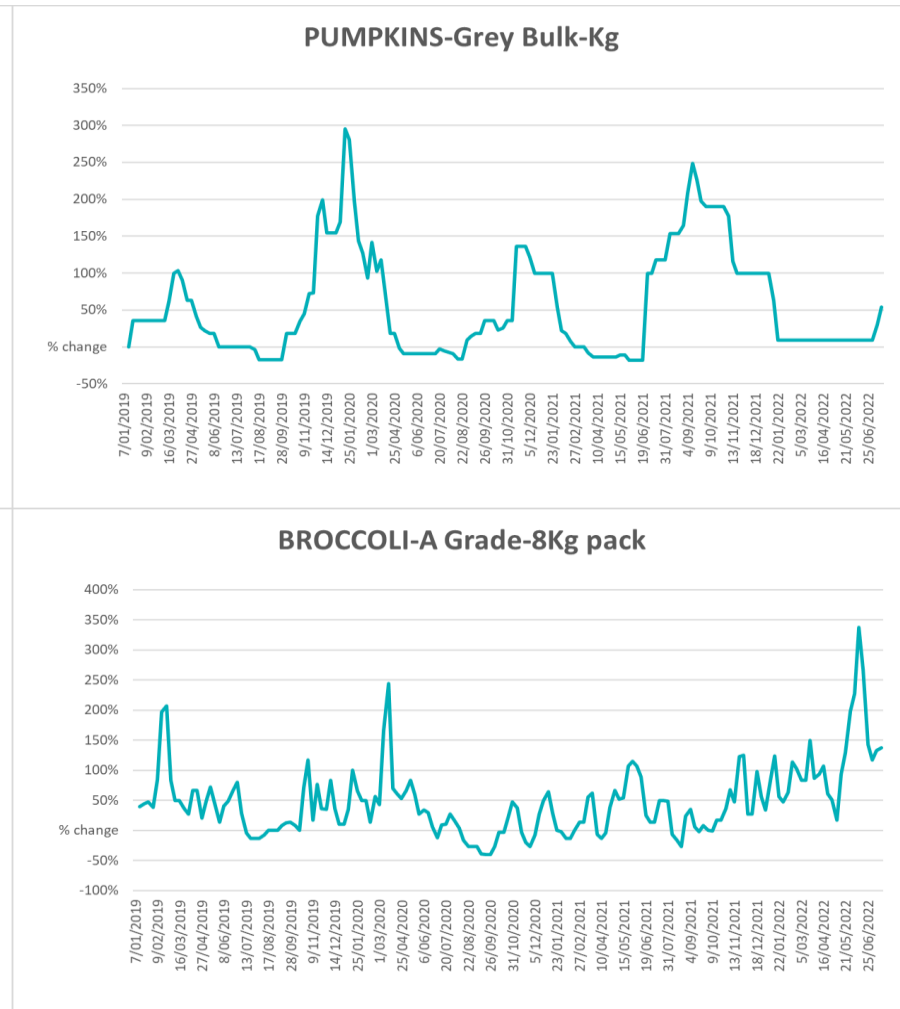
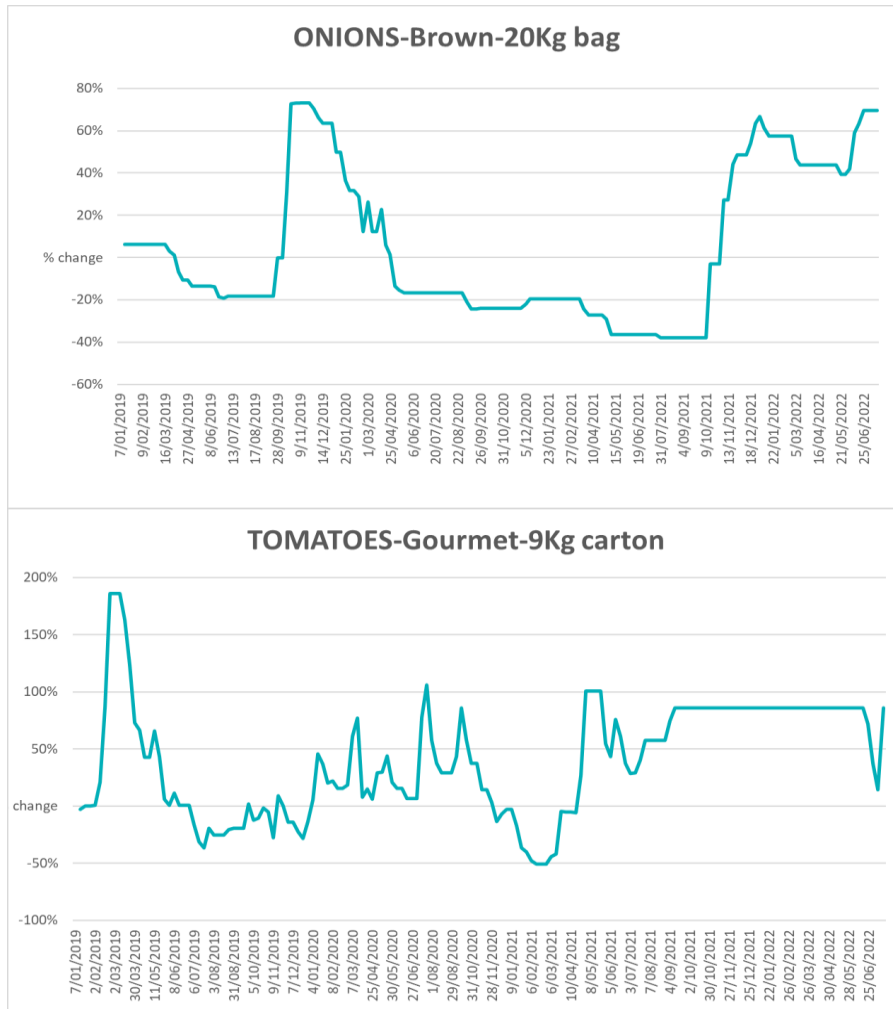
### 3.4. Global Dairy Trade (GDT) weighted average prices

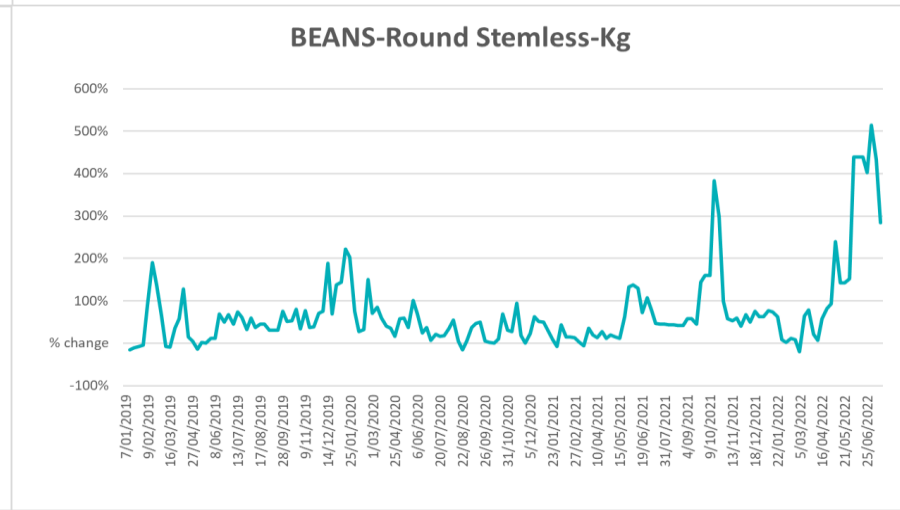
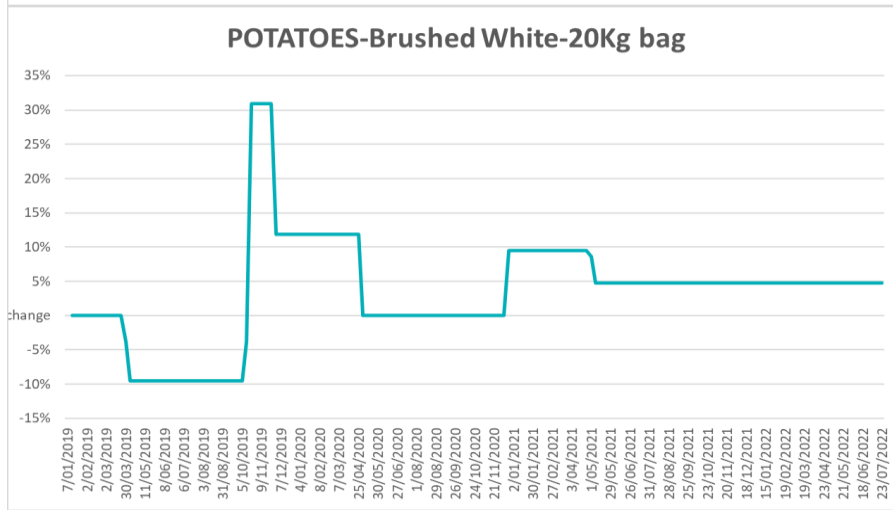
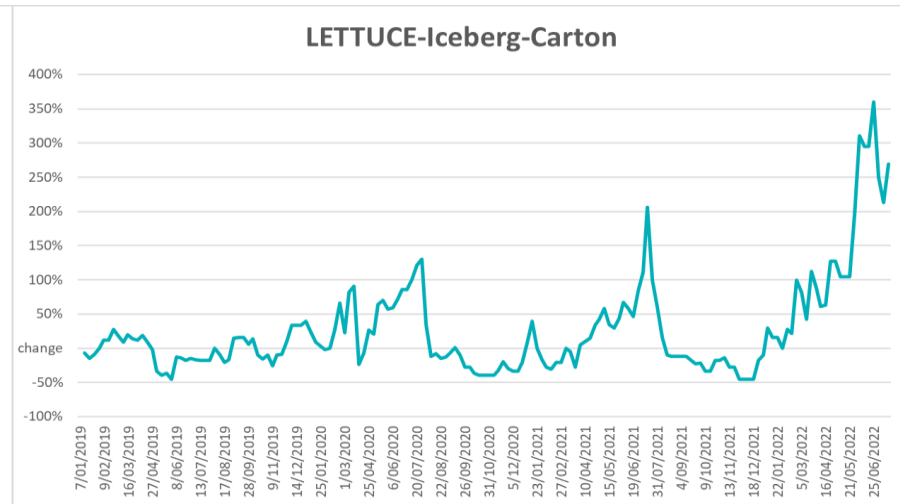
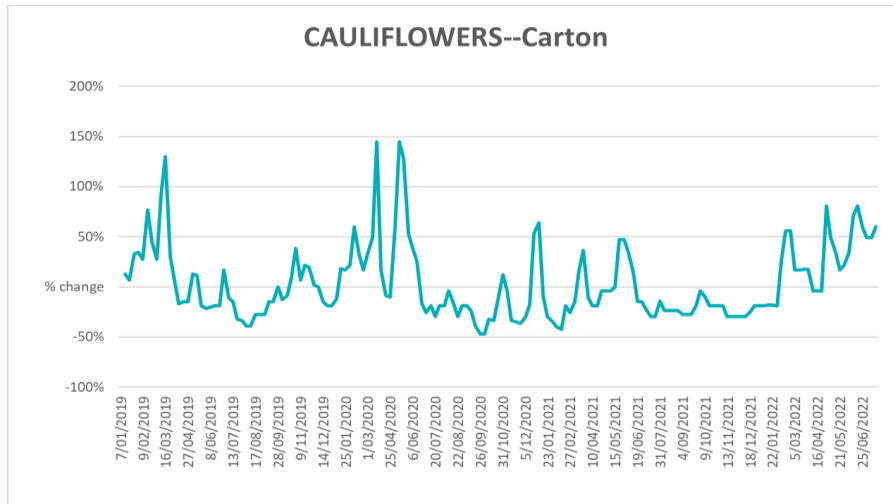


### 3.5. Selected fruit and vegetable prices



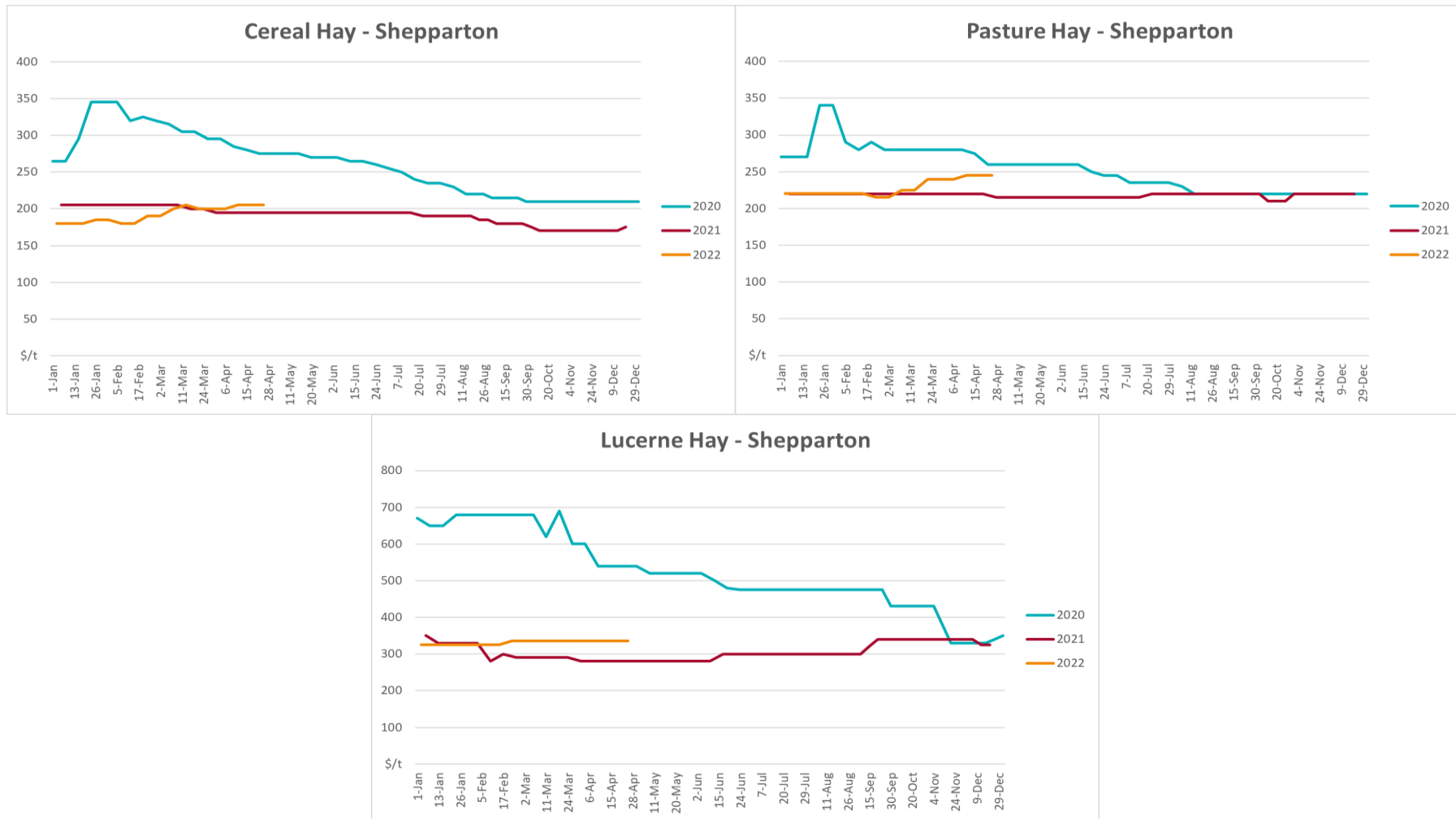








### 3.6. Selected domestic fodder indicator prices



## 4. Data attribution

### Climate

#### Bureau of Meteorology

- Weekly rainfall totals: [www.bom.gov.au/climate/maps/rainfall/](http://www.bom.gov.au/climate/maps/rainfall/)
- Monthly and last 3-month rainfall percentiles: [www.bom.gov.au/water/landscape/](http://www.bom.gov.au/water/landscape/)
- Temperature anomalies: [www.bom.gov.au/jsp/awap/temp/index.jsp](http://www.bom.gov.au/jsp/awap/temp/index.jsp)
- Rainfall forecast: [www.bom.gov.au/jsp/watl/rainfall/pme.jsp](http://www.bom.gov.au/jsp/watl/rainfall/pme.jsp)
- Seasonal outlook: [www.bom.gov.au/climate/outlooks/#/overview/summary/](http://www.bom.gov.au/climate/outlooks/#/overview/summary/)
- Climate drivers: <http://www.bom.gov.au/climate/enso/>
- Soil moisture: [www.bom.gov.au/water/landscape/](http://www.bom.gov.au/water/landscape/)

#### Other

- Pasture growth: [www.longpaddock.qld.gov.au/aussiegrass/](http://www.longpaddock.qld.gov.au/aussiegrass/)
- 3-month global outlooks: [Environment and Climate Change Canada](#), [NOAA Climate Prediction Center](#), [EUROBRISA CPTec/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

#### Prices

- Waterflow: <https://www.waterflow.io/>
- Ruralco: <https://www.ruralcowater.com.au/>

#### Bureau of Meteorology:

- Allocation trade: <http://www.bom.gov.au/water/dashboards/#/water-markets/mbd/at>
- Storage volumes: <http://www.bom.gov.au/water/dashboards/#/water-storages/summary/drainage>

#### Trade constraints:

- Water NSW: <https://www.waternsw.com.au/customer-service/ordering-trading-and-pricing/trading/murrumbidgee>
- Victorian Water Register: <https://www.waterregister.vic.gov.au/TradingRules2019/>

### Commodities

#### Fruit and vegetables

- Datafresh: [www.freshstate.com.au](http://www.freshstate.com.au)

#### Pigs

- Australian Pork Limited: [www.australianpork.com.au](http://www.australianpork.com.au)

#### Dairy

- Global Dairy Trade: [www.globaldairytrade.info/en/product-results/](http://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/](http://www.cotlook.com/)

#### World sugar

- New York Stock Exchange - Intercontinental Exchange

#### Wool

- Australian Wool Exchange: [www.awex.com.au/](http://www.awex.com.au/)

#### Domestic wheat, barley, sorghum, canola and fodder

- 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](http://www.mla.com.au/Prices-and-market)

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