



Weekly Australian Climate, Water and Agricultural Update

No. 40/2023

12 October 2023

Summary of key issues

- For the week ending 10 October 2023, a trough brought heavy rainfall, up to 100 millimetres, and damaging winds to southeastern Australia earlier in the week. Cold fronts brought showers to western Tasmania. A high-pressure system kept the remainder of the country dry (see Section 1.1).
- Across cropping regions, rainfall totals of up to 50 millimetres were recorded in New South Wales and up to 25 millimetres in parts of eastern Victoria. Little to no rainfall was recorded in the remaining cropping areas. Given the lack of rainfall across most cropping regions and continuous decline in soil moisture reserves, together with above average daytime temperatures, there is an increased risk of reductions in crop yields at harvest (see Section 1.1).
- The northern Australia rainfall onset is yet to occur. Between 1 September and 10 October 2023, the only region that recorded an early onset with at least 50 millimetres of rain is the coastal northeast Queensland (see Section 1.2).
- An El Niño and a positive IOD event are currently underway. Their effect on spring rainfall is currently being observed, with September 2023 rainfall being the lowest on record for Australia. Australia's national area-average mean temperature for September were also 2.43 °C warmer than the 1961–1990 average, the third warmest on record for September. The El Niño is expected to last till end of summer, while positive IOD is expected to remain active till at least December (see Section 1.3).
- Drier than normal conditions are expected in November for large areas of Australia. Across cropping regions, there is a 75% chance of rainfall totals of between 10 and 50 millimetres in New South Wales, Queensland, and in parts of southern Western Australia and Victoria. Given the lack of rainfall in recent weeks, declining soil moisture levels, and above average daytime temperatures, expected low rainfall totals continues to represent a significant downside production risk for both winter and summer crop production as well as pasture growth (see Section 1.4).
- Between November 2023 to January 2024, close to equal chances of above or below median rainfall for much of Australia, except for in Tasmania, eastern Queensland and southern Victoria where below median fall are more likely. There is a 75% chance of rainfall totals between 25 and 200 millimetres across much of Australia. If these falls are realised, it is likely to be sufficient to support late spring and summer pasture growth across eastern and northern Australia. While the dry start to spring has limited early planting of summer crops, the expected rainfall may be sufficient to allow for later summer crop planting (see Section 1.4).
- Over the next 8-days, a cold front and trough will generate showers across the southern Victoria, western Tasmania and parts of southern New South Wales. Dry conditions are expected elsewhere. Across most cropping regions, falls of between 10 and 25 millimetres are forecast for eastern Victoria while little to no rainfall is expected elsewhere, which is likely to arrest any further declines in yield (see Section 1.6).
- Water storage levels in the Murray-Darling Basin (MDB) decreased between 27 September 2023 and 4 October 2023 by 43 gigalitres (GL). Current volume of water held in storage is 20 729 GL. This is 6 percent or 1236 GL less than at the same time last year.
- Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$216 on 28 September 2023 to \$202 on 5 October 2023. 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.

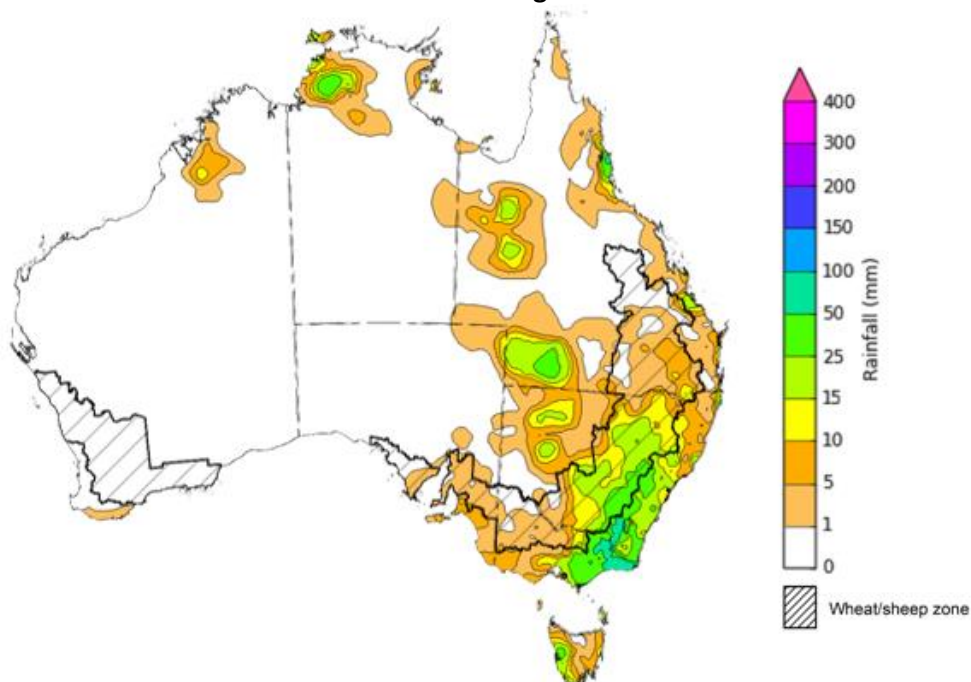
1. Climate

1.1. Rainfall this week

For the week ending 10 October 2023, a trough brought heavy rainfall, up to 100 millimetres, and damaging winds to southeastern Australia earlier in the week. Cold fronts brought showers to western Tasmania. A high-pressure system kept the remainder of the country dry.

Across cropping regions, rainfall totals of up to 50 millimetres were recorded in New South Wales and up to 25 millimetres in parts of eastern Victoria. This rainfall would have boosted the subsoil moisture reserve for crops and pastures. Little to no rainfall was received in the remaining cropping areas. Given the lack of rainfall across most cropping regions and continuous decline in soil moisture reserves, together with above average daytime temperatures and below average night-time temperatures, there continues to be an increased risk of reductions in crop yields at harvest.

Rainfall for the week ending 10 October 2023

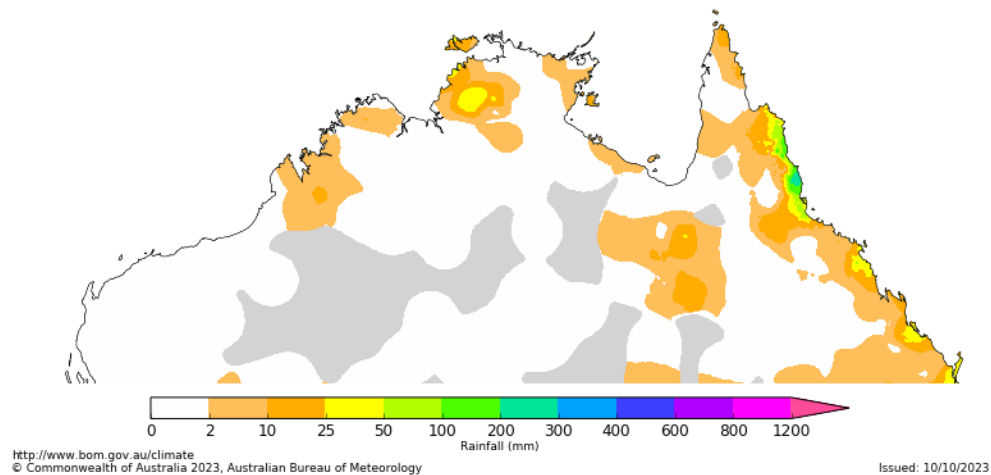


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Note: The rainfall analyses and associated maps utilise data contained in the Bureau of Meteorology climate database, the Australian Data Archive for Meteorology (ADAM). The analyses are initially produced automatically from real-time data with limited 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/>
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1.2. Northern Australia rainfall onset

The timing of Northern Australia rainfall onset is an important indicator for seasonal pasture growth and potential livestock production. The rainfall onset gives an indication of the first significant rain of at least 50 millimetres after 1 September to stimulate plant growth after the northern dry season. Between 1 September and 10 October 2023, much of northern Australia are yet to receive at least 50 millimetres of rainfall. The only region that has recorded an early onset with at least 50 millimetres of rain is the coastal northeast Queensland.

Northern rainfall totals: 1 September to 10 October 2023



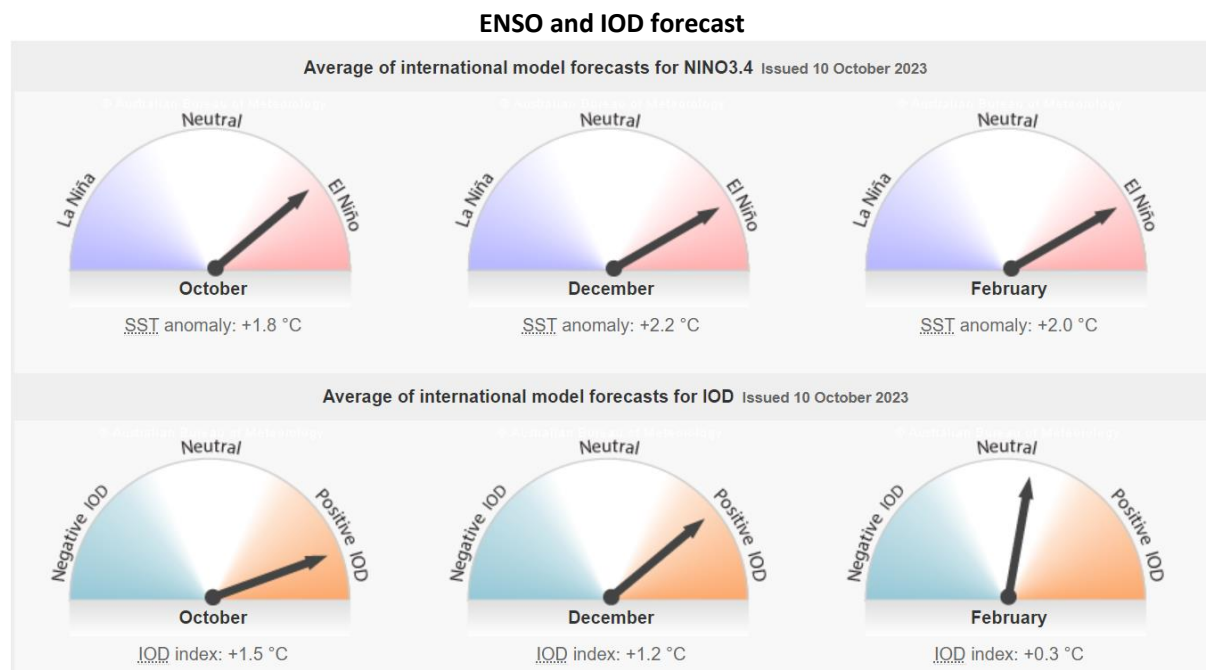
1.3. Climate Drivers

The climate drivers with the largest potential impact on Australia's climate patterns are the El Niño–Southern Oscillation (ENSO), Madden-Julian Oscillation (MJO), Indian Ocean Dipole (IOD) and 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.

The SAM is currently in neutral stage and is expected to remain in the neutral stage in the coming weeks. During Spring, neutral SAM is associated with average climate conditions in southern Australia.

The MJO is currently weak and has minimal effect on northern Australia rainfall, where its effect is mainly observed.

An El Niño and a positive IOD event are currently underway. When a positive IOD and El Niño occur together, their drying effect is typically stronger and more widespread across Australia. Their effect on spring rainfall is currently being observed, with September 2023 rainfall being the lowest on record for Australia. Australia's national area-average mean temperature for September were also 2.43 °C warmer than the 1961–1990 average, the third warmest on record for September. The El Niño is expected to last till end of summer, while positive IOD is expected to remain active till at least December.



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1.4. 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/>.

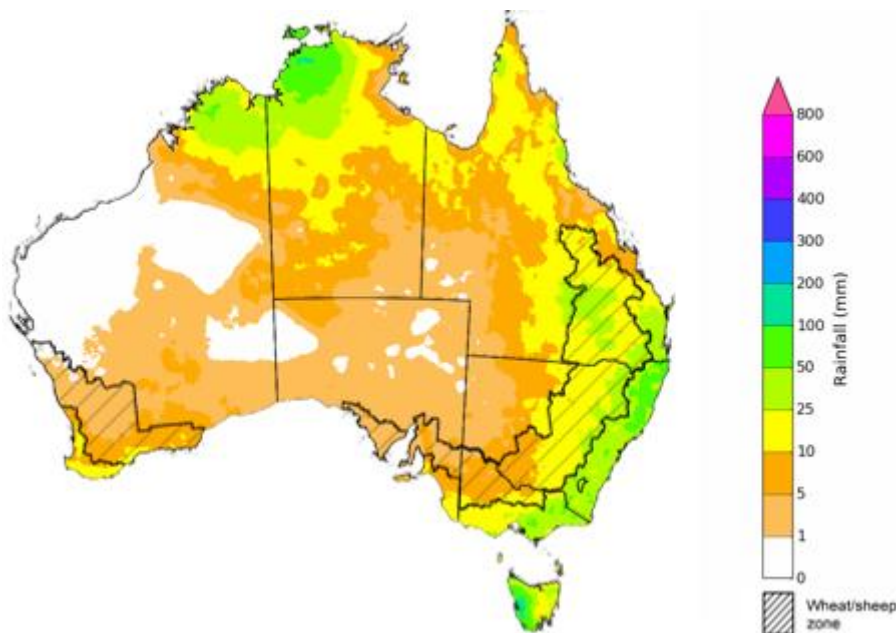
The Bureau of Meteorology's latest rainfall outlook for November 2023 indicates drier than average conditions are expected across large areas of northern, eastern and southern Australia.

The ACCESS-S climate model suggests that for November 2023, there is a 75% chance of rainfall totals between 10 and 100 millimetres across eastern New South Wales, southeast Queensland, and southern Victoria and northern Western Australia and Northern Territory. Rainfall totals in excess of 100 millimetres are expected across western Tasmania.

Across cropping regions, there is a 75% chance of rainfall totals of between 10 and 50 millimetres in New South Wales, Queensland, and in parts of southern Western Australia and Victoria. November rainfall totals are expected to be below 10 millimetres for the remaining cropping regions.

These relatively low expected rainfall totals continue to represent a significant downside production risk for both winter and summer crop production as well as pasture growth, particularly given the lack of rainfall in recent weeks and declining soil moisture levels across large areas of the cropping regions.

Rainfall totals that have a 75% chance of occurring in November 2023



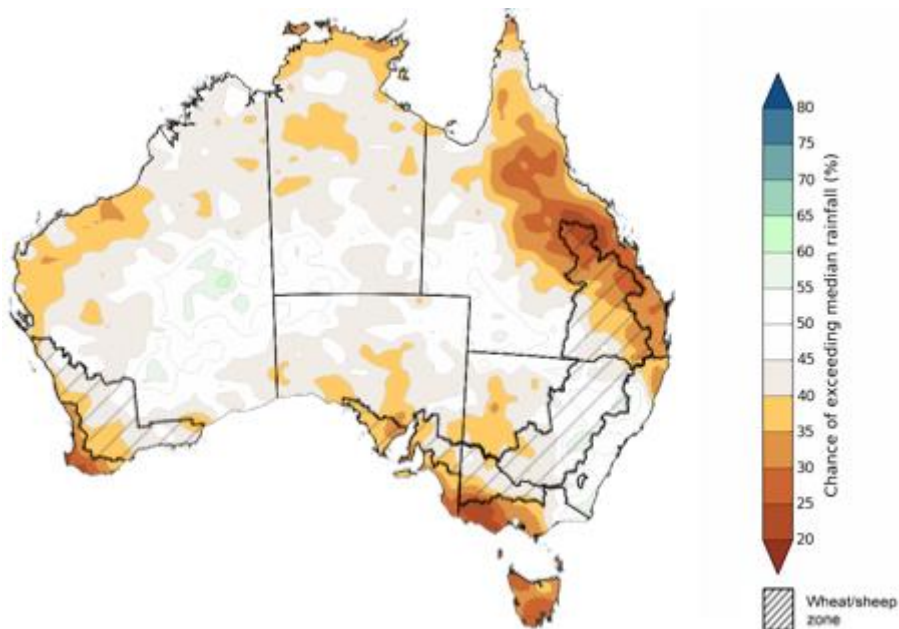
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The rainfall outlook for November 2023 to January 2024 suggests that there is close to equal chances of above or below median rainfall for much of Australia, except for in Tasmania, eastern Queensland and southern Victoria where below median fall are more likely.

Across cropping regions, below median rainfall is more likely northern Queensland and close to equal chances of above or below median rainfall is likely in the remaining cropping areas.

Chance of exceeding the median rainfall November 2023 to January 2024



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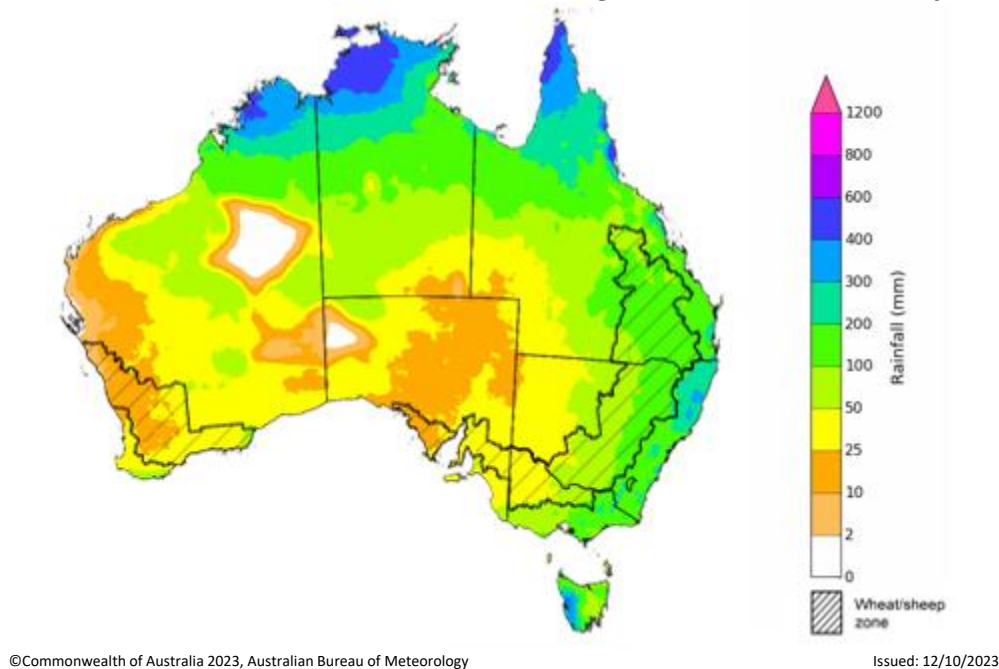
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The outlook for November 2023 to January 2024 suggests there is a 75% chance of rainfall totals between 25 and 200 millimetres across much of Australia. The main exceptions being South Australia and western and central parts of Western Australia where below 25 millimetres of rainfall are expected. Meanwhile, across tropical northern Australia, coastal New South Wales and western Tasmania rainfall total in excess of 300 millimetres are expected.

In cropping regions, there is a 75% chance of receiving between 25 and 200 millimetres across New South Wales, Queensland and eastern Victoria while less than 50 millimetres of rainfall are likely across remaining cropping regions.

If these falls are realised, it is likely to be sufficient to support late spring and summer pasture growth across eastern and northern Australia. Additionally while the dry start to spring has limited early planting of summer crops these falls may be sufficient to allow for later summer crop planting.

Rainfall totals that have a 75% chance of occurring November 2023 to January 2024

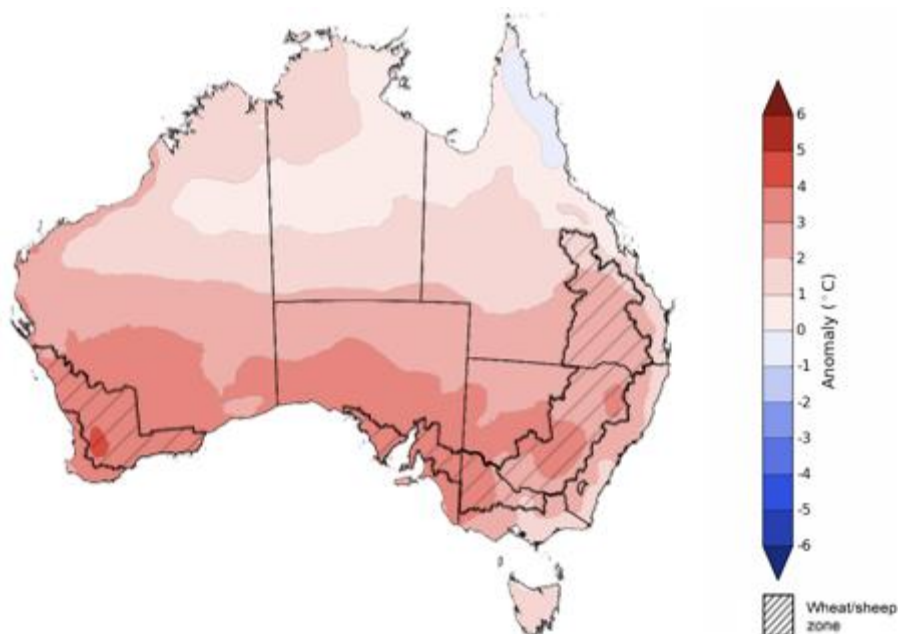


1.5. Weekly predicted temperature anomalies

Maximum temperature predictions for the week ending 22 October 2023 indicates warmer than average conditions are expected across much of southern Australia, with the highest maximum temperature anomalies expected southern Western Australia. Across cropping regions, temperature up to 5°C above average are expected for this time of year.

These well above average predicted temperatures, in addition to the lack of recent rainfall, declining soil moisture levels and a lack of forecast rainfall (see Section 1.6) will likely contribute to increase moisture stress to the winter crops and spring pastures. The combination of reduced crop prospects and strong fodder prices may be providing producers in regions with declining grain yield potentials with a strong incentive to cut some crops that were planted for grain production for hay. In some regions, particularly in Western Australia, South Australia, Queensland and northern New South Wales, some crops may not have produced sufficient biomass to warrant fodder conservation and may instead be used for grazing to allow for economic return to some farmers as they replace some of their grain feeding with the grazing matter.

Predicted maximum temperature anomaly for 16 to 22 October 2023



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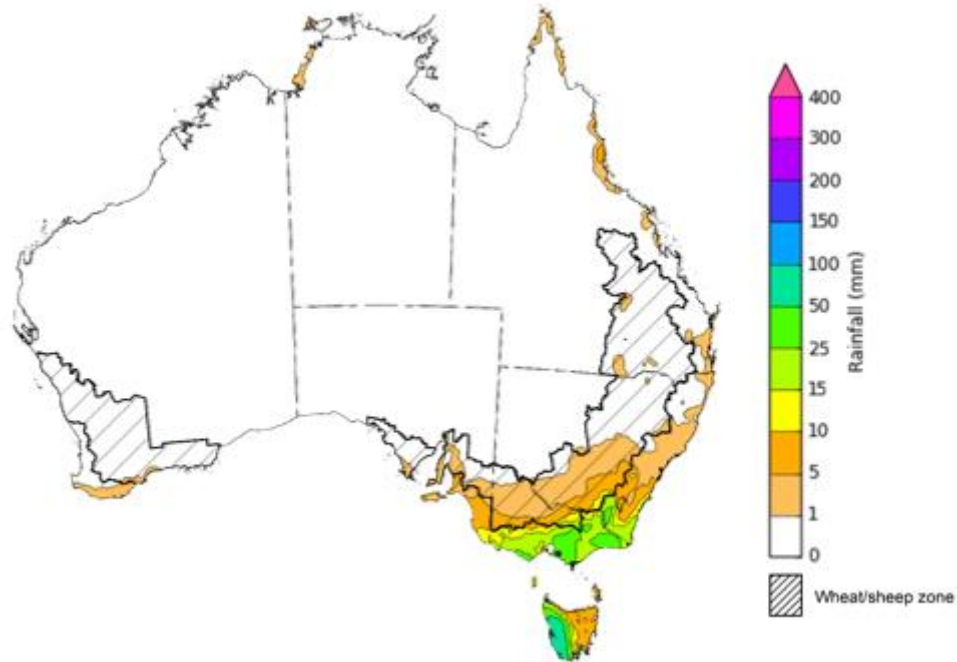
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1.6. Rainfall forecast for the next eight days

Over the 8-days to 19 October 2023, a cold front and trough will generate showers across the southern Victoria, western Tasmania and parts of southern New South Wales. Dry conditions are expected elsewhere.

Across cropping regions, falls of between 10 and 25 millimetres are forecast for eastern Victoria while little to no rainfall is expected elsewhere, which is likely to arrest any further declines in yield.

Total forecast rainfall for the period 12 October 2023 to 19 October 2023



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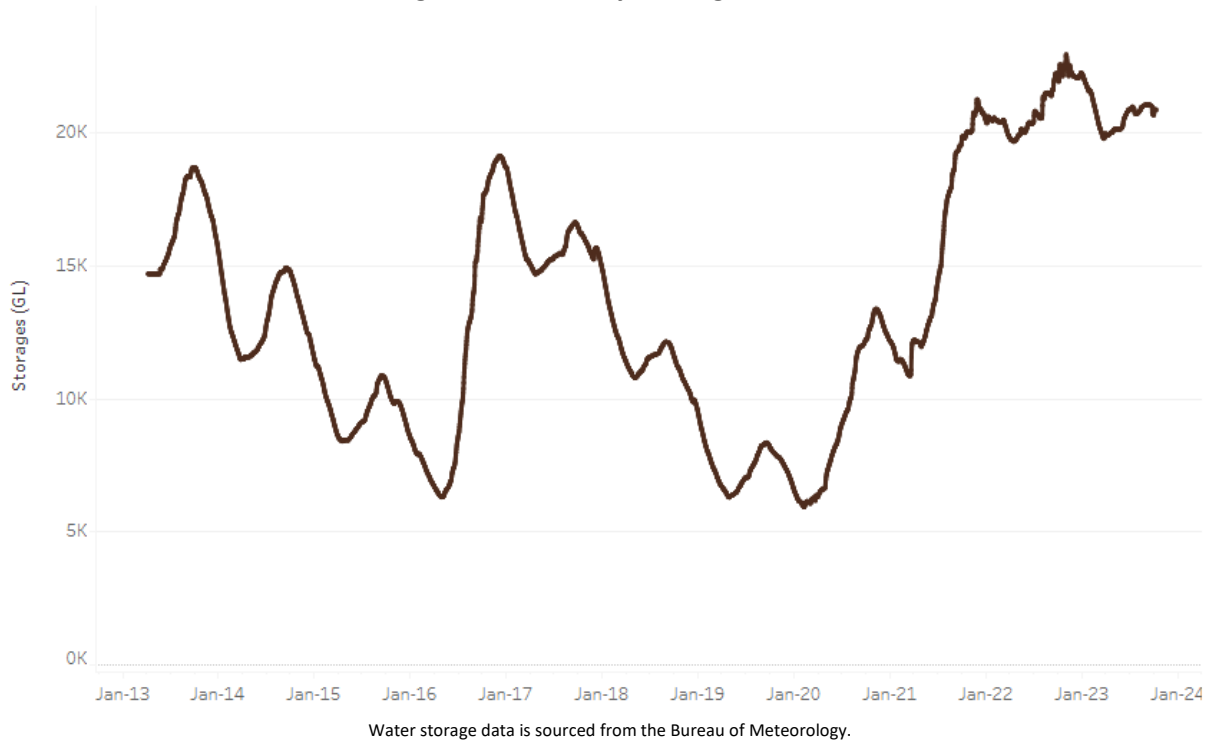
Note: This rainfall forecast is produced from computer models. As the model outputs are not altered by weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.

2. Water

2.1. Water markets – current week

Water storage levels in the Murray-Darling Basin (MDB) increased between 5 October 2023 and 12 October 2023 by 34 gigalitres (GL). Current volume of water held in storage is 20 841 GL. This is 7 percent or 1577 GL less than at the same time last year.

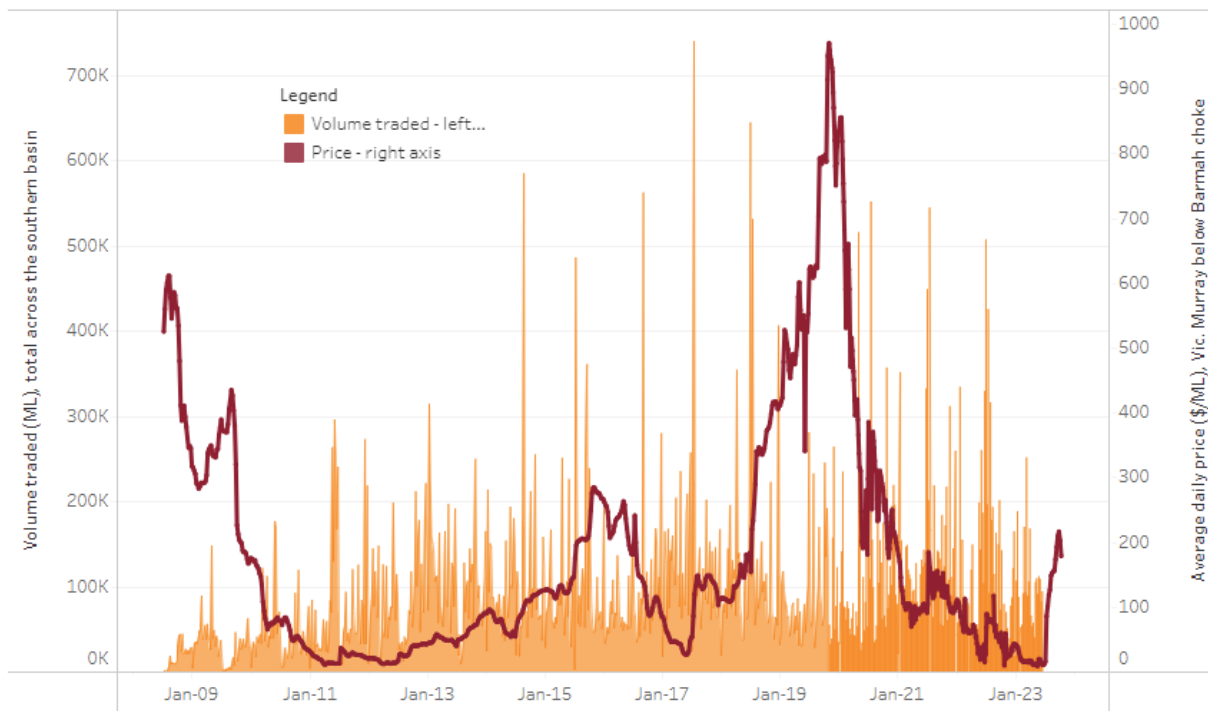
Water storages in the Murray-Darling Basin, 2013–2023



Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$202 on 5 October 2023 to \$178 on 12 October 2023. 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	122
NSW Murrumbidgee	202
VIC Goulburn-Broken	158
VIC Murray Below	178

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. Only the price data shown is current on 12 October 2023.

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

https://www.agriculture.gov.au/abares/products/weekly_update/weekly-update-121023

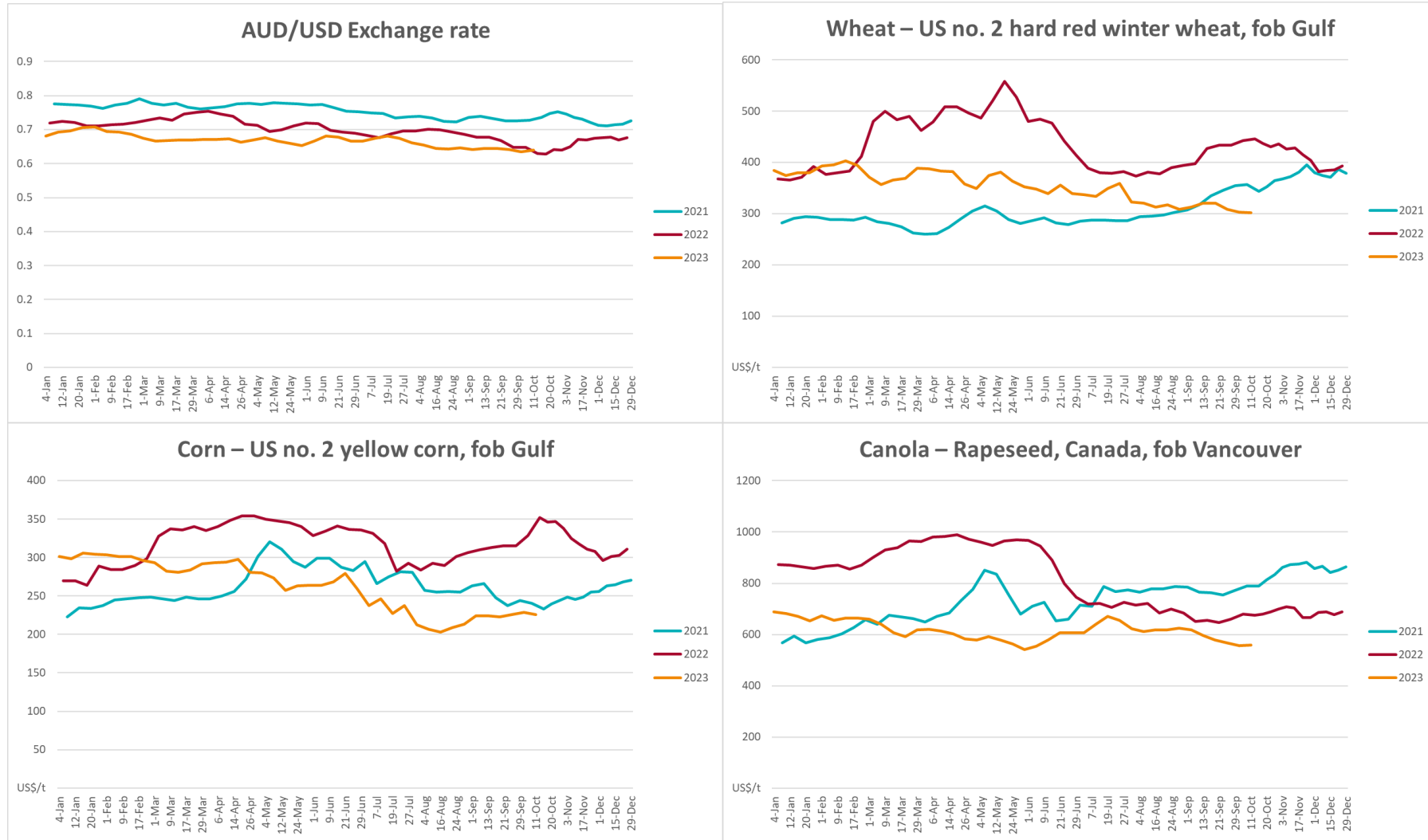
3. Commodities

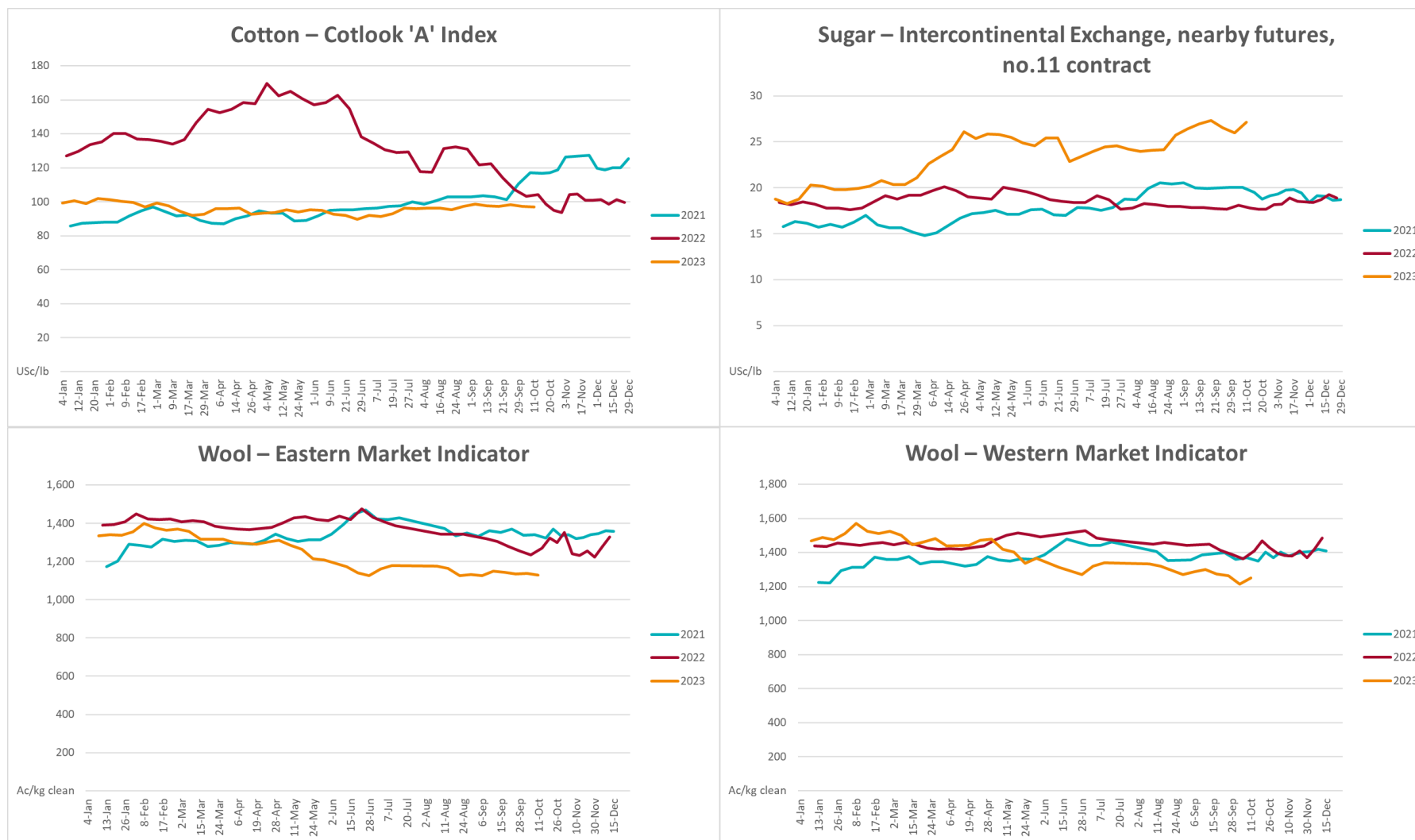
Indicator	Week ended	Unit	Latest Price	Previous Week	Weekly change	Price 12 months ago	Annual change
Selected world indicator prices							
AUD/USD Exchange rate	11-Oct	A\$/US\$	0.64	0.63	1%	0.63	2%
Wheat – US no. 2 hard red winter wheat, fob Gulf	11-Oct	US\$/t	302	302	0%	437	-31%
Corn – US no. 2 yellow corn, fob Gulf	11-Oct	US\$/t	226	228	-1%	346	-35%
Canola – Rapeseed, Canada, fob Vancouver	11-Oct	US\$/t	558	556	0%	680	-18%
Cotton – Cotlook 'A' Index	11-Oct	USc/lb	97	97	-1%	99	-2%
Sugar – Intercontinental Exchange, nearby futures, no.11 contract	11-Oct	USc/lb	27.1	26.0	4%	18	53%
Wool – Eastern Market Indicator	11-Oct	Ac/kg clean	1,128	1,138	-1%	1,342	-16%
Wool – Western Market Indicator	11-Oct	Ac/kg clean	1,251	1,215	3%	1,486	-16%
Selected Australian grain export prices							
Milling Wheat – APW, Port Adelaide, SA	11-Oct	A\$/t	489	488	0%	610	-20%
Feed Wheat – ASW, Port Adelaide, SA	11-Oct	A\$/t	469	468	0%	560	-16%
Feed Barley – Port Adelaide, SA	11-Oct	A\$/t	406	407	0%	471	-14%
Canola – Kwinana, WA	11-Oct	A\$/t	801	809	-1%	1,057	-24%
Grain Sorghum – Brisbane, QLD	11-Oct	A\$/t	522	523	0%	470	11%
Selected domestic livestock indicator prices							
Beef – Eastern Young Cattle Indicator	04-Oct	Ac/kg cwt	357	374	-5%	1,061	-66%
Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic	04-Oct	Ac/kg cwt	127	106	20%	525	-76%
Lamb – National Trade Lamb Indicator	04-Oct	Ac/kg cwt	444	433	3%	778	-43%
Pig – Eastern Seaboard (60.1–75 kg), average of buyers & sellers	04-Oct	Ac/kg cwt	367	352	4%	376	-2%
Goats – Eastern States (12.1–16 kg)	11-Oct	Ac/kg cwt	207	207	0%	891	-77%
Live cattle – Light steers to Indonesia	20-Sep	Ac/kg lwt	310	310	0%	450	-31%
Global Dairy Trade (GDT) weighted average prices ^a							

Dairy – Whole milk powder	04-Oct	US\$/t	2,931	2,799	5%	3,733	-21%
Dairy – Skim milk powder	04-Oct	US\$/t	2,558	2,400	7%	3,547	-28%
Dairy – Cheddar cheese	04-Oct	US\$/t	3,853	4,044	-5%	5,147	-25%
Dairy – Anhydrous milk fat	04-Oct	US\$/t	4,979	4,787	4%	5,901	-16%

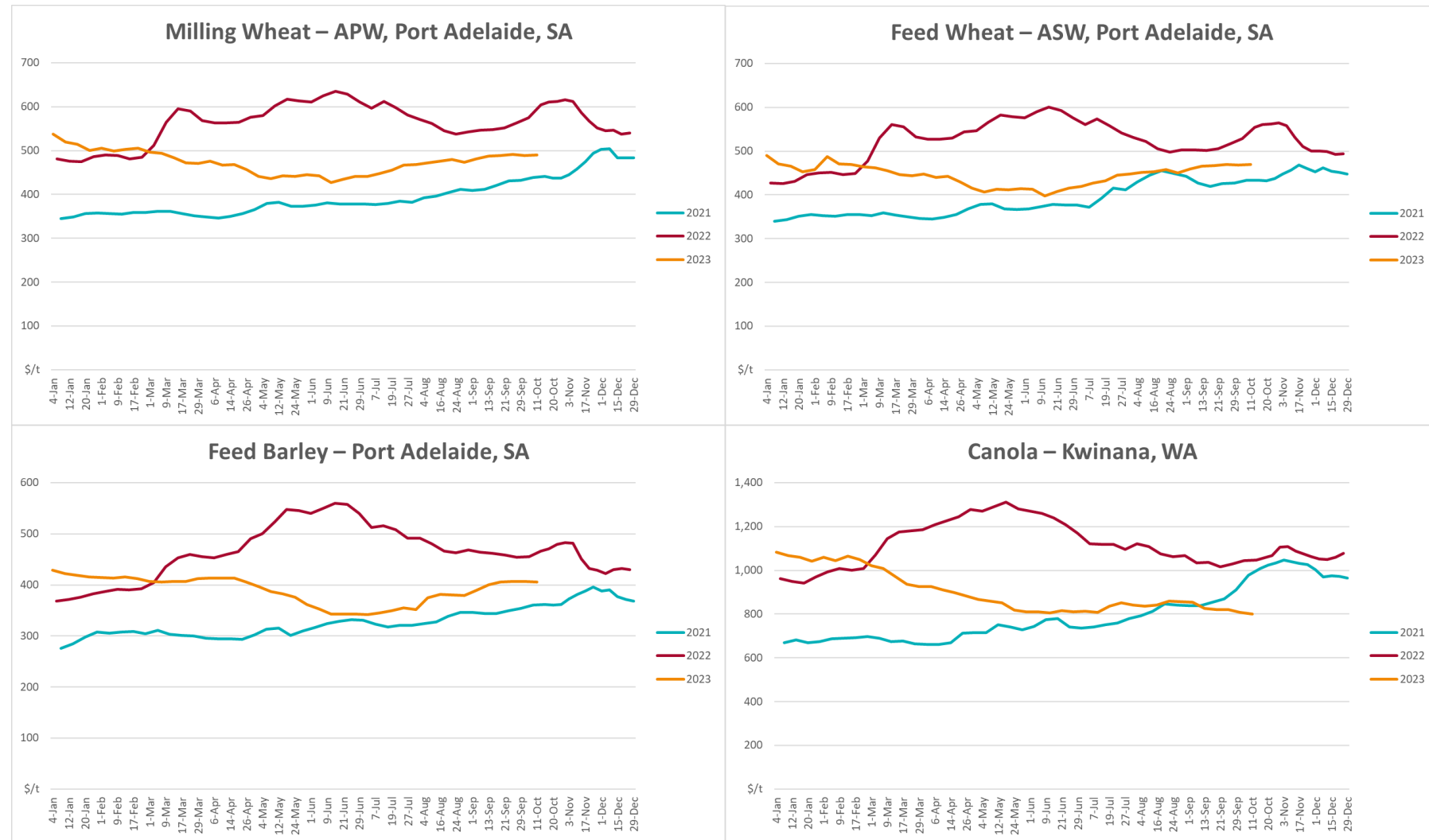
a Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.

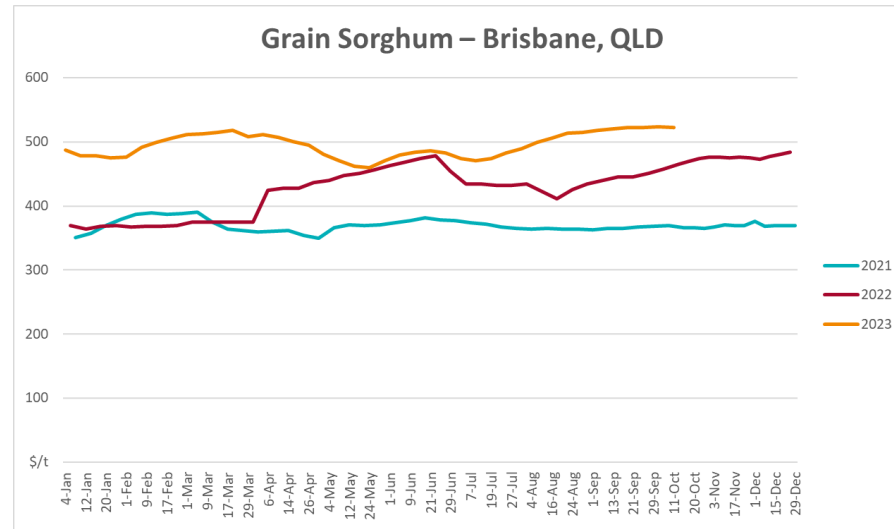
3.1. Selected world indicator prices



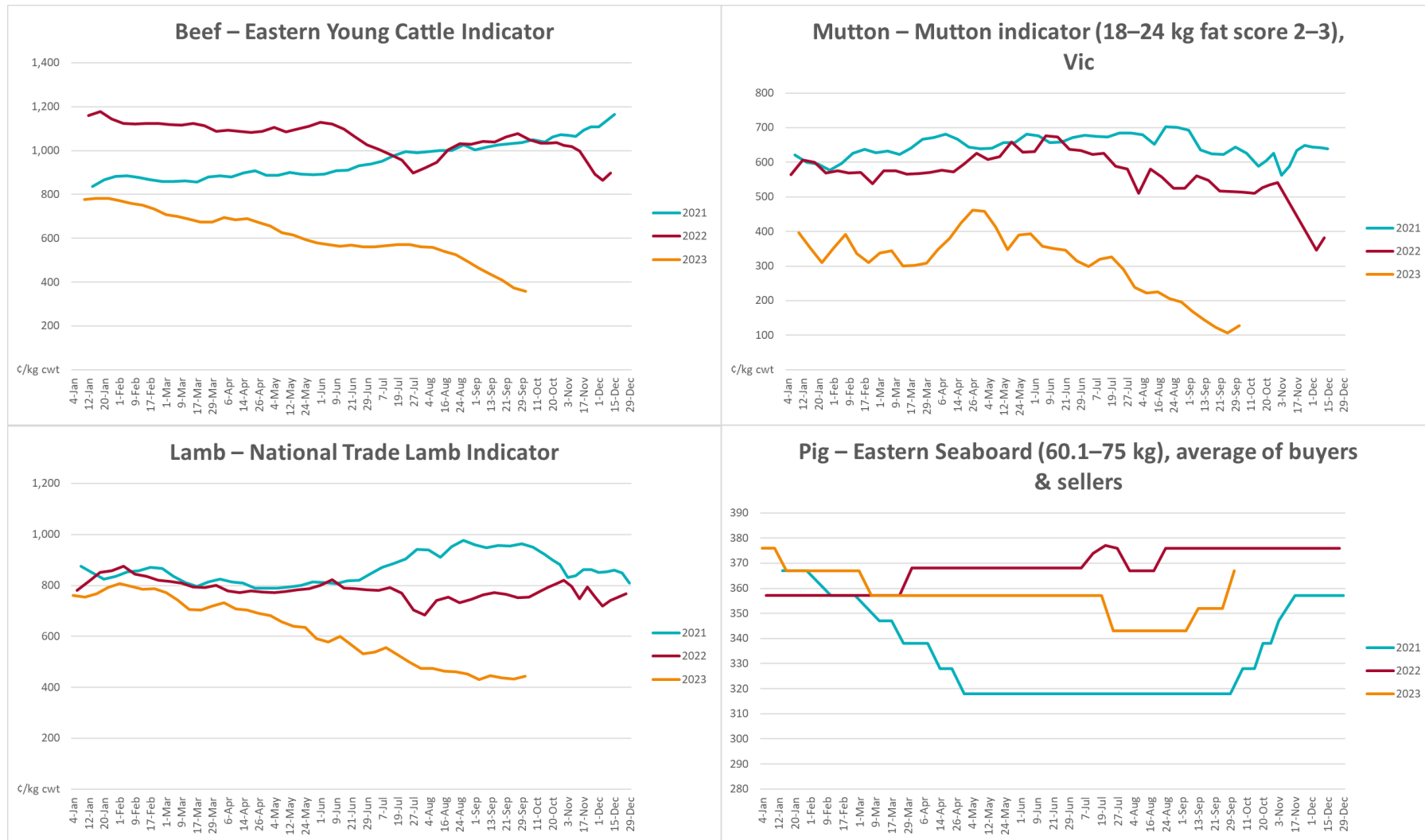


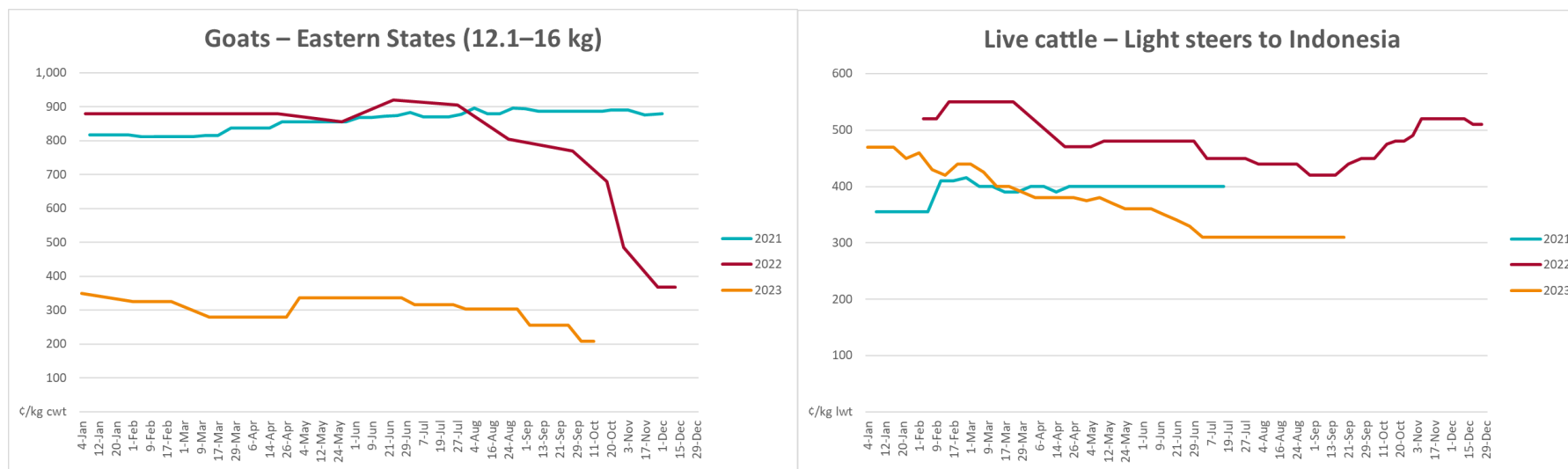
3.2. Selected domestic crop indicator prices



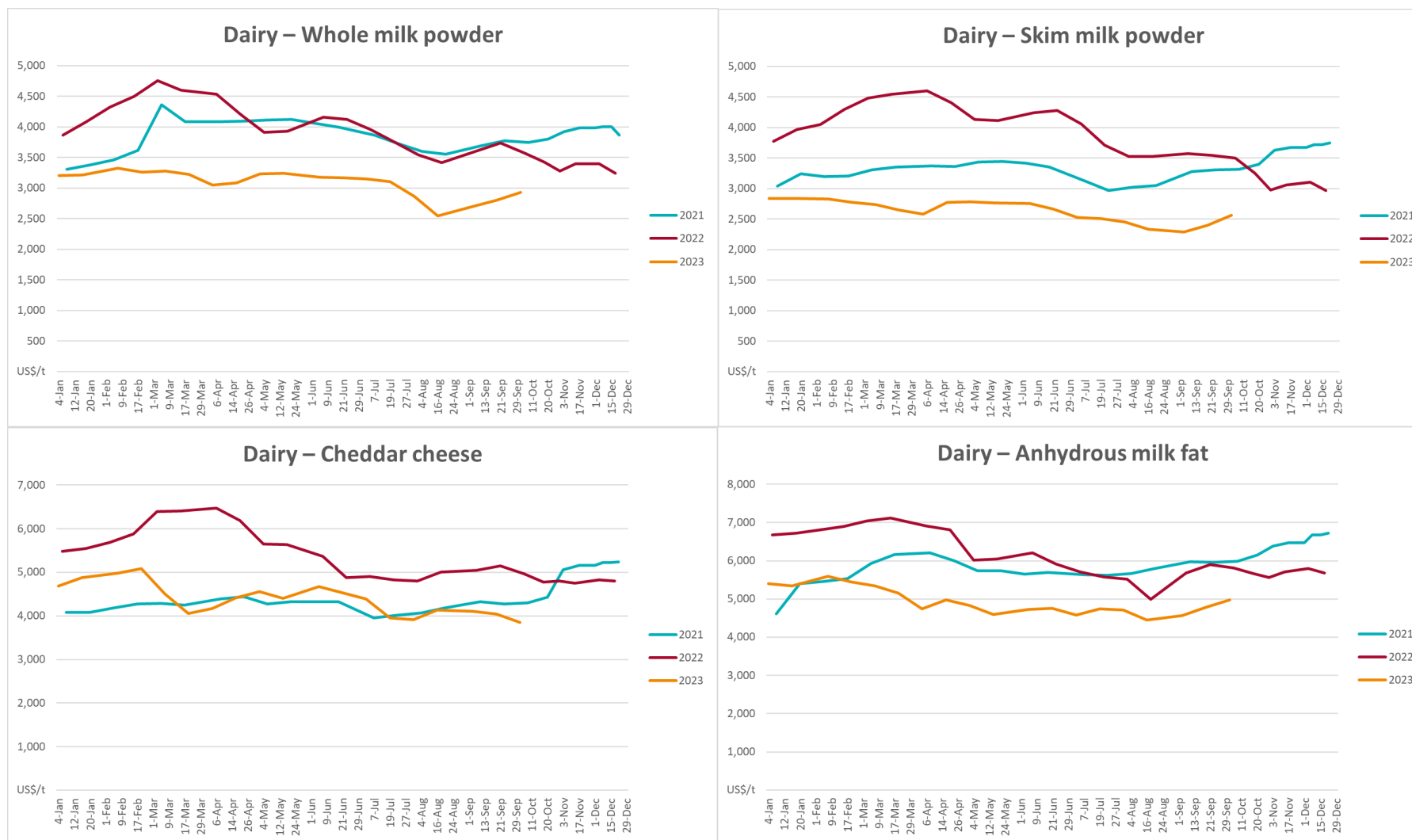


3.3. Selected domestic livestock indicator prices

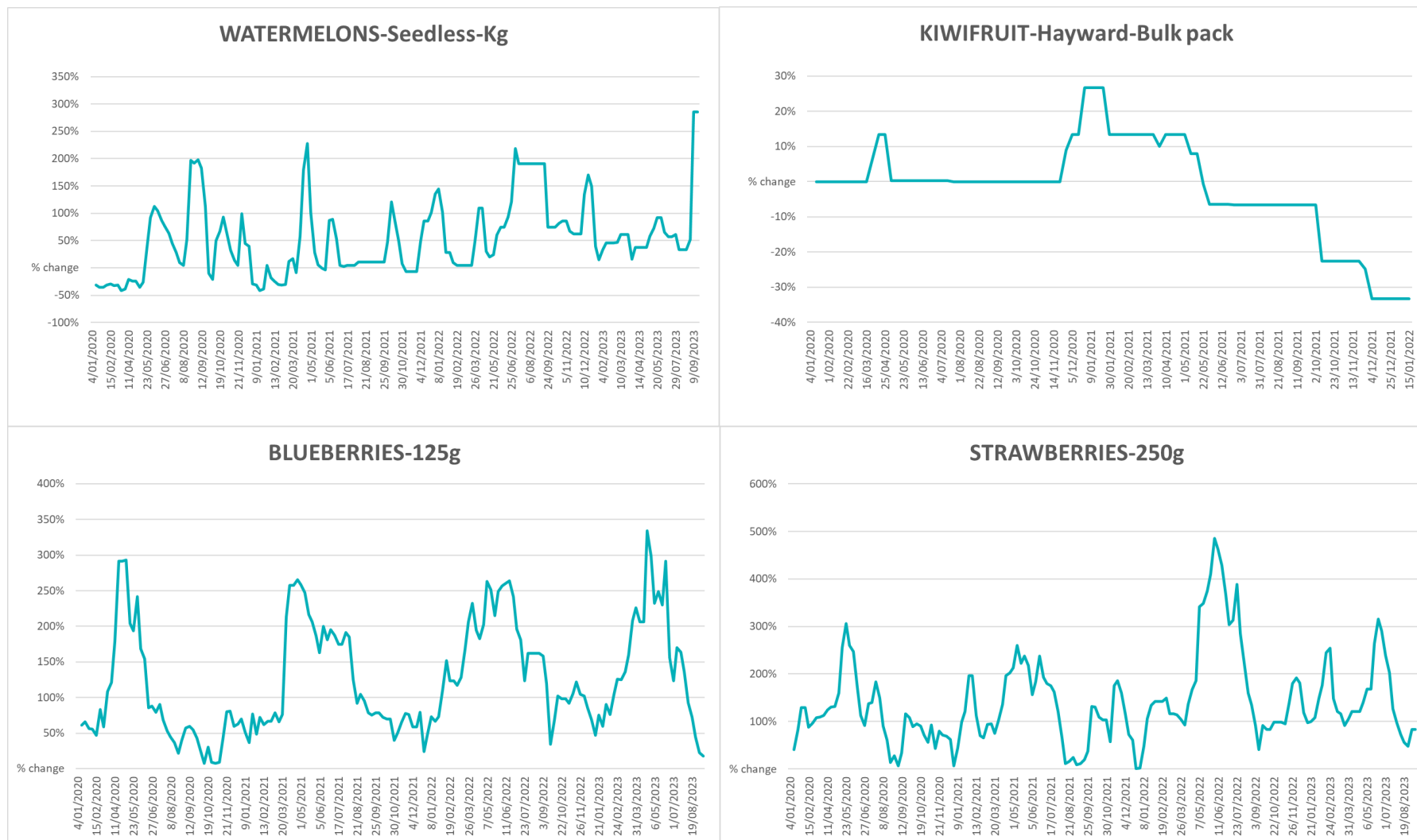


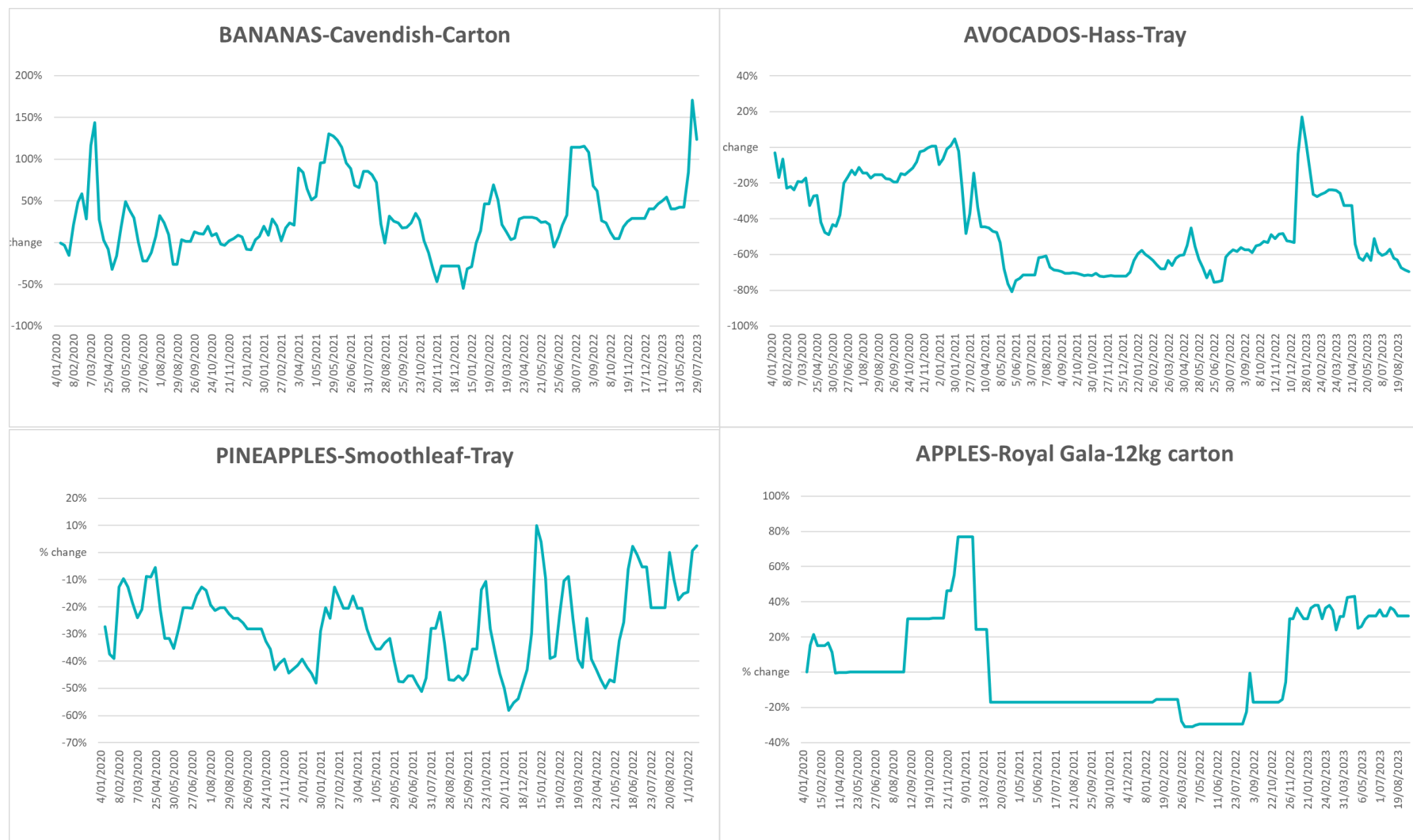


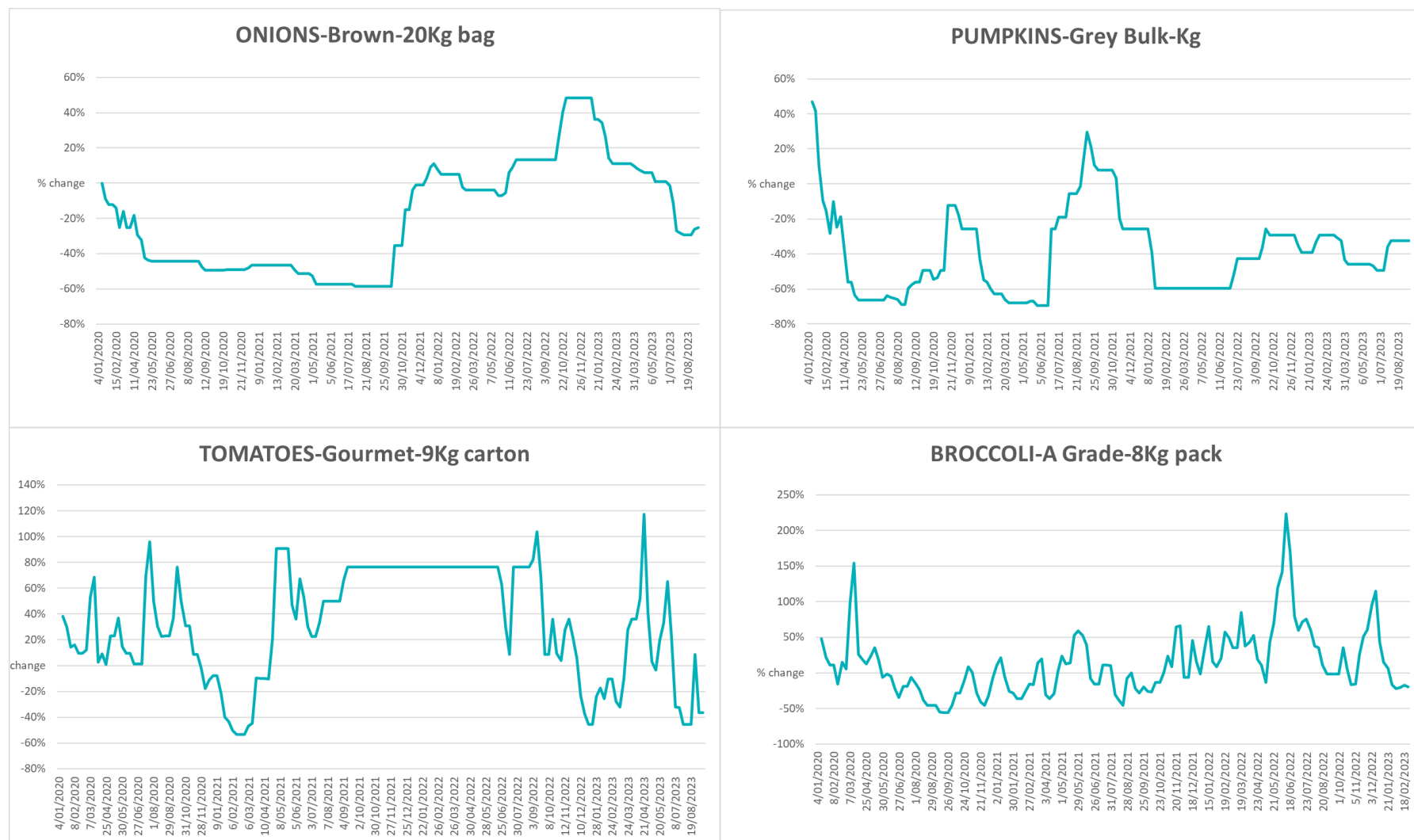
3.4. Global Dairy Trade (GDT) weighted average prices

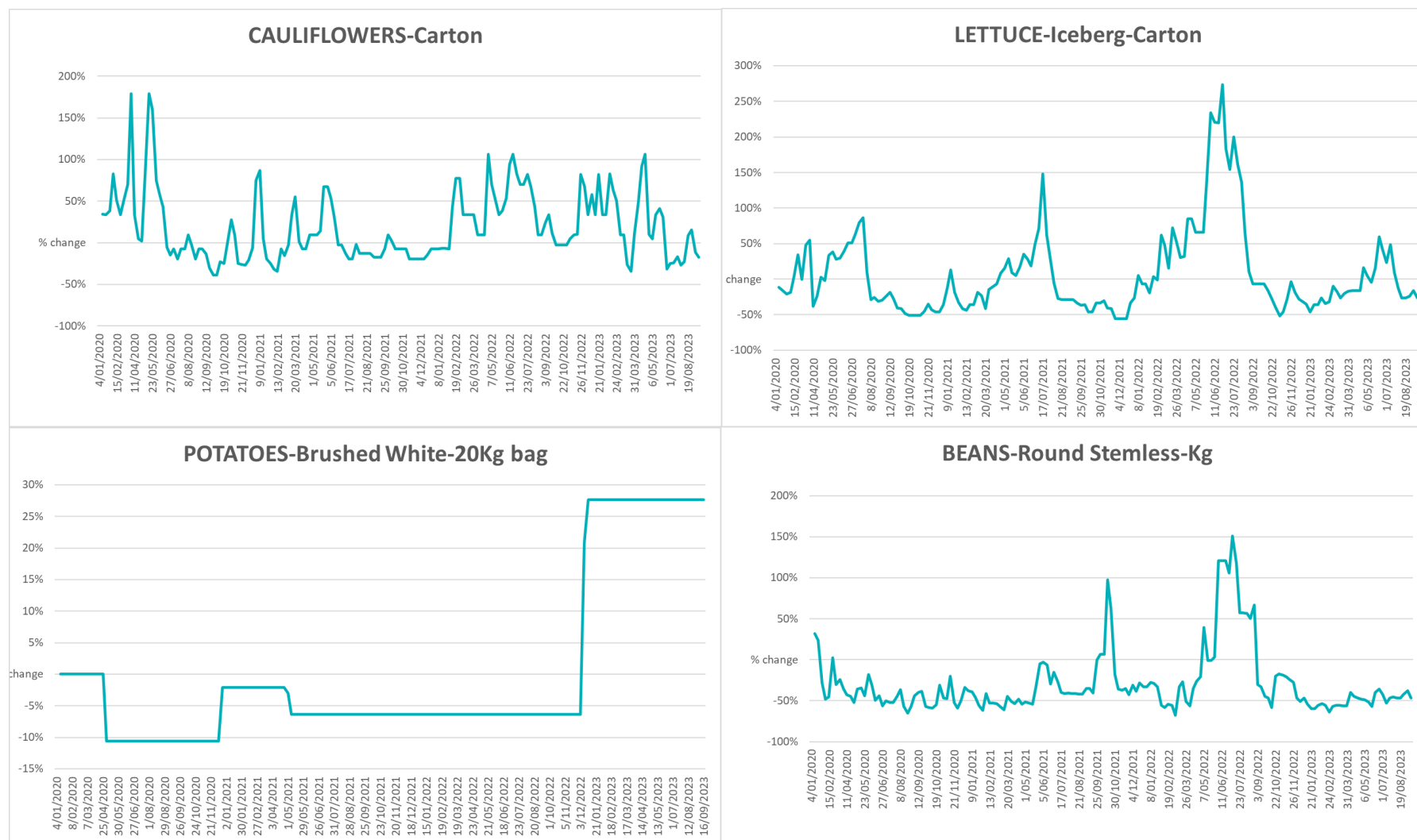


3.5. Selected fruit and vegetable prices

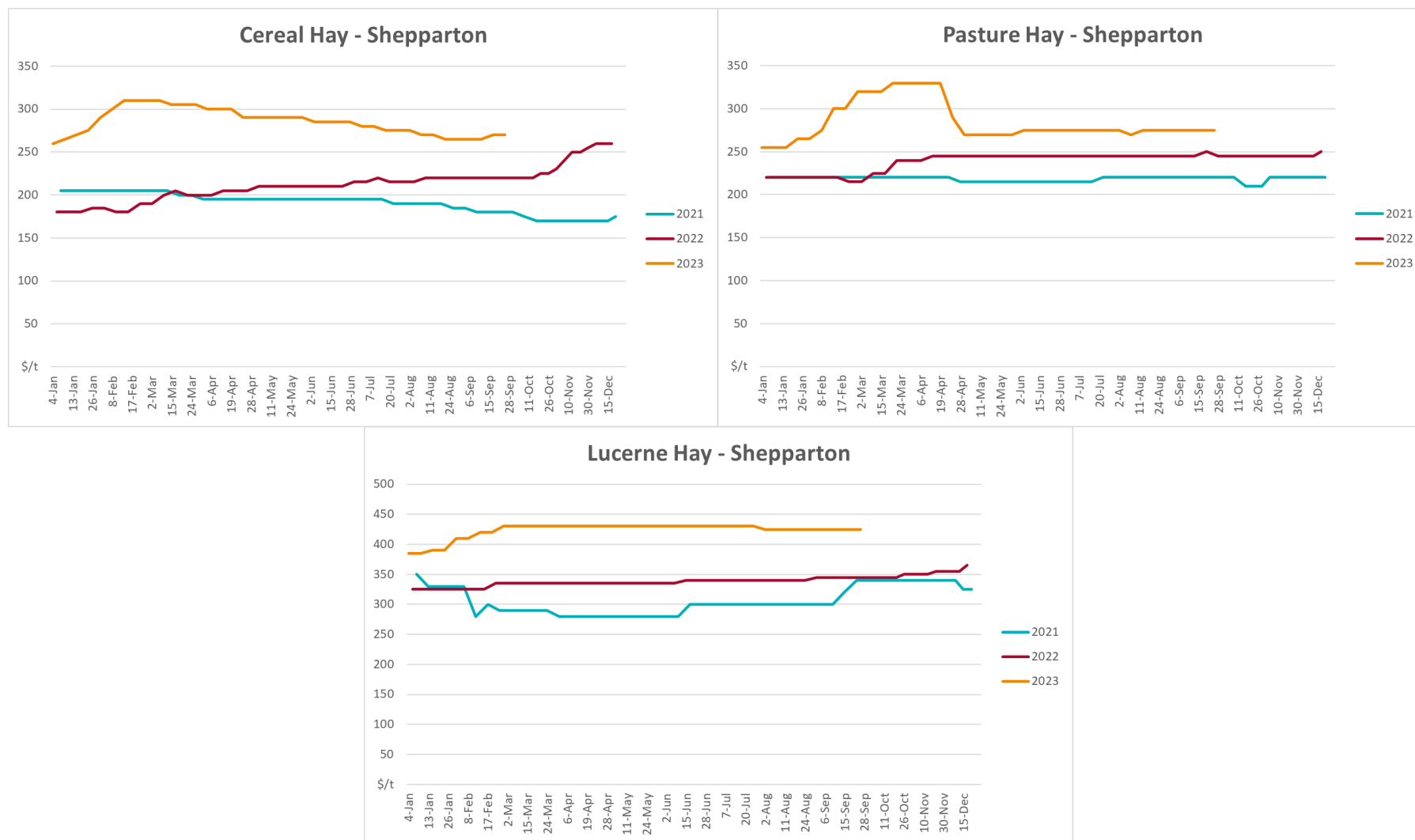








3.6 Selected domestic fodder indicator prices



4. Data attribution

Climate

Bureau of Meteorology

- Weekly rainfall totals: www.bom.gov.au/climate/maps/rainfall/
- Monthly and last 3-month rainfall percentiles: www.bom.gov.au/water/landscape/
- 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/
- Climate drivers: <http://www.bom.gov.au/climate/enso/>
- Soil moisture: www.bom.gov.au/water/landscape/

Other

- Pasture growth: 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/mdb/at>
- Storage volumes: <http://www.bom.gov.au/water/dashboards/#/water-storages/summary/drainage>

Trade constraints:

- Water NSW: <https://www.watarnsw.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

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, 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

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