



Weekly Australian Climate, Water and Agricultural Update

No. 45/2021

18 November 2021

Summary of key issues

- For the week ending 17 November 2021, low-pressure troughs and associated cold fronts brought significant rainfall to central and eastern Australia (see Section 1.1).
- The substantial rainfall across eastern Australia this week has interrupted harvesting activities across southern Queensland and northern New South Wales, as well as interrupting the planting of summer crops. The rainfall also likely caused lodging and quality downgrades in winter crops, and the intensity of the rainfall may prevent field access for several weeks in some areas.
- As at 28 October 2021 global production conditions were generally favourable for the production of corn, rice and soybean. However, a lack of precipitation across some regions has affected the production potential of wheat in some key grain exporting and importing countries (see Section 1.2).
- In the northern hemisphere, precipitation was below average across much of Europe, Ukraine, the west of the Russian Federation and Kazakhstan, and parts of central Canada. Precipitation was above average across the United Kingdom, northern China, India and the United States. In the southern hemisphere, October precipitation was below average across much of Argentina. Precipitation was close to average across the remainder of major grain-producing and oilseed-producing regions.
- In the northern hemisphere production conditions for wheat have been mixed. Dryness has persisted across key growing regions in the south of the Russian Federation and in the Ukraine. In Canada and northern United States, October rainfall arriving too late to increase yields. In major growing regions of Australia, northern Argentina, as well as China and the European Union, conditions have been favourable, despite some dryness during October.
- The northern rainfall onset has occurred across most of Queensland and the Northern Territory, as well as north-eastern parts of Western Australia. The ongoing Indian Ocean Dipole event and La Niña like conditions have contributed to this early northern rainfall onset across most of northern Australia (see Section 1.3).
- A series of troughs and low-pressure systems are expected to bring heavy rainfall to much of southern and eastern Australia and parts of northern Australia in the coming 8-days. The rainfall expected across Queensland and northern New South Wales is likely to continue to assist the establishment of early sown summer crops and boost soil moisture levels but delay further planting activities. The continuation of wet, humid conditions from last week's heavy rainfall, increases the risk of grain quality downgrades in mature crops (see Section 1.4).
- Water storage in the Murray–Darling Basin (MDB) increased by 165 gigalitres (GL) between 9 November 2021 and 16 November 2021. The current volume of water held in storage is 22,276 GL, which represents 88% of total capacity. This is 41% or 6,520 GL more than at the same time last year.
- Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$118 per ML on 5 November 2021 to \$104 per ML on 12 November 2021. Prices are lower in the Goulburn-Broken, Murrumbidgee, and regions above the Barmah Choke due to the binding of the Goulburn intervalley trade limit, Murrumbidgee export limit, and Barmah Choke trade constraint.

1. Climate

1.1. Rainfall this week

For the week ending 17 November 2021, low-pressure troughs and associated cold fronts brought significant rainfall to central and eastern Australia. In the west, a combination of high-pressure and weak low-pressure systems resulted in predominantly clear conditions in the 7 days to 17 November 2021.

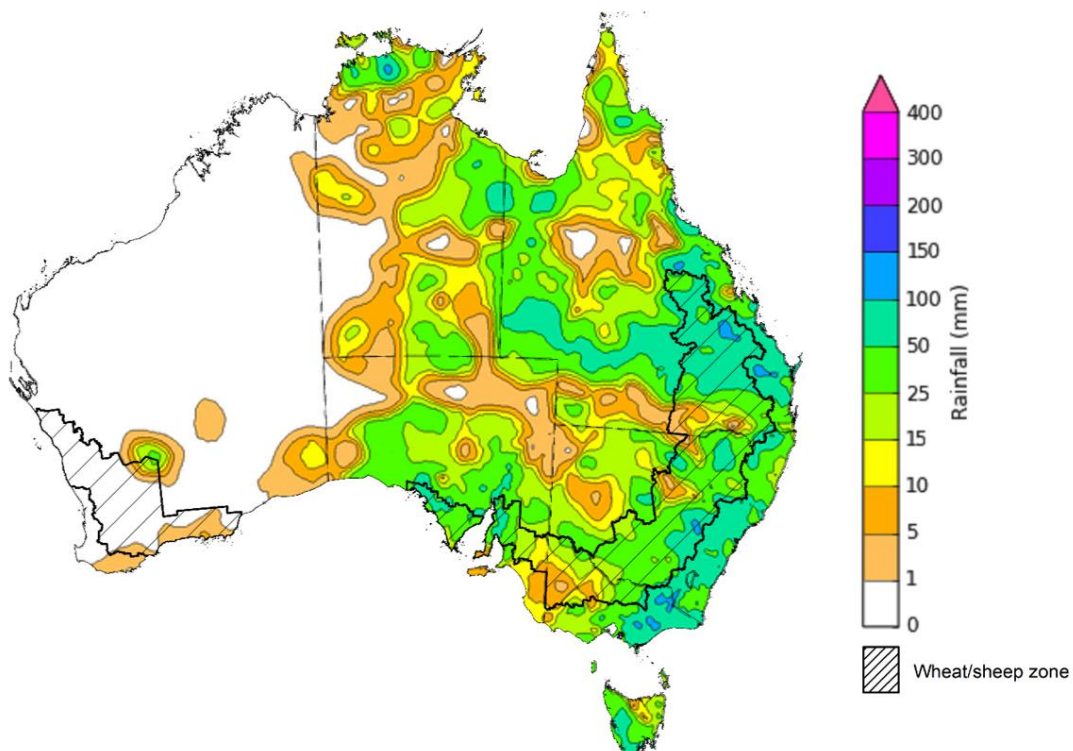
Rainfall totals of between 10 and 50 millimetres were recorded across much of New South Wales, Queensland, Victoria, South Australia, Tasmania and parts of the Northern Territory. Rainfall totals in excess of 50 millimetres were recorded across large areas of eastern New South Wales, southern and central Queensland, eastern Victoria and southwestern Tasmania, as well as isolated parts of southern South Australia and the far north of the Northern Territory.

In cropping regions, rainfall totals of between 10 and 100 millimetres were recorded across much of New South Wales, Queensland, eastern and northern Victoria and South Australia. Little to no rainfall was recorded across cropping regions of southwestern Victoria and Western Australia.

The substantial rainfall across eastern Australia has interrupted harvesting activities across southern Queensland and northern New South Wales, as well as interrupting the planting of summer crops. The rainfall also likely caused lodging and quality downgrades, and the intensity of the rainfall may prevent field access for some time in parts. On the positive side, the heavy rainfall will have provided a significant boost to soil moisture levels. For early sown summer crops, the rainfall will undoubtedly help with establishment, while the water availability will spur greater planting activity when conditions allow.

For southern growing regions, winter crops are likely still maturing, but the recent rainfall is unlikely to have benefitted yield potentials. Growers will be looking to begin harvesting what has been another big winter crop in the coming weeks.

Rainfall for the week ending 17 November 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. Global production conditions and climate outlook

Crop production is affected by long-term trends in average rainfall and temperature, interannual climate variability, shocks during specific growth stages, and extreme weather events ([IPCC 2012](#)). Some crops are more tolerant than others to certain types of stresses, and at each growth stage, different types of stresses affect each crop species in different ways.

The precipitation anomalies and outlooks presented here give an indication of the current and future state of production conditions for the major grain and oilseed producing countries which are responsible for over 80% of global production. This is an important input to assessing the global grain supply outlook.

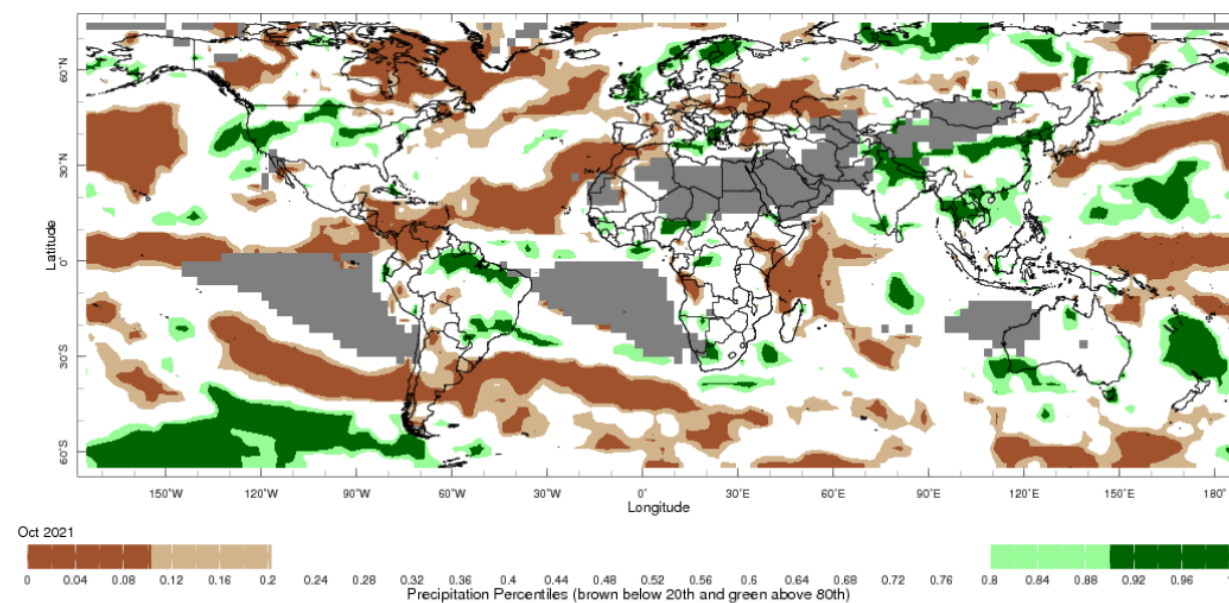
October precipitation percentiles and current production conditions

As of the end of October 2021, rainfall was mixed for the world's major grain-producing and oilseed-producing regions.

In the northern hemisphere, precipitation was below average across much of Europe, Ukraine, the west of the Russian Federation and Kazakhstan, and parts of central Canada. Precipitation was above average across the United Kingdom, northern China, India and the United States. Precipitation was close to average across the remainder of major grain-producing and oilseed-producing regions in the northern hemisphere.

In the southern hemisphere, October precipitation was below average across much of Argentina. Precipitation was generally average to above average across the remainder of major grain-producing and oilseed-producing regions in the southern hemisphere.

Global precipitation percentiles, October 2021



Note: The world precipitation percentiles indicate a ranking of precipitation for October, with the driest (0th percentile) being 0 on the scale and the wettest (100th percentile) being 1 on the scale. Percentiles are based on precipitation estimates from the NOAA Climate Prediction Center's [Climate Anomaly Monitoring System Outgoing Precipitation Index](#) dataset. Precipitation estimates for October 2021 are compared with rainfall recorded for that period during the 1981 to 2010 base period.

Source: International Research Institute for Climate and Society

As at 28 October 2021 global production conditions were generally favourable for the production of corn, rice and soybeans. However, a lack of precipitation has affected the production potential of wheat in some key grain exporting and importing countries.

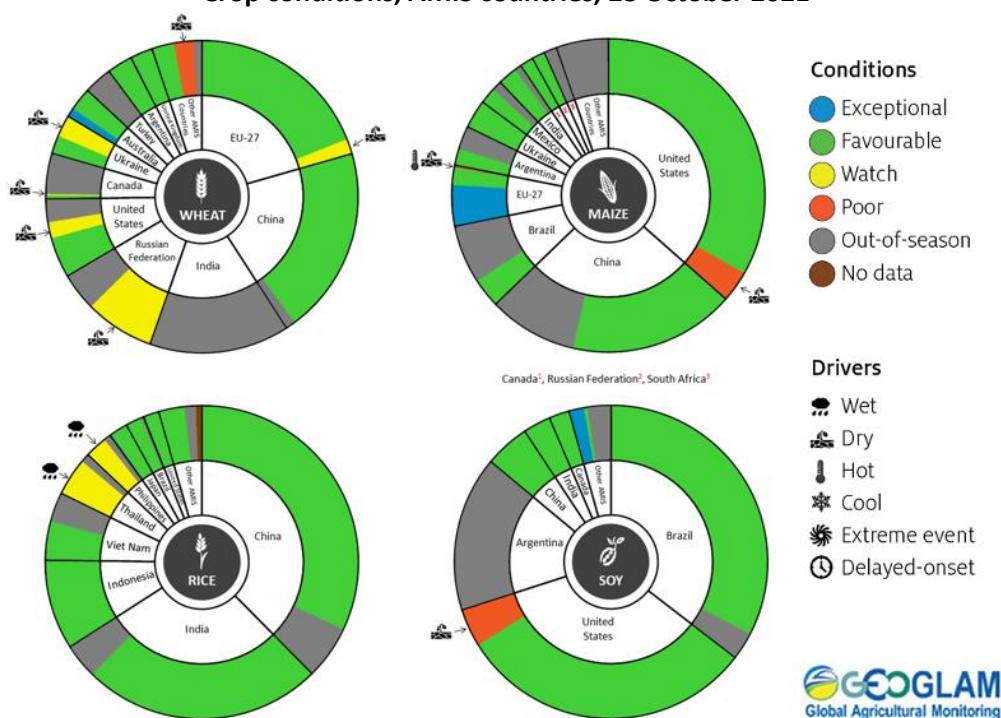
In the northern hemisphere production conditions for wheat have been mixed. Dryness has persisted across parts of Canada, northern United States and key growing regions in the south of the Russian Federation and in the Ukraine. Winter wheat planting is well underway across these 4 key growing regions with dry conditions causing concern for crop establishment. In other major growing regions harvesting of winter wheat is beginning in Argentina and Australia under generally favourable conditions. For major production areas in China and Europe, winter wheat sowing is proceeding under generally favourable conditions.

Corn harvesting activities are ongoing or wrapping up in most major northern hemisphere growing regions. Conditions for corn were favourable for crop development in Argentina, Canada, China, much of the European Union, India, Mexico, the Russian Federation, Ukraine and much of the US. However, corn crops across parts of north-western US, Europe and summer-planted corn in Brazil have been negatively impacted by dry conditions. Meanwhile the sowing of the spring-planted crop (smaller season) in Brazil is beginning under favourable conditions.

Conditions for rice were favourable for crop development in most growing regions, with harvesting underway in China, India, Indonesia, the Philippines, southern Vietnam and the US. Wet season rice in Thailand and the Philippines has been negatively affected by excess rainfall.

Soybean harvesting is well underway or wrapping up across all northern hemisphere growing regions under generally favourable conditions. In Brazil sowing has begun in the main producing regions under favourable conditions.

Crop conditions, AMIS countries, 28 October 2021



AMIS Agricultural Market Information System.
Source: AMIS

The global climate outlook for December 2021 to February 2022 indicates that mixed rainfall conditions are expected for the world's major grain-producing and oilseed-producing regions. Outlooks and potential production impacts for the major grain and oilseed producing countries are presented in the table.

Rainfall outlook and potential impact on the future state of production conditions between December 2021 to February 2022

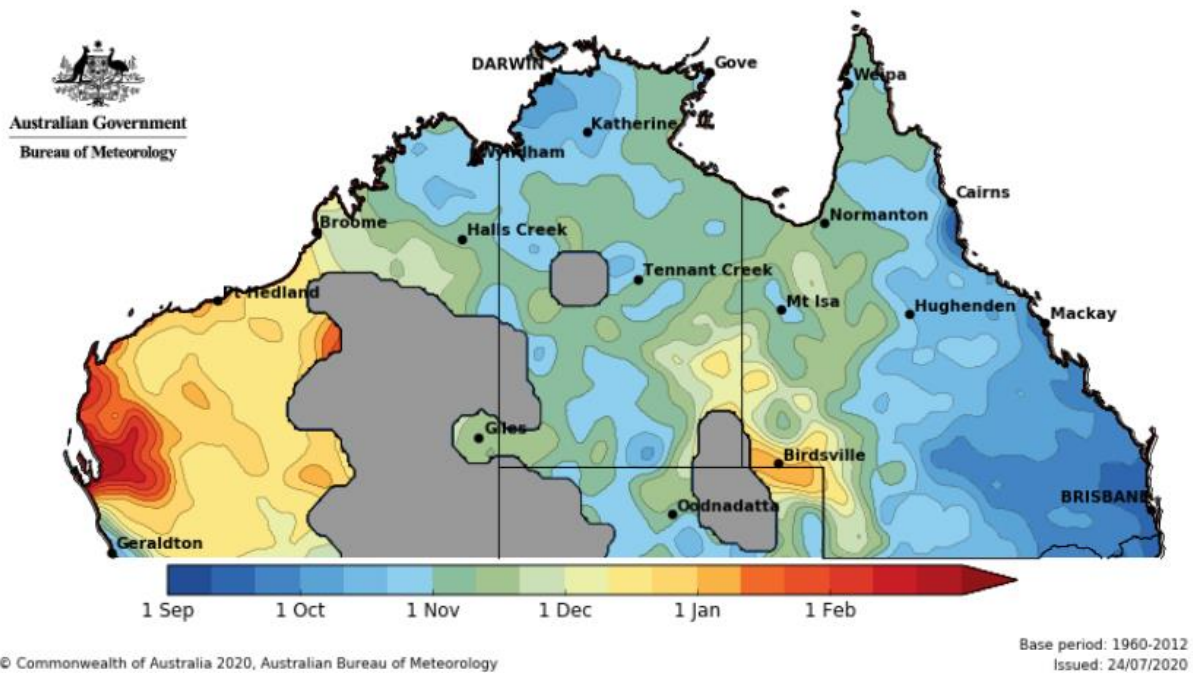
Region	December-February rainfall outlook	Potential impact on production
Argentina	Below average rainfall is expected across most of Argentina between December 2021 to February 2022.	Below average rainfall is likely to adversely affect the flowering and grain filling of corn and soybeans, as well as the planting of sorghum and millet. Over the coming months, cotton, groundnuts, millet, rice, sorghum, sunflower crops will be progressing through vegetative stages. The dry conditions are likely to negatively impact yield potentials for these crops.
Black Sea Region	There is no strong tendency towards either above or below average rainfall between December 2021 to February 2022.	Through December to February, winter wheat and canola will remain dormant. The average rainfall conditions are likely to provide sufficient snowpack to prevent winterkill from freezing temperatures.
Brazil	Above average rainfall is more likely in northern Brazil and parts of the central west, while below average rainfall is more likely across the south of Brazil between December 2021 to February 2022.	Below average rainfall in parts of southern Brazil may adversely affect the development of corn, soybeans, cotton and nuts, rice, sorghum, millet and sunflower. Generally average to above average rainfall in the central-west is likely to support soybean development and corn and cotton planting and development from January.
Canada	Above average rainfall is more likely across much of Canada between December 2021 to February 2022.	Through December to February, winter wheat and canola will remain dormant, with above average rainfall likely to provide sufficient snowpack to prevent winterkill of winter wheat.
China	Above average rainfall is likely across much of north-eastern China and below average to average rainfall is expected across much of the remainder of China between December 2021 to February 2022.	Through December to February, winter wheat and canola will remain dormant, with average rainfall likely to provide sufficient snowpack to prevent winterkill of winter wheat
Europe	Below average rainfall is more likely for isolated parts of eastern Europe, while above average rainfall is expected for parts of central Europe between December 2021 to February 2022. Rainfall is expected to be close to average across much of Europe.	Through December to February, winter wheat and canola will remain dormant. The average rainfall conditions are likely to provide sufficient snowpack to prevent winterkill from freezing temperatures.
South Asia (India)	Average to above average rainfall is likely across much of southern and central India. However, below average rainfall is expected in parts of northern India between December 2021 to February 2022.	Below average rainfall in parts of northern India is likely to negatively impact the planting and vegetative growth of winter wheat and canola between December to February.
Southeast Asia (SEA)	Above average rainfall is likely across much of SEA between December 2021 to February 2022.	Above average rainfall in SEA is likely to benefit corn planting in Indonesia, Thailand and the Philippines during December, but may impede rice harvest activities during January and February
The United States of America	Above average rainfall is more likely for the north-western and north-eastern US, while below average rainfall is more likely across much of the southern half of the US.	Winter wheat and canola are dormant in the United States between December and February. An outlook for further dry condition across southern growing regions could reduce snow cover insulation and damage crops during dormancy in the United States.

1.3. Northern Rainfall Onset

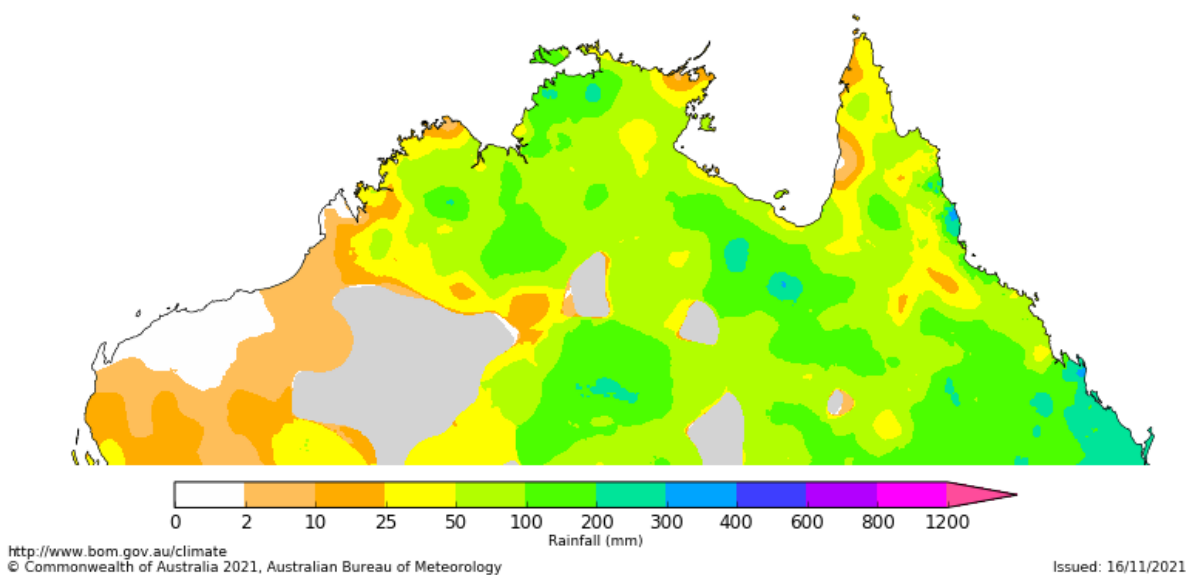
The northern rainfall onset occurs when the total rainfall after 1 September reaches 50 millimetres. This is considered approximately the amount of rainfall required to stimulate plant growth. The northern rainfall onset has occurred across most of Queensland and the Northern Territory, as well as north-eastern parts of Western Australia. These regions have received between 50 to 200 millimetres of rainfall from 1 September to 16 November 2021.

The ongoing Indian Ocean Dipole event and La Niña like conditions has enhanced probabilities of a wetter than average late spring and early summer rainfall, and an early northern rainfall onset across most of northern Australia.

Median Northern Rainfall Onset in La Niña Years



Northern Rainfall Totals since 1 September to 16 November 2021



1.4. Rainfall forecast for the next eight days

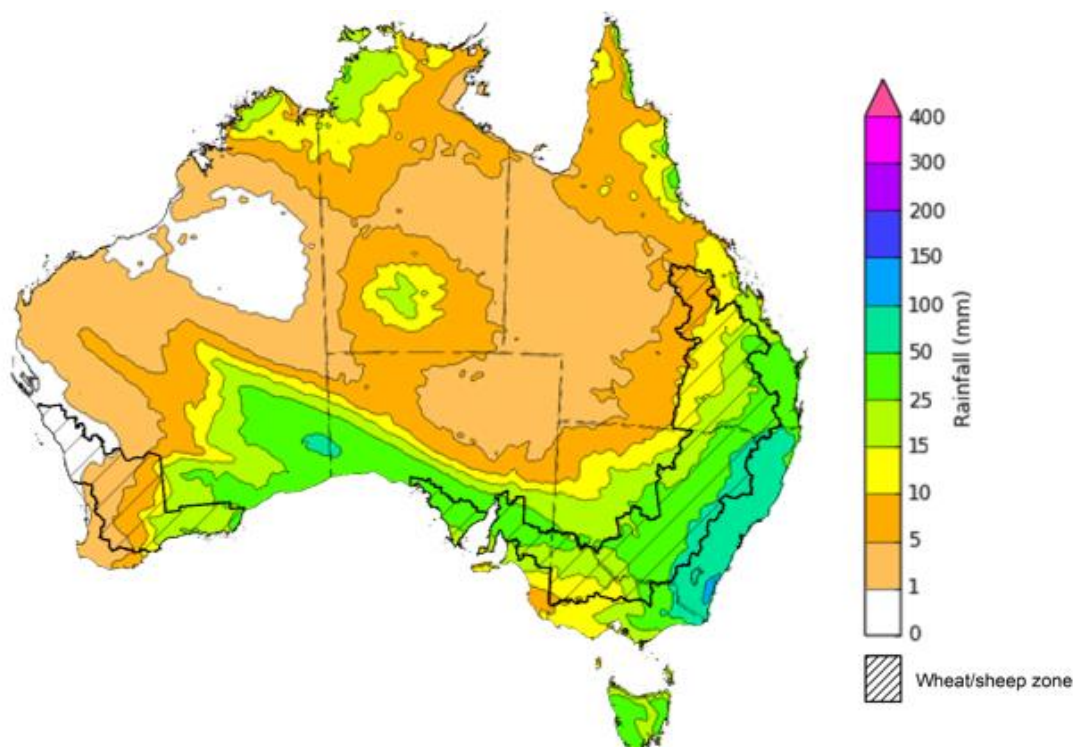
Over the 8-days to 25 November 2021 a series of troughs and low-pressure systems are expected to draw down moist, tropical air, resulting in storms and substantial rainfall across much of southern and eastern Australia and parts of northern Australia. In contrast, much of western and central Australia are expected to receive little to no rainfall over the next 8-days.

Rainfall totals of between 10 and 50 millimetres are forecast for most of New South Wales, eastern Queensland, Victoria, southern South Australia, the far north and south of the Northern Territory the far north and southeast of Western Australia and Tasmania. Rainfall in excess of 50 millimetres is expected across much of eastern New South Wales, and parts of eastern Victoria.

In Australian cropping regions, rainfall totals of between 10 and 50 millimetres are expected across much of New South Wales, Queensland, Victoria, South Australia and south-eastern areas of Western Australia. Rainfall totals in excess of 50 millimetres is expected in some cropping regions in eastern New South Wales. Little to no rainfall is forecast for cropping regions in Western Australia during the next 8-days.

The rainfall expected across Queensland and northern New South Wales is likely to continue to assist the establishment of early sown summer crops and boost soil moisture levels. However, these wet conditions may interrupt further planting activity and harvesting of winter crops in northern growing regions. The continuation of wet, humid conditions from last week's heavy rainfall, increases the risk of grain quality downgrades in mature crops. In southern cropping regions, the expected rainfall is likely to improve plant available moisture and support late spring pasture growth but is unlikely to further improve yield prospect of winter crops.

Total forecast rainfall (mm) for the period 18 November to 25 November 2021



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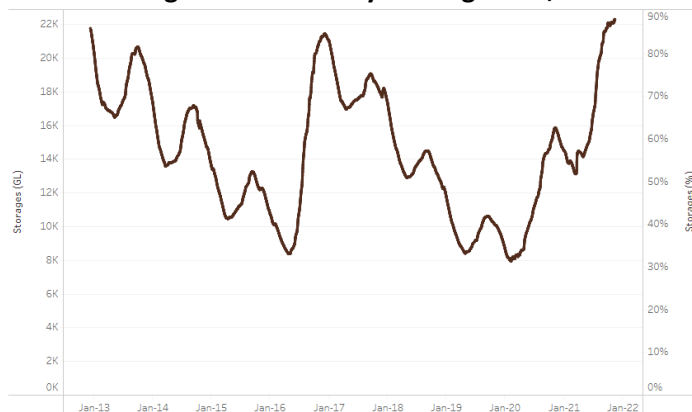
Note: This rainfall forecast is produced from computer models. As the model outputs are not altered by weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.

2. Water

2.1. Water markets – current week

Water storage in the Murray–Darling Basin (MDB) increased by 165 gigalitres (GL) between 9 November 2021 and 16 November 2021. The current volume of water held in storage is 22,276 GL, which represents 88% of total capacity. This is 41% or 6,520 GL more than at the same time last year.

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

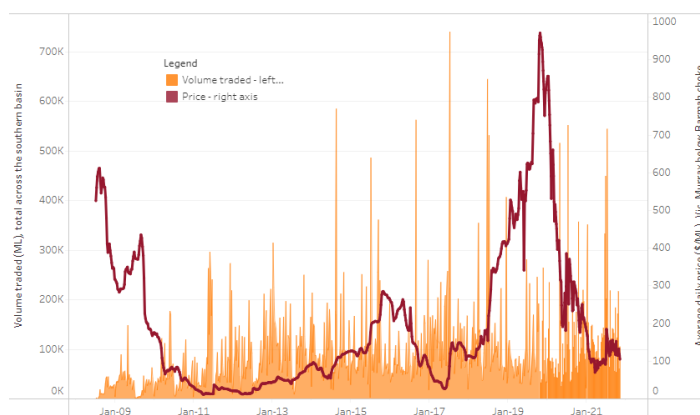


Water storage data is sourced from the Bureau of Meteorology.

Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$118 per ML on 5 November 2021 to \$104 per ML on 12 November 2021. Prices are lower in the Goulburn-Broken, Murrumbidgee, and regions above the Barmah Choke due to the binding of the Goulburn intervalley trade limit, Murrumbidgee export limit, and Barmah Choke trade constraint.

Region	\$/ML
NSW Murray Above	77
NSW Murrumbidgee	90
VIC Goulburn-Broken	75
VIC Murray Below	104

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 17 November 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-181121

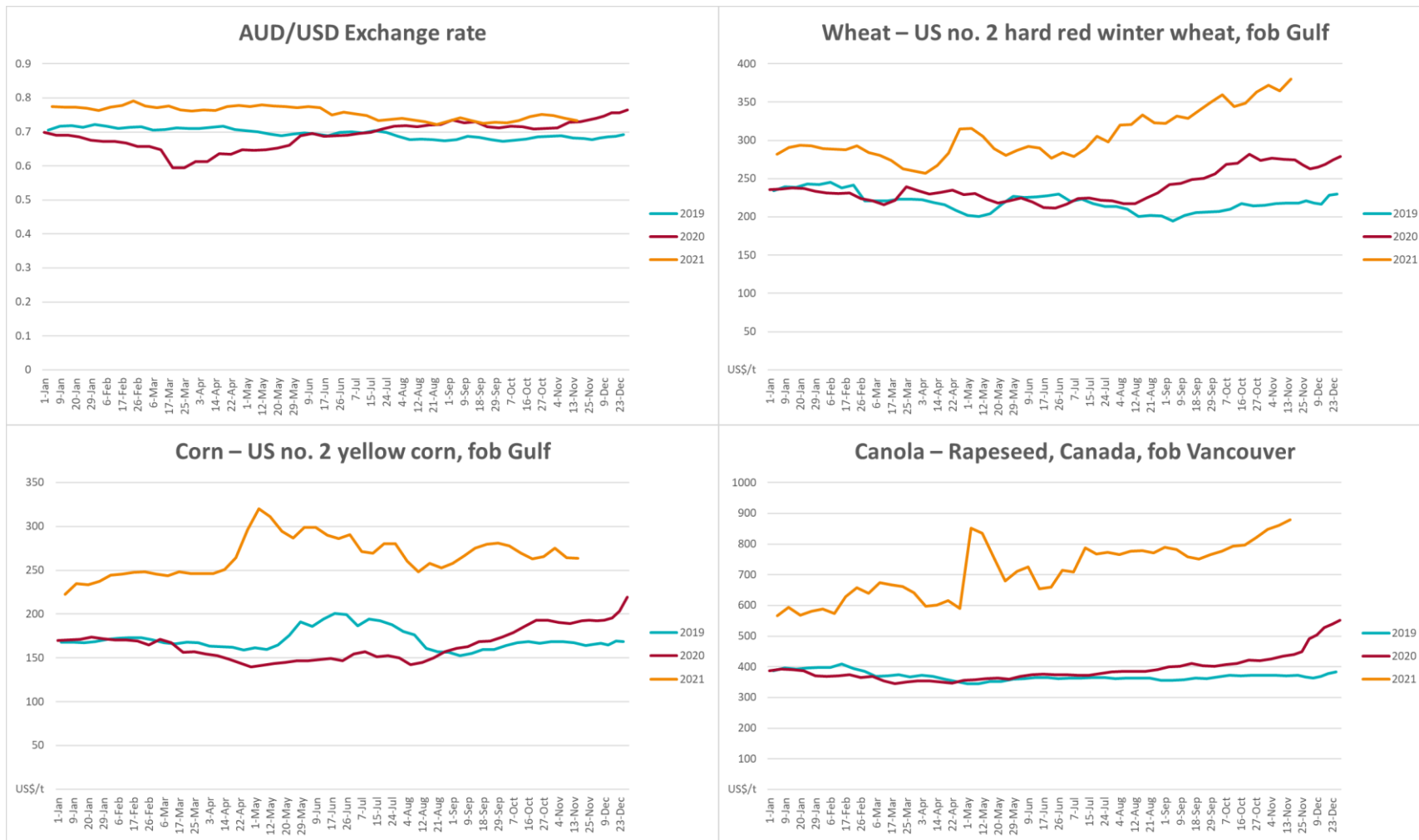
3. Commodities

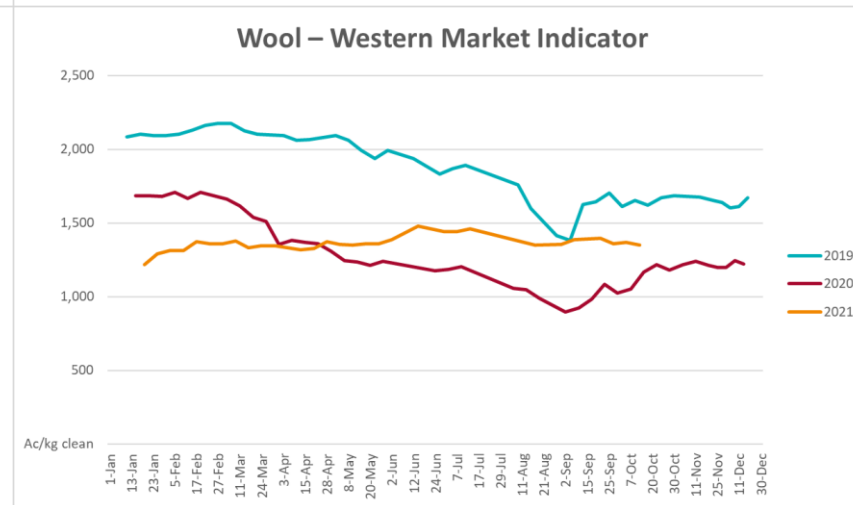
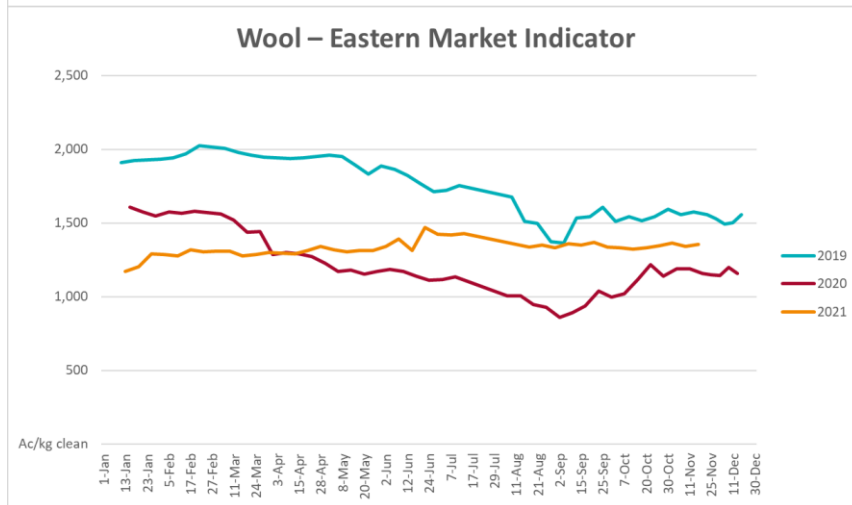
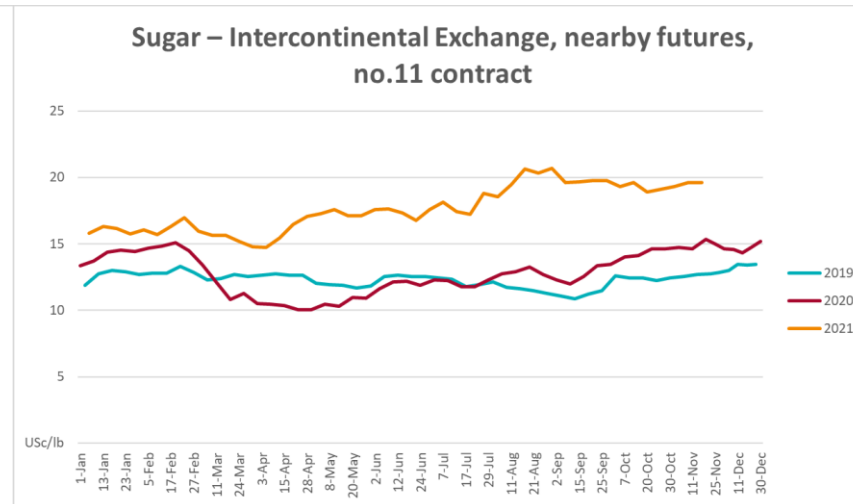
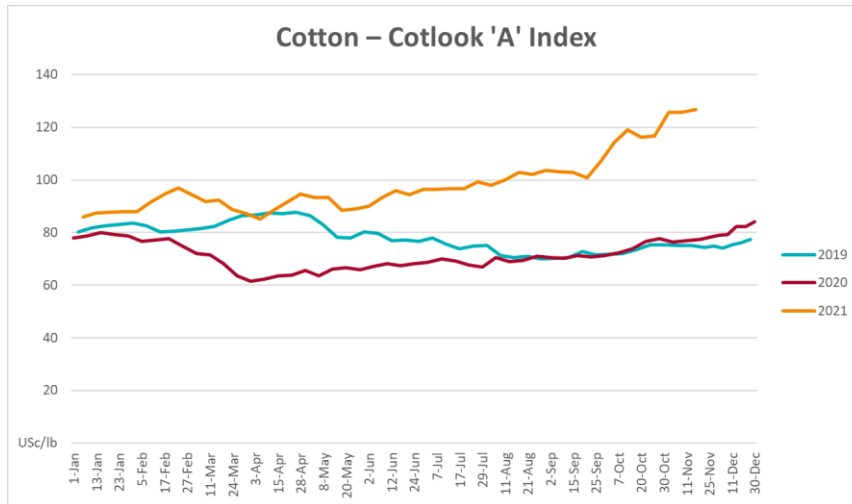
Indicator	Week ended	Unit	Latest price	Previous week	Weekly change	Price 12 months ago	Annual change
Selected world indicator prices							
AUD/USD Exchange rate	17-Nov	A\$/US\$	0.73	0.74	-1%	0.73	0%
Wheat – US no. 2 hard red winter wheat, fob Gulf	17-Nov	US\$/t	380	365	4%	268	42%
Corn – US no. 2 yellow corn, fob Gulf	17-Nov	US\$/t	264	264	0%	193	36%
Canola – Rapeseed, Canada, fob Vancouver	17-Nov	US\$/t	880	861	2%	449	96%
Cotton – Cotlook 'A' Index	17-Nov	USc/lb	127	126	1%	78	62%
Sugar – Intercontinental Exchange, nearby futures, no.11 contract	17-Nov	USc/lb	19.6	19.6	0%	15	31%
Wool – Eastern Market Indicator	17-Nov	Ac/kg clean	1,356	1,340	1%	996	36%
Wool – Western Market Indicator	13-Oct	Ac/kg clean	1,349	1,370	-2%	1,185	14%
Selected Australian grain export prices							
Milling Wheat – APW, Port Adelaide, SA	17-Nov	A\$/t	473	453	4%	350	35%
Feed Wheat – ASW, Port Adelaide, SA	17-Nov	A\$/t	467	453	3%	330	42%
Feed Barley – Port Adelaide, SA	17-Nov	A\$/t	386	379	2%	288	34%
Canola – Kwinana, WA	17-Nov	A\$/t	1,038	1,038	0%	672	54%
Grain Sorghum – Brisbane, QLD	17-Nov	A\$/t	369	369	0%	360	3%
Selected domestic livestock indicator prices							
Beef – Eastern Young Cattle Indicator	17-Nov	Ac/kg cwt	1,093	1,061	3%	823	33%
Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic	10-Nov	Ac/kg cwt	570	584	-2%	653	-13%
Lamb – Eastern States Trade Lamb Indicator	17-Nov	Ac/kg cwt	837	833	0%	773	8%
Pig – Eastern Seaboard (60.1–75 kg), average of buyers & sellers	20-Oct	Ac/kg cwt	328	318	3%	299	10%
Goats – Eastern States (12.1–16 kg)	03-Nov	Ac/kg cwt	891	891	0%	843	6%
Live cattle – Light steers ex Darwin to Indonesia	17-Nov	A\$/t	473	453	4%	350	35%
Live sheep – Live wethers (Muchea WA saleyard) to Middle East	22-Sep	\$/head	147	171	-14%	126	17%

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	17-Nov	US\$/t	3,987	3,921	2%	3,141	27%
Dairy – Skim milk powder	17-Nov	US\$/t	3,676	3,627	1%	2,674	37%
Dairy – Cheddar cheese	17-Nov	US\$/t	5,162	5,058	2%	3,636	42%
Dairy – Anhydrous milk fat	17-Nov	US\$/t	6,472	6,384	1%	5,065	28%

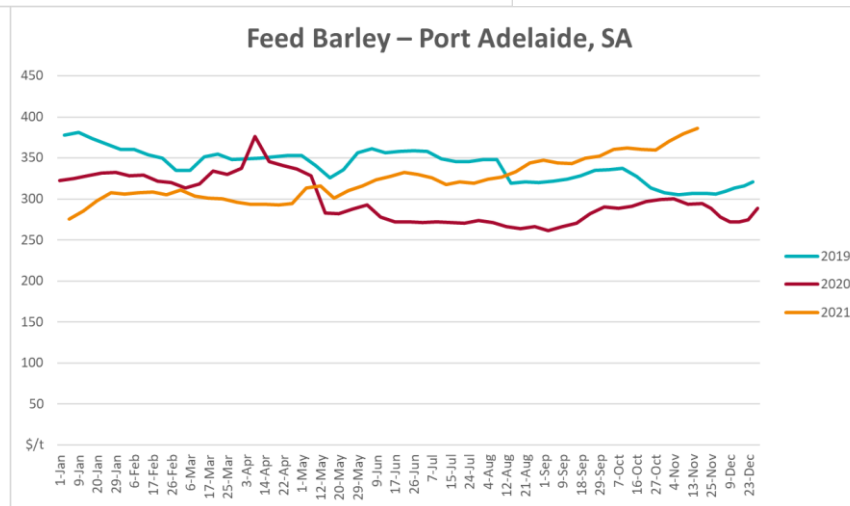
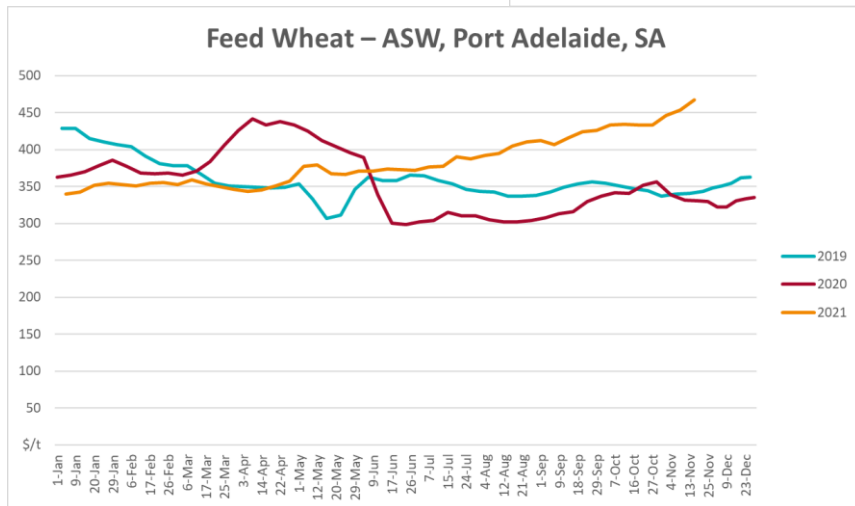
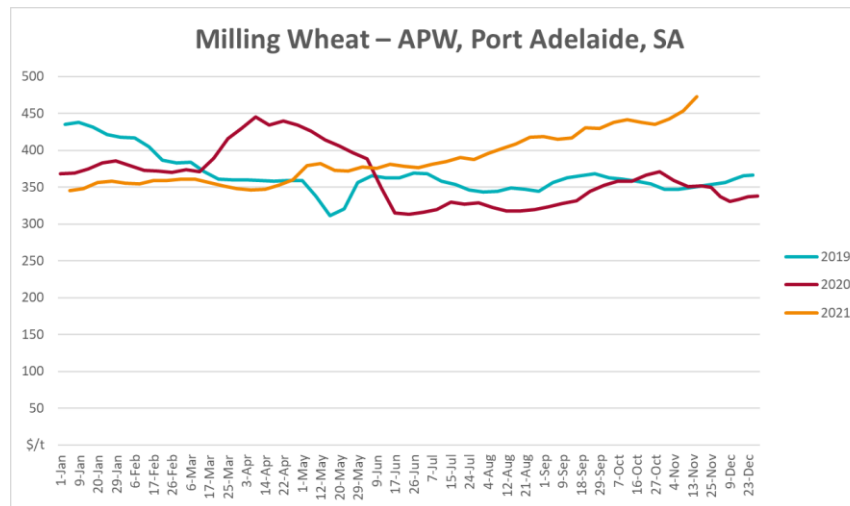
^a Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.

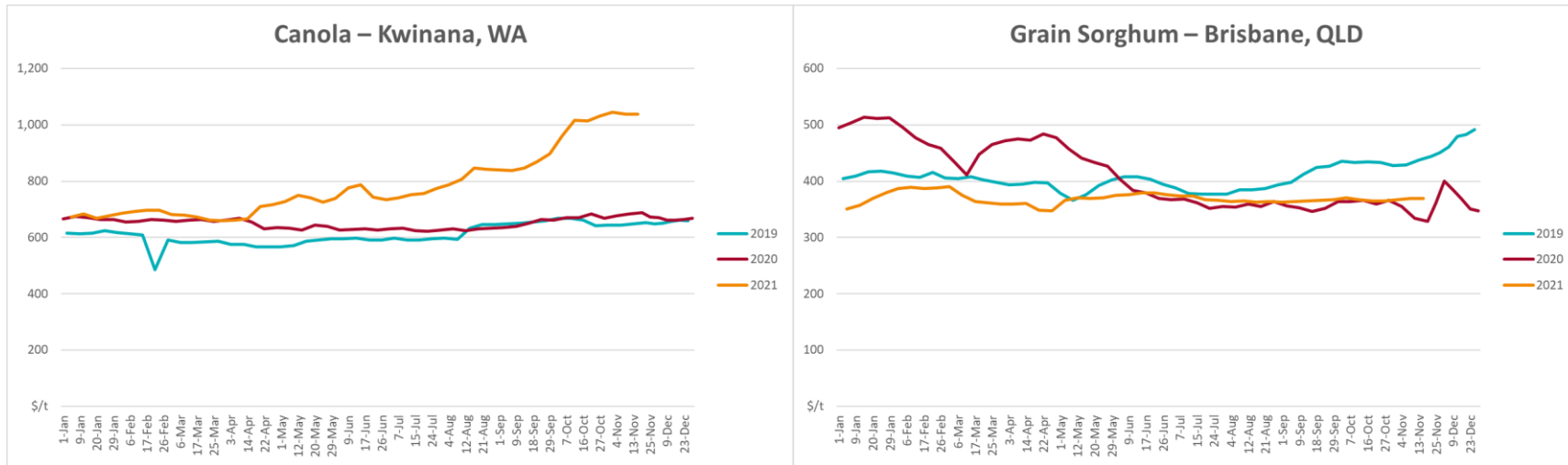
3.1. Selected world indicator prices



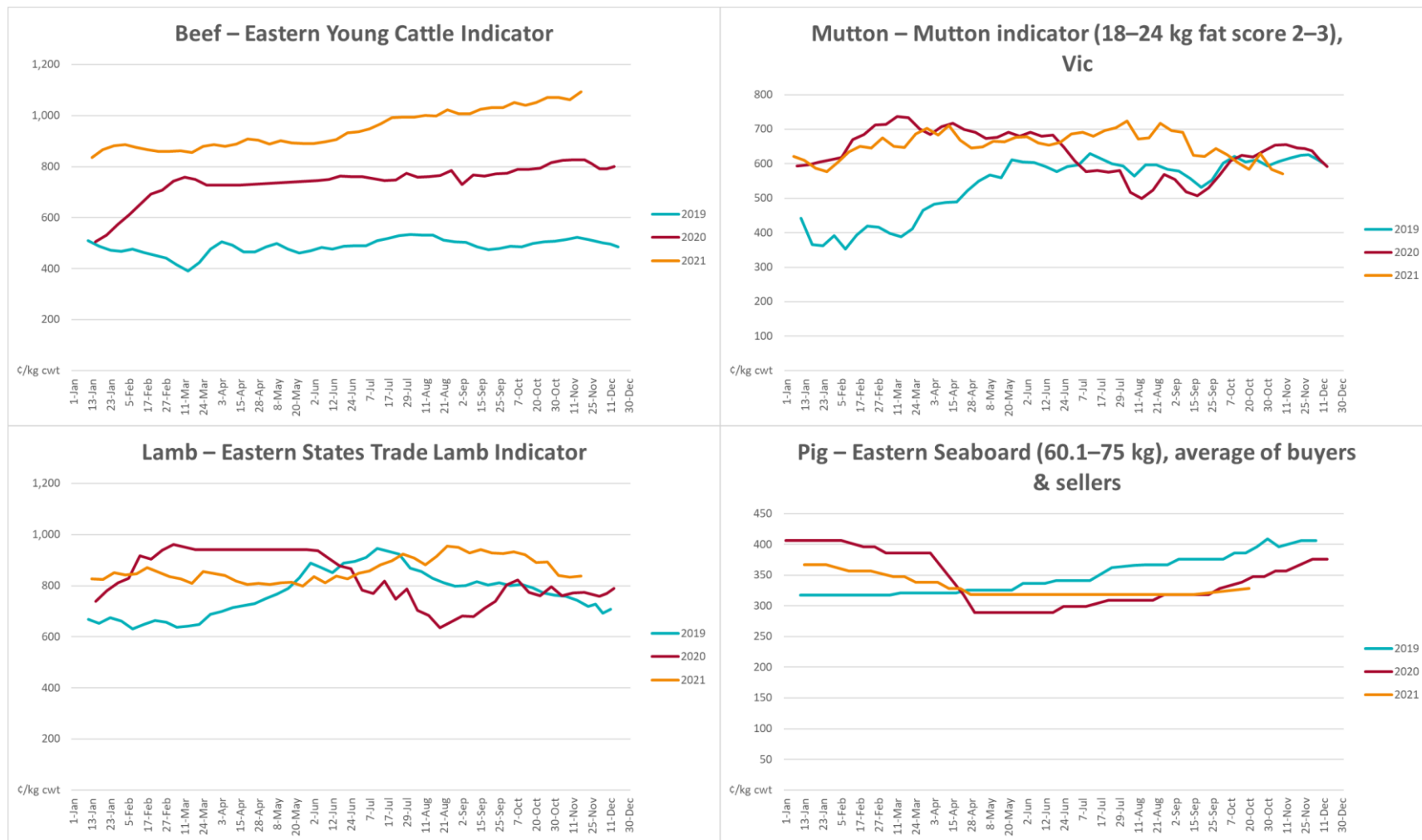


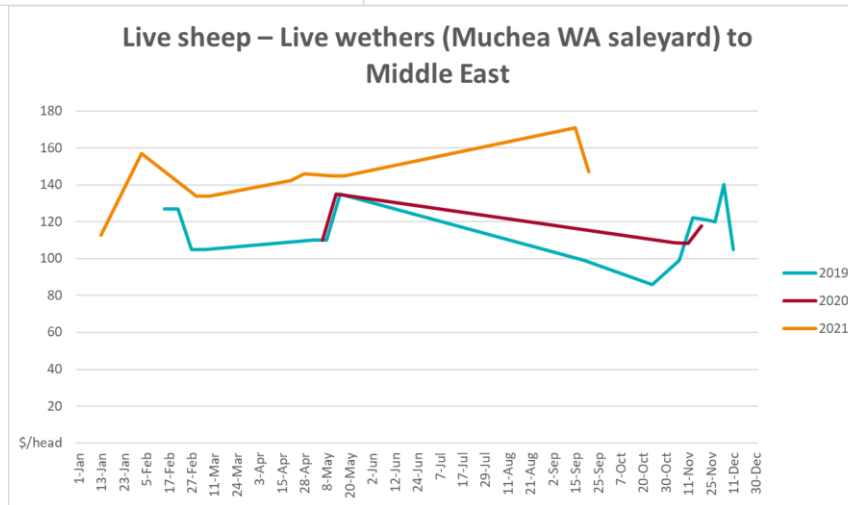
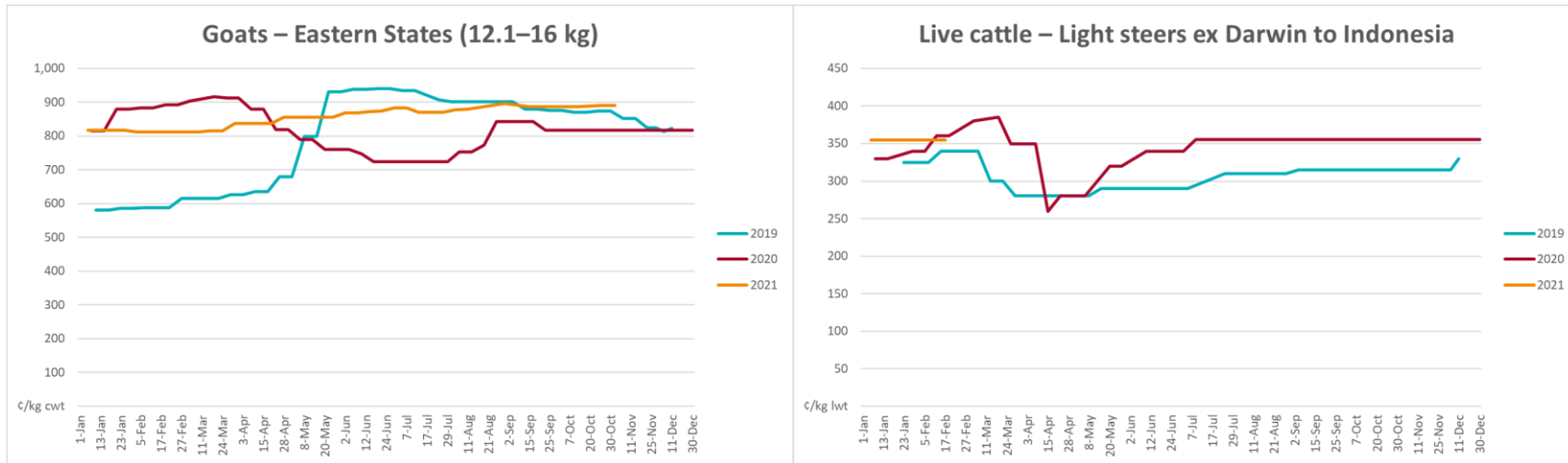
3.2. Selected domestic crop indicator prices



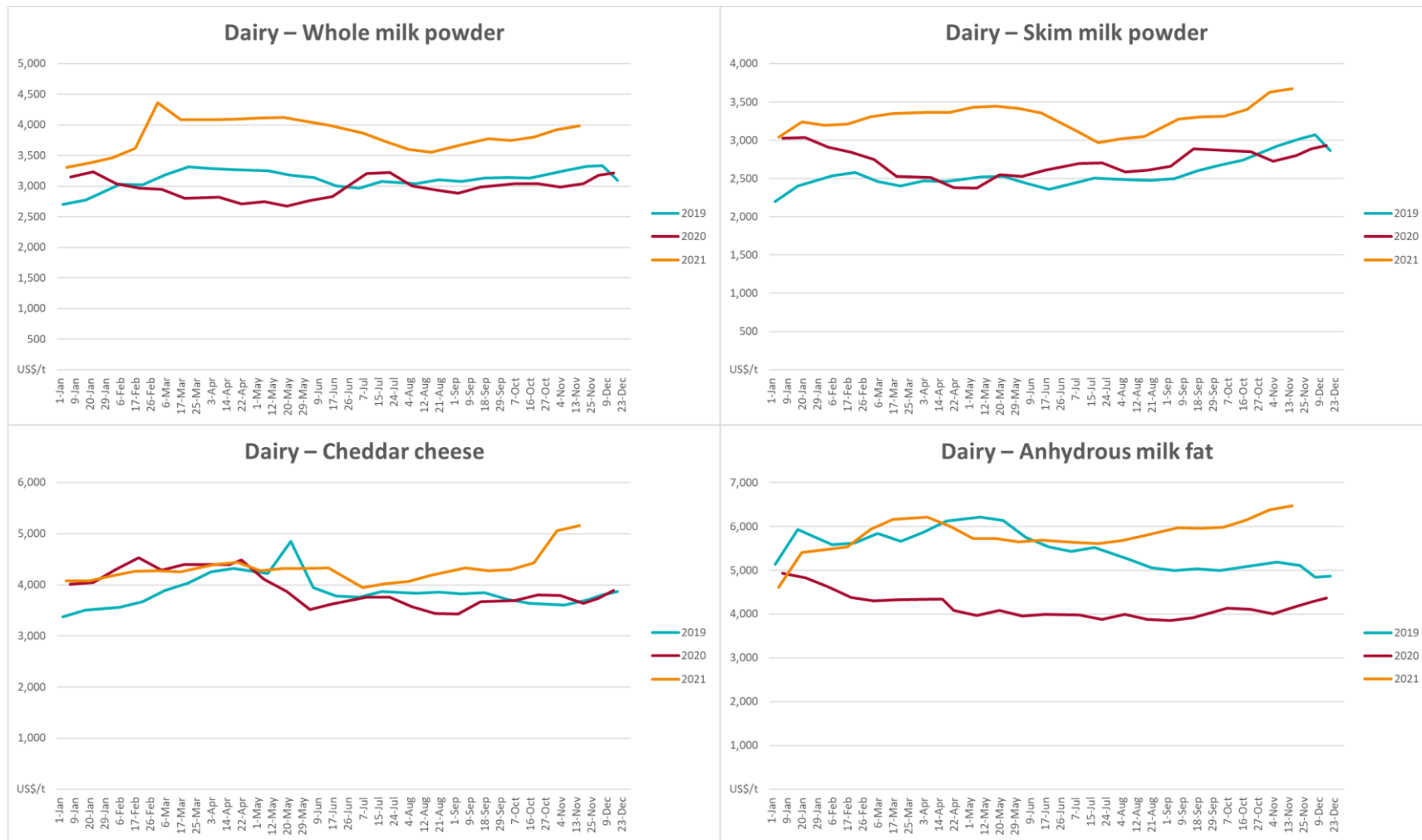


3.3. Selected domestic livestock indicator prices

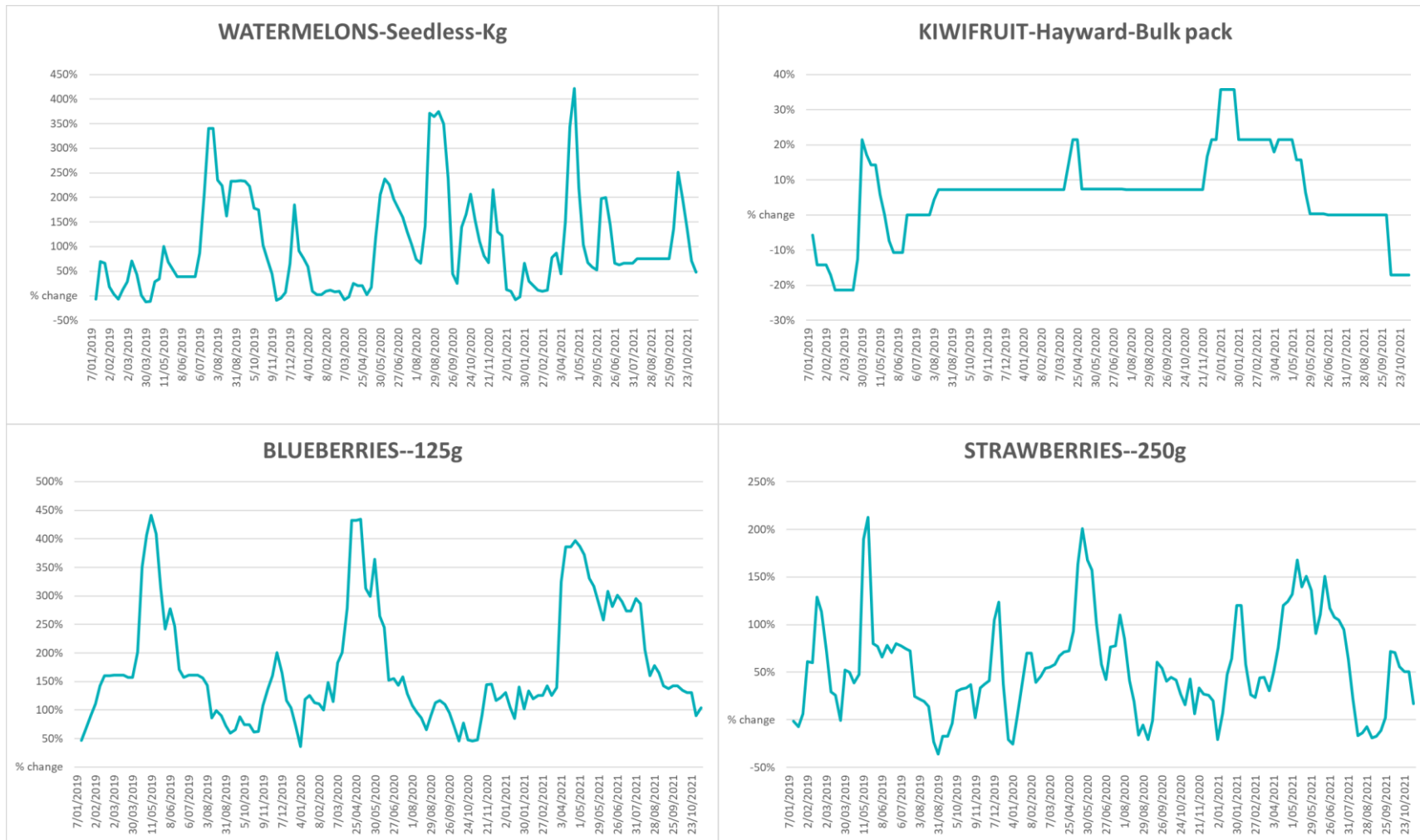


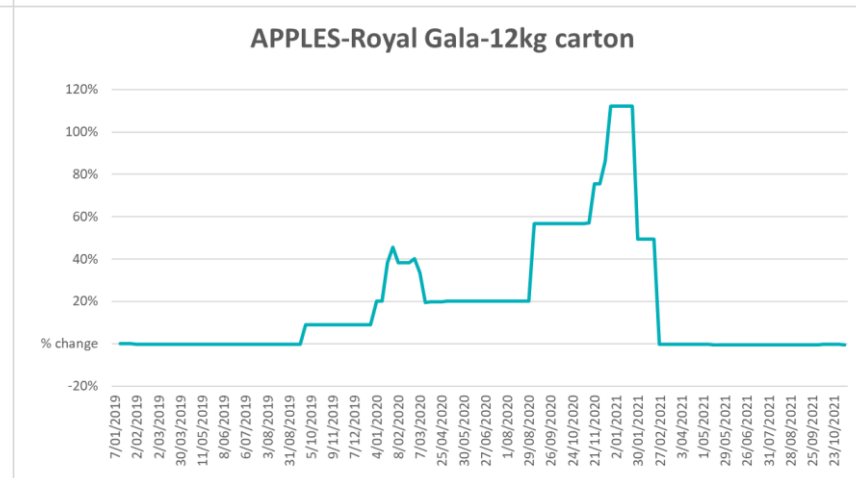
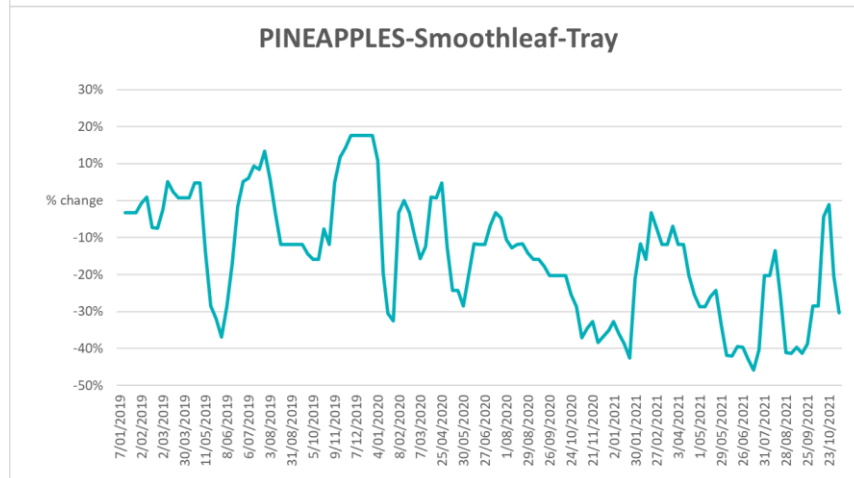
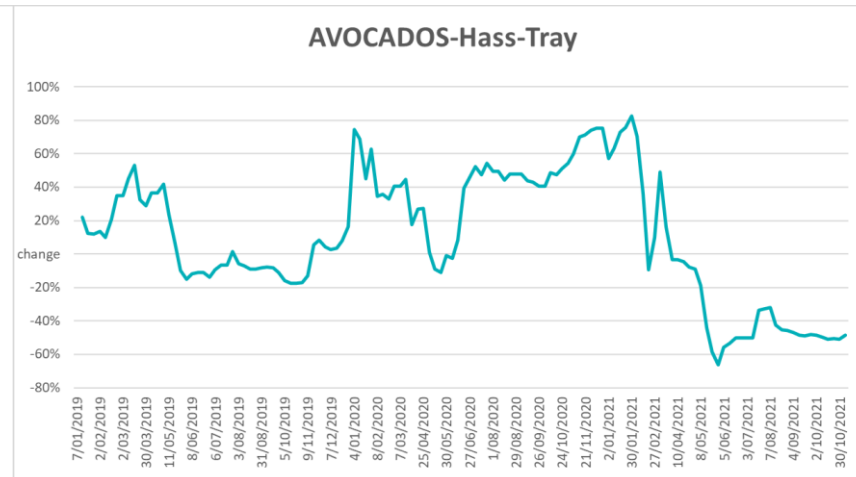
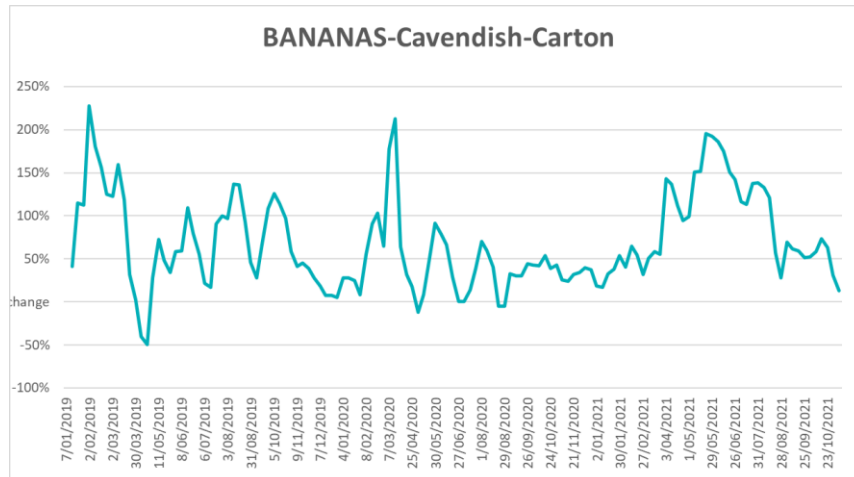


3.4. Global Dairy Trade (GDT) weighted average prices

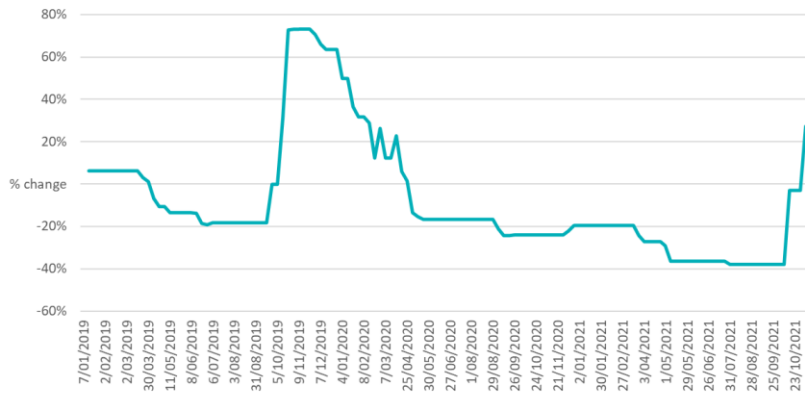


3.5. Selected fruit and vegetable prices





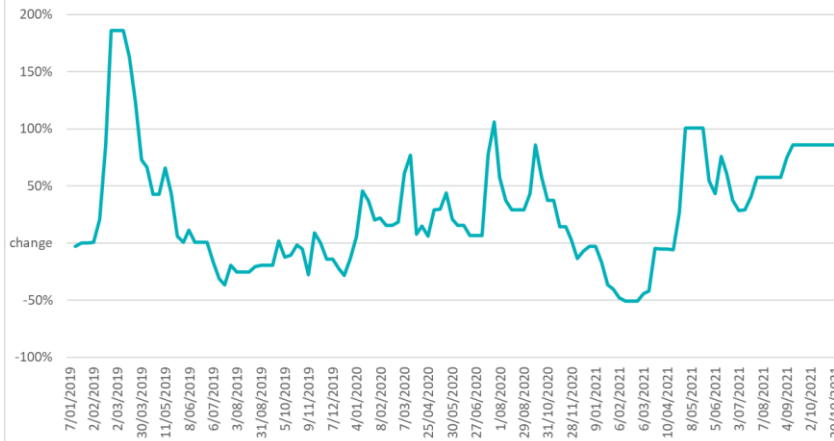
ONIONS-Brown-20Kg bag



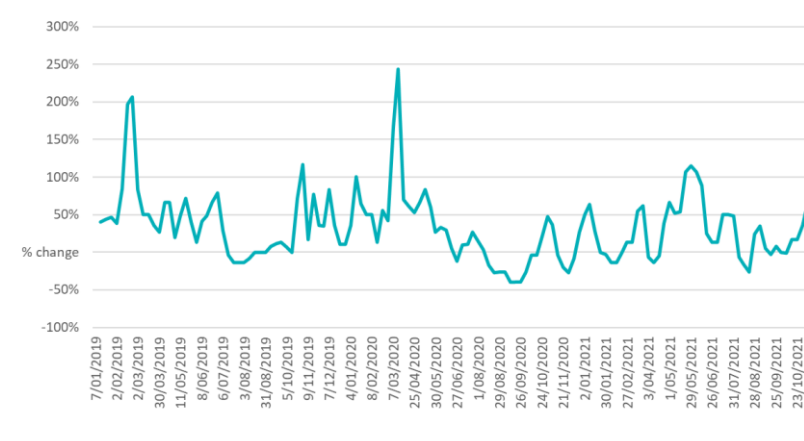
PUMPKINS-Grey Bulk-Kg

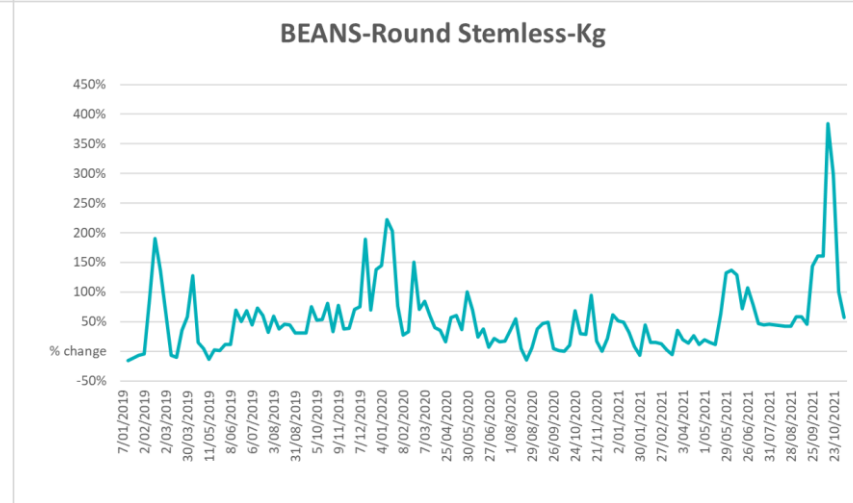
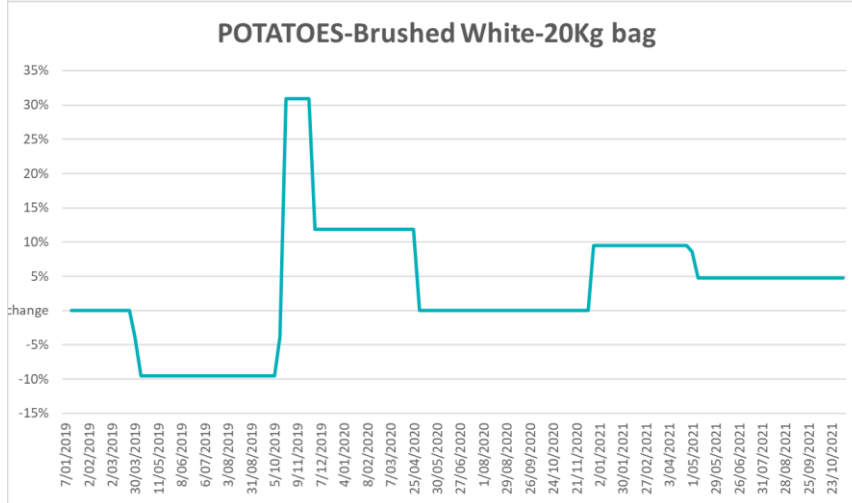
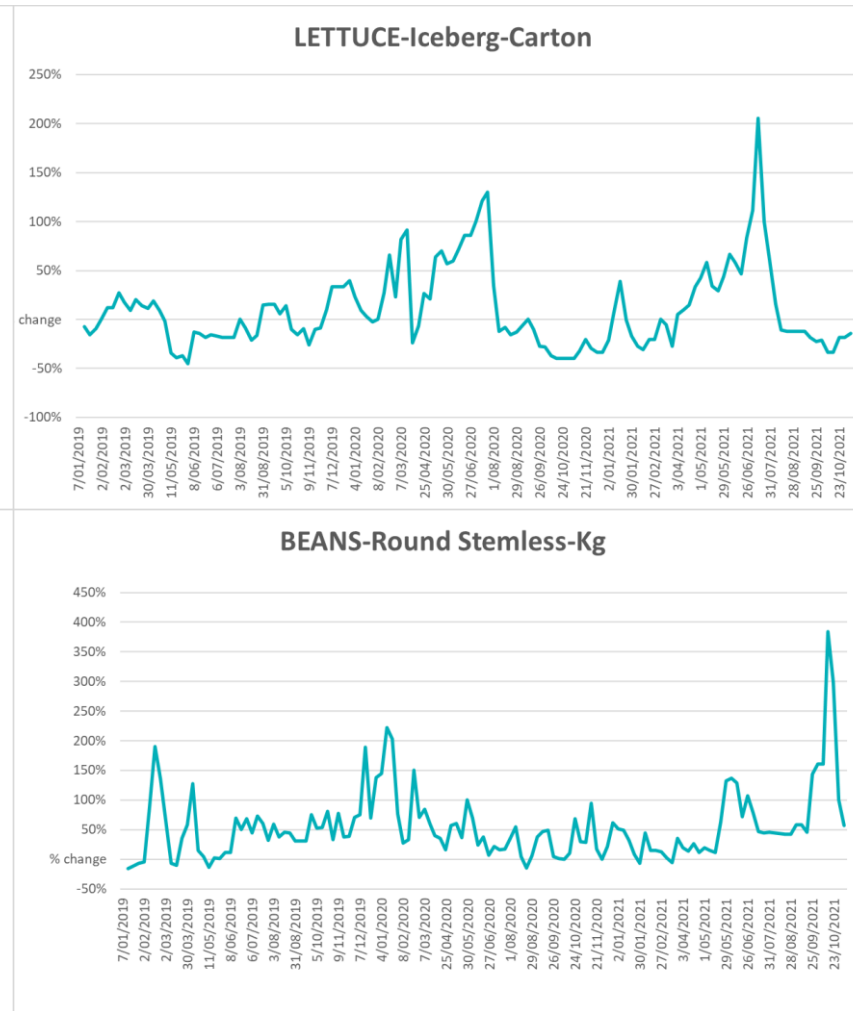
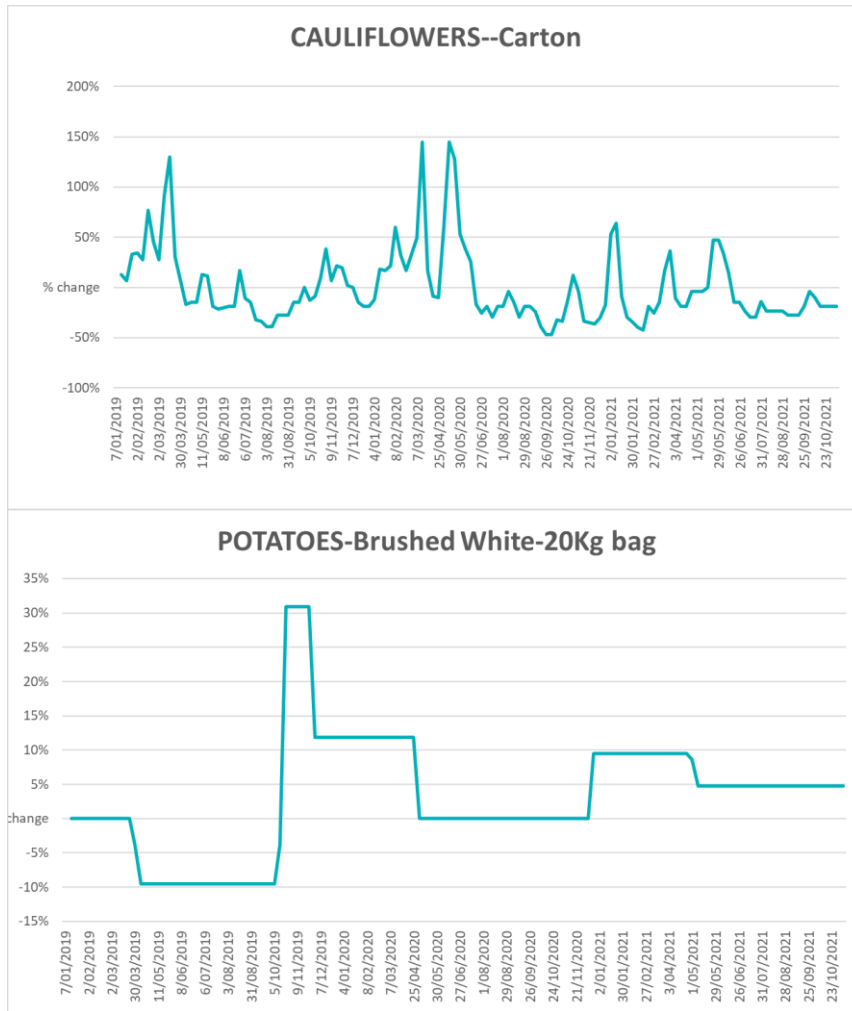


TOMATOES-Gourmet-9Kg carton

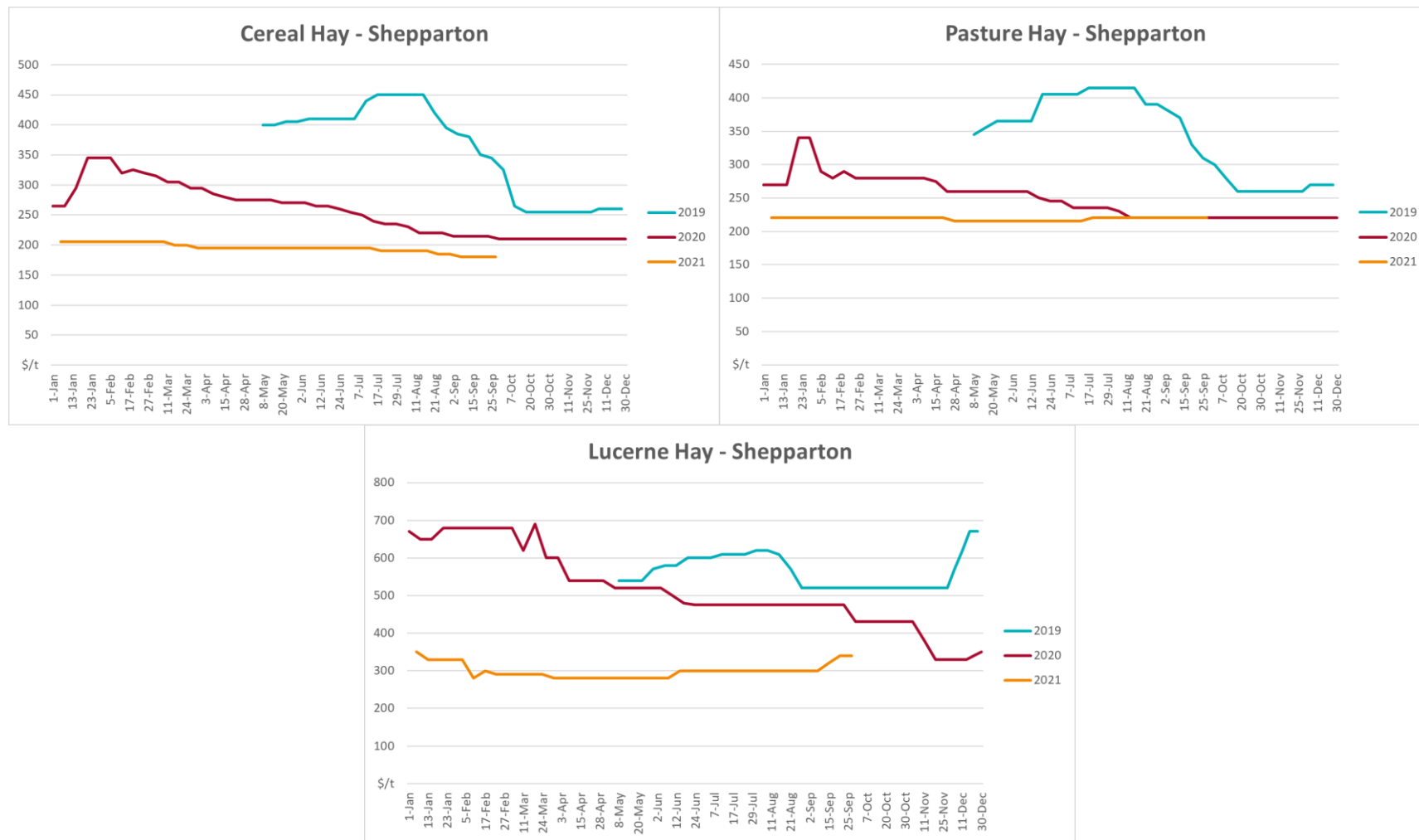


BROCCOLI-A Grade-8Kg pack





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 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

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.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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