

## Wheat Market Outlook and Price Report: May 15, 2023

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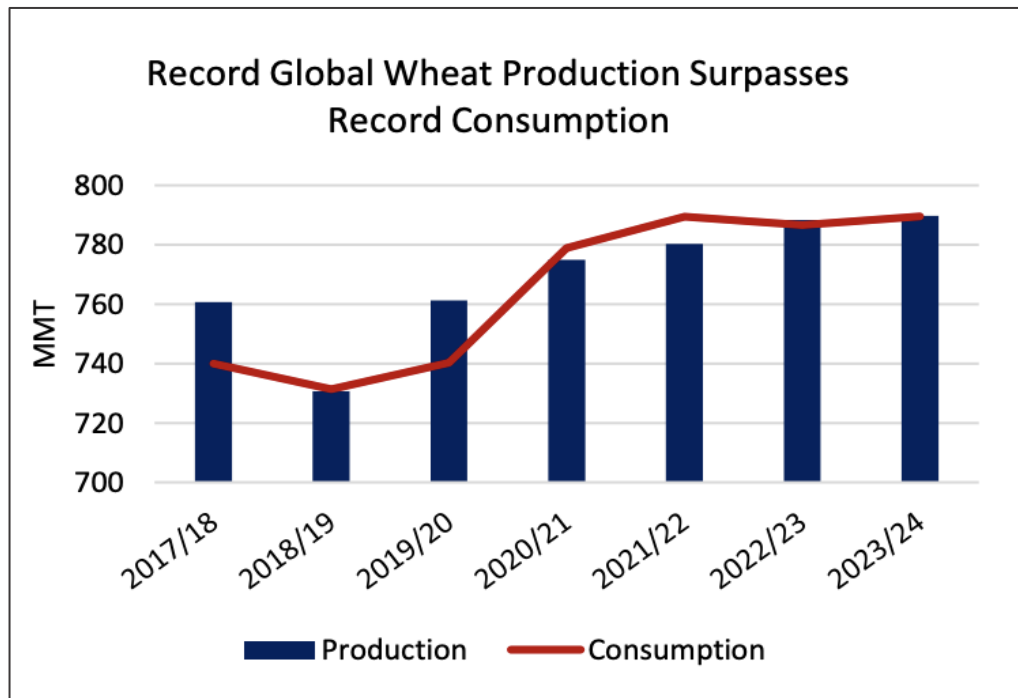
### i) Background and Rationale for the Report

The following wheat market outlook and price report will be published on a weekly basis on the Sask Wheat Website. The report provides producers with an overview of world wheat markets, a market forecast, and benchmark prices at both the primary elevator and export positions (FOB Vancouver or elsewhere).

The report is made up of several sections. Following this section, a World Wheat overview is provided, which includes a summary of wheat market fundamentals, world production and trade, and a wheat market outlook. This is followed by several price tables, which include primary elevator bids at various Saskatchewan locations (Table 1), grain spreads (Table 2), and FOB port prices and basis (as measured by subtracting the primary elevator price (Rosetown) from the relevant port location price for individual crops) (Table 3). Table 3 is preceded by a description of the various assumptions, definitions and methodology used in arriving at the FOB port prices and in the export basis calculation.

### ii) Wheat Market Outlook May 15, 2023

#### USDA-FAS on the 2022/2023 Global Wheat Production:

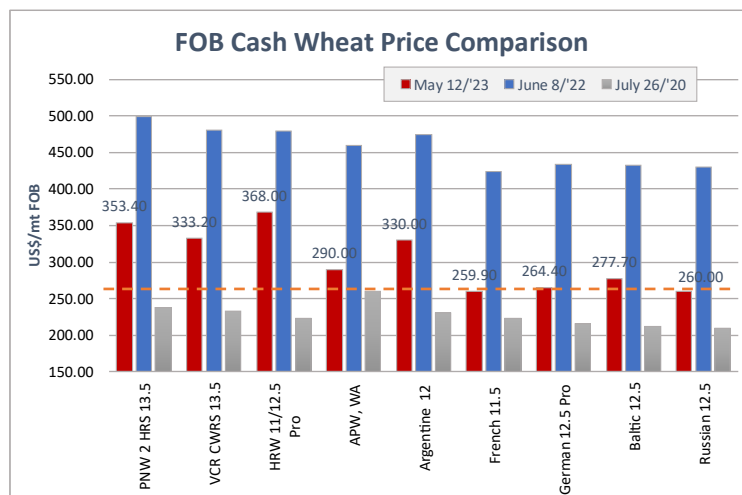


Source: USDA-FAS, May 2023

- According to the USDA's Foreign Agricultural Service on May 12, the **global wheat outlook** is for larger production and consumption with declining global trade and ending stocks.

- **Wheat production** was projected to increase with larger crops in Argentina, Canada, China, the EU, India and Turkey more than offsetting large declines for Australia, Kazakhstan, Russia and Ukraine.
- **Global trade in wheat** will contract with lower imports for China. Declines in exports for Australia, India, Ukraine and the United States will more than offset increases for Argentina, Canada and the EU.
- **Global wheat consumption** is forecast up on larger Food, Seed, and Industrial (FSI) use more than offsetting lower feed and residual use.
- **Wheat ending stocks** for 2023/2024 are forecast to be down, with smaller stocks in the EU, Russia and the United States.

### FOB Wheat Price Comparison



- FOB wheat prices have adjusted further led by French wheat at US\$259.90/mt and by Russian wheat at US\$260/mt FOB.
- Spring wheat off the West Coast/ PNW is cheaper than HRW in the Gulf.
- For new crop, US SRW is currently about \$3/mt cheaper priced to Russian wheat, albeit only on a FOB basis.

### ➤ Global wheat production and trade:

There is a lot of competition in the wheat markets as wheat is produced around the world. Below is a brief synopsis on last week's market events in the major wheat origins.

#### Futures:

- July 2023 contract Chicago winter wheat closed at \$635, up 7-6 cents on Friday, *down 25-2 cents on the week.*
- July 2023 contract Kansas hard red winter wheat closed at \$877-0, up 35-4 cents on Friday, *up 44 cents on the week.*
- July 2023 Minneapolis hard red spring wheat closed at \$844-6, up 8 cents on Friday, *up 8-6 cents on the week.*
- *Wheat futures are currently up this Monday morning by 21 – 25 cents/ bushel.*

**CBOT July 2023 Wheat (1 yr.)**

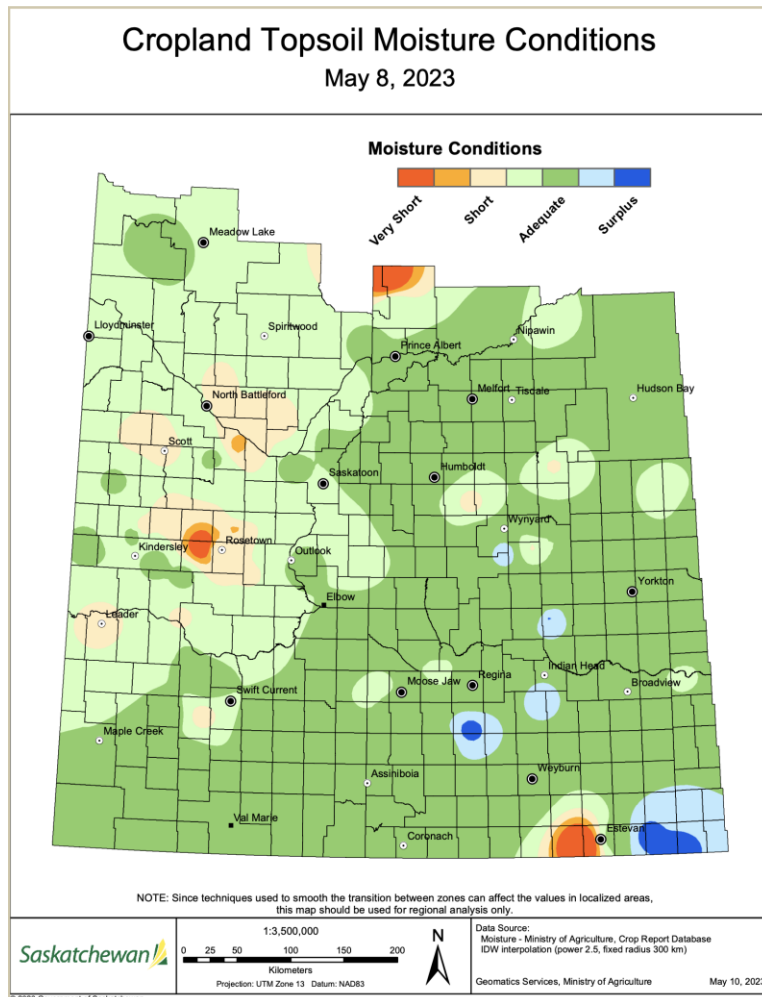
**KC July 2023 Wheat**

**Mpls. July 2023 Wheat**



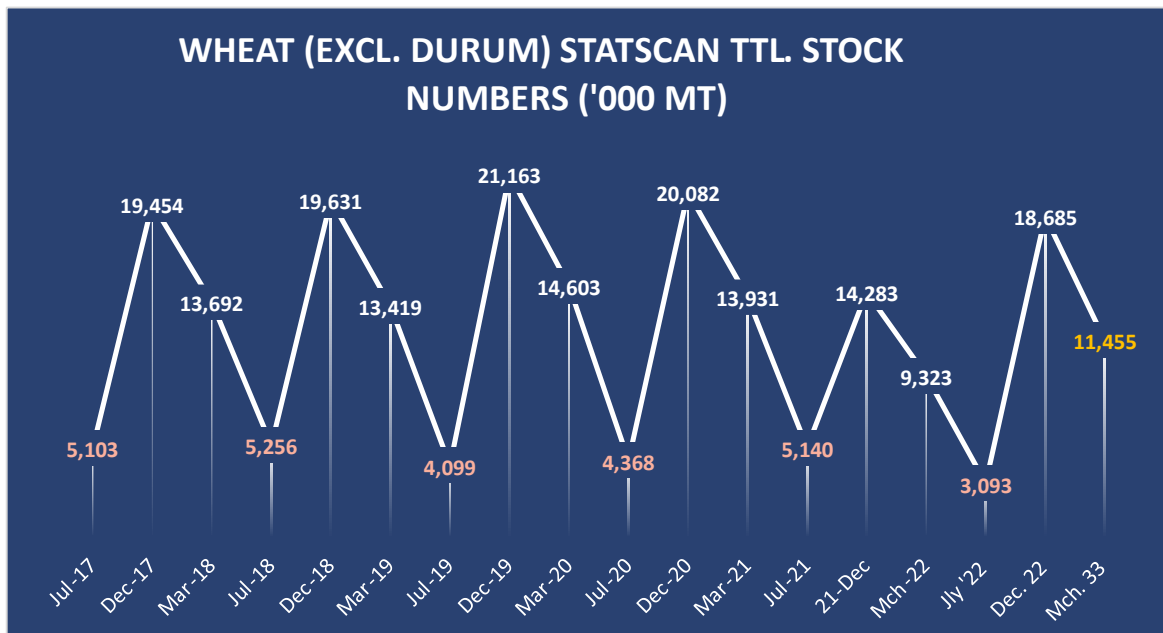
**Canadian Wheat**

- Seeding on the Prairies is becoming general, with good progress across most areas. General soil moisture seems to have improved as well.



- The **StatsCan stocks** report on May 9 showed wheat stocks excl. durum at 11.5 million mt, which is 23 per cent or two point one million mt higher than wheat stocks held at the same time last year. The wheat stocks are still lower than in the pre-drought years. Of the total wheat stocks, 72 per cent (eight point two million mt) were held on farms, while commercials held three point two million mt (28 per cent).

Statistics Canada May 9/23 - Ttl. Stocks as of Mch. 31															
Type of stock	Farm and commercial, total					Farm stocks					Commercial stocks				
Type of crop	Dec-21	Mar-22	Jul-22	Dec-22	Mar-23	Dec-21	Mar-22	Jul-22	Dec-22	Mar-23	Dec-21	Mar-22	Jul-22	Dec-22	Mar-23
	Metric tonnes														
Wheat, all	16,816	11,220	3,663	22,382	13,261	12,492	7,133	953	18,201	9,343	4,324	4,087	2,709	4,181	3,918
Wheat, durum	2,533	1,897	569	3,697	1,806	1,521	1,040	83	2,936	1,109	1,012	857	486	761	697
Wheat, all excl. durum	14,283	9,323	3,093	18,685	11,455	10,971	6,094	870	15,265	8,234	3,313	3,230	2,223	3,420	3,221



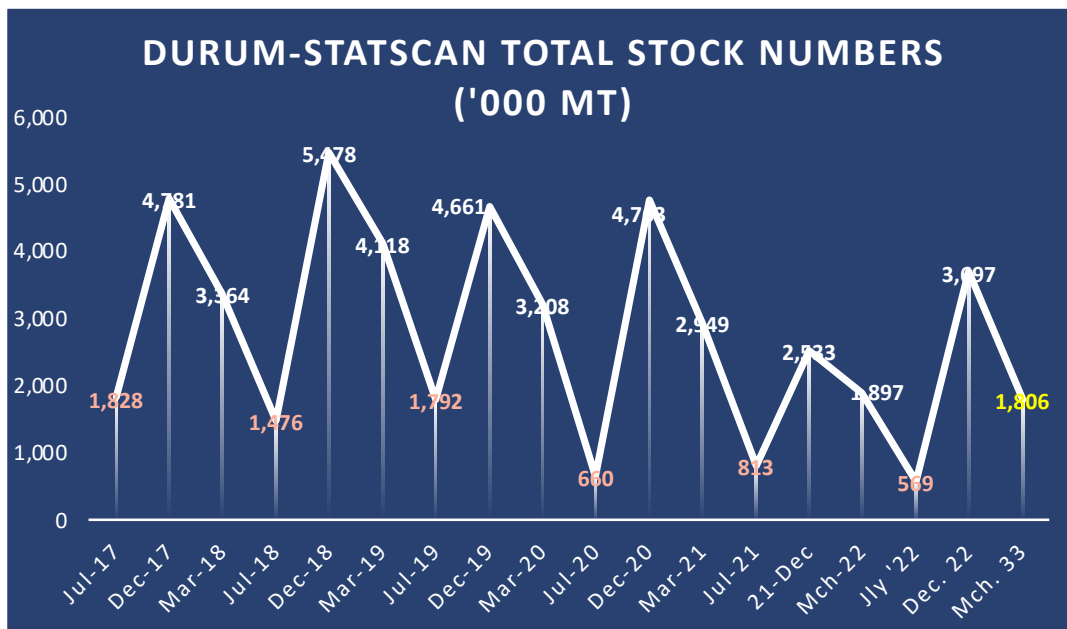
Source: Mercantile, based on StatsCan data

- At 334k mt, **Canadian wheat exports** in week 40 were lower than last week's, advancing YTD wheat exports to 15.6 million mt, 6.8 mln mt higher (+77 per cent) than last year-to-date.

(CGC) Grain Handling Summary Wheat		Week 40			(to May 7/'23)
	('000 mt)	Prod. Dlvs.	Terminal Rcpts.	Bulk exports	Dom. Disappearance
Week 40		214.5	438.1	<b>334.3</b>	<b>98.3</b>
Week ago		275.4	485.9	572.9	136.7
YTD		18,281.3	18,416.2	15,631.9	3,381.8
Last YTD		12,317.7	11,222.8	8,851.6	3,141.9
<b>YTD less Last YTD</b>		<b>5,963.6</b>	<b>19,500.2</b>	<b>6,780.3</b>	<b>239.9</b>
<b>YTD over Last YTD</b>		<b>148%</b>	<b>164%</b>	<b>177%</b>	<b>108%</b>

Source: Mercantile based on CGC data

- *In the USDA-WASDE report, Canada is projected to have greater exports based on a larger crop and reduced competition in Asia from Australia. Canadian exports are expected to reach 27.5 million mt. [See also graph below in U.S. section.]*
- Cash values of traded wheat have steadily dropped over the past weeks due to supply pressure on the markets by Russian and EU wheat supplies.
- **The rally in futures is a good opportunity to finish old crop sales if not already done. For the 2023 crop, we expect pressure by EU and Russian wheat in the markets during the summer/fall (as they will be short of storage space). On the other hand, the weather will be critical for the next 4-6 months to ensure good crop development, with no room for any problems in the production regions of major exporters. - We would leave markets alone this week and concentrate on seeding.**
- **Durum:** Seeding in southern Saskatchewan is proceeding well, and moisture has improved in many areas.
- The **StatsCan stocks report** for durum showed durum stocks as of March 31, 2023 at one point eight million mt, which is five per cent or 91m mt *lower* than durum stocks held at the same time last year. This is also significantly lower than March 31 stocks in previous years.
- Of the total durum stocks, 61 per cent (one point one million mt) were held on farms, while commercials held 697k mt (39 per cent).



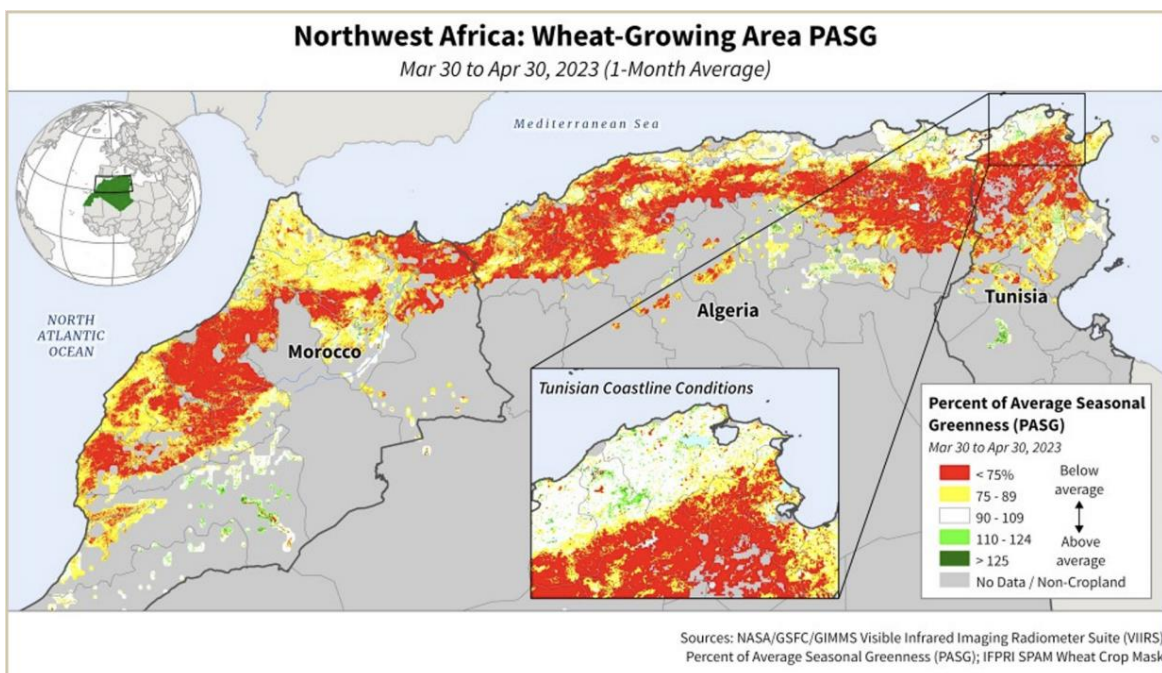
Source: Mercantile, based on StatsCan data

- **Durum exports** for week 40 were at 90k mt, for a YTD total of four point three million mt, compared to two million mt last YTD. Exports are more than double last year's.

(CGC) Grain Handling Summary Durum		Week 40		(to May 7/'23)
('000 mt)	Prod. Dlvs.	Terminal Rcpts.	Bulk exports	Dom. Disappearance
Week 40	53.2	84.8	89.6	2.7
Week ago	44.9	134.2	194.8	13.7
YTD	4,451.5	5,058.8	4,323.6	544.3
Last YTD	2,062.5	2,402.3	1,952.9	349.8
<b>YTD less Last YTD</b>	<b>2,389.0</b>	<b>2,656.5</b>	<b>2,370.7</b>	<b>194.5</b>
<b>YTD over Last YTD</b>	<b>216%</b>	<b>211%</b>	<b>221%</b>	<b>156%</b>

Source: Mercantile based on weekly CGC data

- Regarding the export outlook for the 2023/2024 crop year, conditions in North Africa have not improved, so that the outlook for Canadian durum exports into those regions remains good for the coming year as well:



- Old crop durum bids were slightly higher at \$12.00/bu. We are sold out of old crop and would wait before selling additional new crop.**

**U.S. Wheat:**

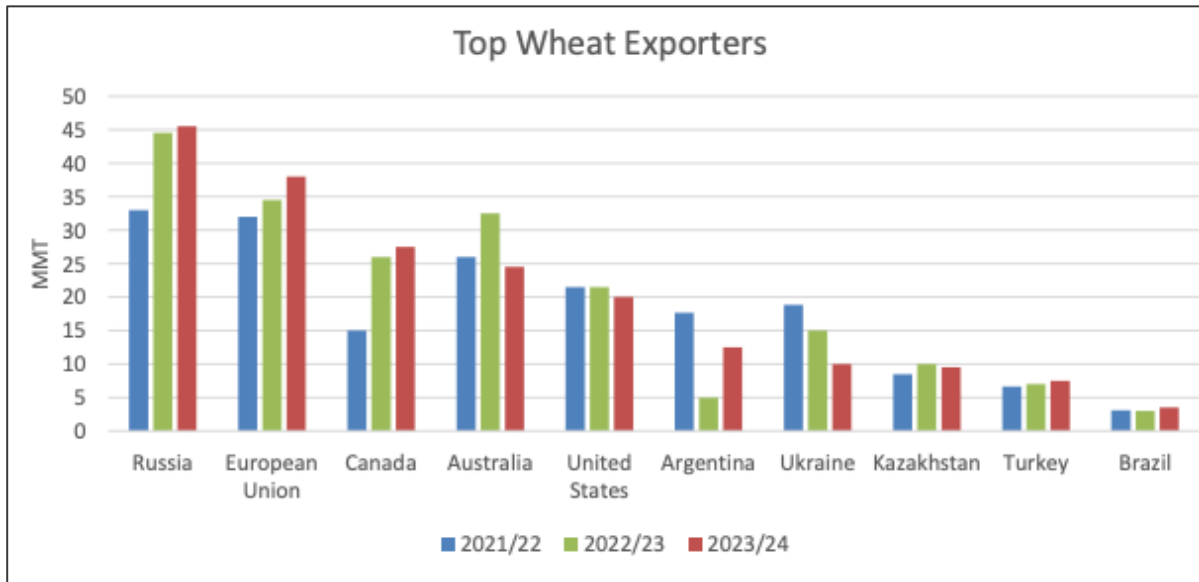
- U.S. weekly export sales of 26,300 mt for 2022/2023 were a marketing- year low- were down 88 per cent from the previous week and 86 per cent from the prior four-week average. (The MY ends May 31). New crop wheat sales were 334k mt, which was above estimates. This set the forward book at one point six million mt compared to two point four million mt at this time last year.
- Well, the long-awaited May USDA report on 2023/2024 **U.S. wheat** showed reduced supplies and exports, a higher U.S. domestic use and small ending stocks than for 2022/2023. Supplies are shown smaller due to a smaller carry-in and an only slightly higher production.

**U.S. 2023/2024 Wheat Production Outlook**

	2021/22	2022/23 Est.	2023/24 Proj.	2023/24 Proj.
			Apr	May
			<i>Million Acres</i>	
Area Planted	46.7	45.7	NA	49.9 *
Area Harvested	37.1	35.5	NA	37.1 *
			<i>Bushels</i>	
Yield per Harvested Acre	44.3	46.5	NA	44.7 *
			<i>Million Bushels</i>	
Beginning Stocks	845	698	NA	598
Production	1,646	1,650	NA	1,659
Imports	95	125	NA	135
Supply, Total	2,587	2,473	NA	2,393
Food	972	975	NA	977
Seed	58	70	NA	65
Feed and Residual	59	55	NA	70
Domestic, Total	1,088	1,100	NA	1,112
Exports	800	775	NA	725
Use, Total	1,888	1,875	NA	1,837
Ending Stocks	698	598	NA	556
Avg. Farm Price (\$/bu) 2/	7.63	8.85	NA	8.00

Source: USDA-NASS

- Following the USDA-WASDE reports, Kansas wheat futures surged 50 cents when the report showed only a 514 million bu production. Kansas closed up 35.4 cents for July and up 33 cents for September. The other nearby wheat markets were up by double digits to close 7-8 cents. U.S. old crop cash prices were a nickel weaker to \$8.85, while the new crop price was listed at \$8/bu.
- The WASDE report on the **global wheat** picture showed the carryout one point two million mt higher for old crop, and about one million mt above the trade average guess. USDA is sticking with their 2022 crop Russian wheat crop estimate at 92 million mt, which has been deemed too low by most private estimates. USDA also did not change the EU carry-in numbers, which are also considered too low by many market participants. In Mercantile's view, the USDA estimates are underestimating ending stocks for the EU and Russia.
- The initial production outlook for new crop wheat was at 789.8 million mt, up about one million mt year-over-year. The Ukrainian production is projected to drop from 21 million mt to 16.5 million mt in 2023/2024 (-21 per cent).
- Global trade is projected down slightly from last year's record to 212.5 million mt with some shifts among major suppliers. *Mercantile notes that Canada is projected to have greater exports based on a larger crop and reduced competition in Asia from Australia. Canadian exports are expected to reach 27.5 million mt.*



Source: USDA-FAS

- Global ending stocks were calculated at 264.3 million mt, a two million mt tighter year-over-year but bigger than the average trade guess of 260 million mt. - *However, if we correct for the bigger combined EU-Russian ending stocks, this will have a significant impact on the market into the winter by creating a higher supply pressure during the summer/ fall by those exporters.*
- Regarding wheat consumption, 2023/2024 global non-China consumption was lowered by four million mt.
- However, given the USDA numbers, we note that U.S. stocks were shown to fall to a 16-year low, global stocks fall to an eight-year low, and major exporters' stocks/use ratio falls to a record low.
- **Weather will be critical for the next 4-6 months with no room for any problems in the production regions of major exporters.**
- U.S. HRS for June 2023 was valued at \$353.40/mt FOB PNW (*up \$9.10/mt from last week*), FOB Gulf HRW 11/12.5 pro is valued at \$368.00/mt (*up \$15.90/mt from last week*).

**Australian Wheat:**

- USDA pegged the 2023/2024 Australian wheat production at 29 million mt, compared to 39 million mt in 2022/2023.
- Australian wheat exports are projected down eight million mt to 24.5 million mt. Australia exports mostly to East and Southeast Asia.
- FOB values in Australia: June 2023 AWP, WA is valued at \$290.00/mt (*up \$5.00 from last week*).

**Argentine Wheat:**

- USDA pegged the 2023/2024 Argentine wheat production at 19.5 million mt, up six point nine million mt compared to 12.55 million mt in '22/23.
- Argentine wheat exports are forecast to rebound to 12.5 million mt on a larger crop after its drought-reduced crop last year. Argentina is expected to gain market share in some of Australia's traditional wheat markets including Indonesia, Thailand, and Vietnam.
- June Argentine wheat is quoted at US\$330/mt FOB.

**EU Wheat:**



- USDA pegged the 2023/2024 EU-27 wheat production at 139 million mt, up four point five million mt compared to 134.3 million mt in '22/23. Production is anticipated to increase in France and Romania.
- 2022/2023 EU and Russian exports were lowered by 500k mt.
- EU wheat ending stocks were raised to 16.3 million mt, Russian stocks were raised to 17.64 million mt, so combined current crop stocks rise seven million mt.
- For 2023/2024, the EU is projected to remain the second-largest exporter. Stocks, which expanded with imports from Ukraine in 2022/2023, are expected to fall as exports rise to 38 million mt. The EU is forecast to gain global market share with reduced exports from Ukraine.
- EU FOB prices: June 2023 French 11.5 pro wheat closed at \$259.90/mt (*down \$11.00/mt from last week*); June 2023 German 12.5 pro wheat closed at \$264.40 (*down \$9.80/mt from last week*); June 2023 Baltic 14.0 pro wheat closed at \$277.70/mt (*down \$9.90/mt from last week*).

#### **Black Sea Wheat:**

- USDA pegged Russia's 2023/2024 wheat production at 81.5 million mt, down 10.5 million mt compared to 92 million mt in 2022/2023. [The 92 million mt is considered low by the trade].
- Russia is forecast to be the largest exporter for the fourth year in a row. Production is forecast lower, partially offset by larger beginning stocks. With reduced supplies, both FSI and feed and residual use categories are anticipated lower. Exports are forecast to increase by one million mt to 45.5 million mt, leading to a reduction in ending stocks. Africa and the Middle East are expected to remain Russia's largest markets.
- Estimated FOB prices for June 12.5 protein Russian wheat: US\$260/mt (down \$15.00/mt from last week).

#### ➤ **Significant purchases/trades:**

- The only significant trade was to **Algeria**, which bought about 500,000 mt of Russian/Black Sea wheat at around \$250.00/mt FOB.
- U.S. export sales were just 26k mt old crop but an improved 334k mt new crop wheat. The current season total of 695 million bu is 80 million bu below the USDA's projection with just three weeks remaining.

#### ➤ **Wheat Market Outlook:**

##### **Significant events over the past week:**

- **May USDA-WASDE reports:** For the **U.S.**, the numbers for the 2023/2024 The U.S. crop were outright bullish with HRW at 514 million bu (below even last year's drought reduced crop) and Kansas at just 191 million bu. U.S. wheat stocks fall to a 16-year low.
- On the **global** scene, The USDA produced a production estimate for Russia at 81.5 million mt, which is considered low by the trade. The Argentine crop was based on an 18 per cent increase in acreage, which -given current conditions- seem very courageous. The 2023/2024 global non-China consumption was lowered by four million mt. Nevertheless, world stocks fall to an eight-year low, and major exporters' stocks/use ratio falls to a record low.
- The StatsCan stocks report on May 9 showed **wheat stocks excl. durum** at 11.5 million mt, which is 23 per cent or two point one million mt higher than wheat stocks held at the same time last year. Wheat (excl. durum) stocks are still lower than in the pre-drought years.
- **Canadian durum stocks** as of March 31, 2023, at one point eight mt, which is five per cent or 91m mt *lower* than durum stocks held at the same time last year. This is also significantly lower than March 31 stocks in previous years.

**Outlook:**

Mercantile does not expect world buyers to panic and buy wheat. Alternatively, they expect futures to trade in a narrow range while Russia chases more cash outlets at discount to U.S. futures. Mercantile does not expect the funds to buy in their wheat short while cash wheat is at such a discount to futures.

In Mercantile's view, the May WASDE estimate figures are too early to take any major positions. Weather continues to be the key element to watch.

**iii) Primary Elevator Price Tables and Grade Spreads**

**Table 1: Canadian Primary Elevator Bids, in Canadian Dollars per Bu and per MILLION MT**

					Date:	15-05-2023
NW Sask	Spot		NW Sask	Deferred		
	(bu.)	(mt)		July '23 (bu.)	July '23 (mt)	
1 CWRS 13.5	\$10.67	\$392.06	1 CWRS 13.5	\$10.54	\$387.28	
1 CWAD 13.0	\$11.08	\$407.12	1 CWAD 13.0	\$11.02	\$404.92	
1 CPSR 11.5	\$10.50	\$385.81	1 CPSR 11.5	\$10.42	\$382.87	
<b>SW Sask</b>			<b>SW Sask</b>			
1 CWRS 13.5	\$10.50	\$385.81	1 CWRS 13.5	\$10.40	\$382.14	
1 CWAD 13.0	\$10.97	\$403.08	1 CWAD 13.0	\$10.93	\$401.61	
1 CPSR 11.5	\$10.39	\$381.77	1 CPSR 11.5	\$10.26	\$376.99	
<b>NE Sask</b>			<b>NE Sask</b>			
1 CWRS 13.5	\$10.48	\$385.08	1 CWRS 13.5	\$10.32	\$379.20	
1 CWAD 13.0	\$10.82	\$397.57	1 CWAD 13.0	\$10.71	\$393.53	
1 CPSR 11.5	n/a		1 CPSR 11.5	n/a		
<b>SE Sask</b>			<b>SE Sask</b>			
1 CWRS 13.5	\$10.38	\$381.40	1 CWRS 13.5	\$10.29	\$378.10	
1 CWAD 13.0	\$10.85	\$398.67	1 CWAD 13.0	\$10.75	\$395.00	
1 CPSR 11.5	\$10.16	\$373.32	1 CPSR 11.5	\$10.06	\$369.64	

Data source: PDQ, May 15/23

**Table 2: Grade Spreads, in Canadian Dollars per Bu and per MILLION MT**

<b>Avg. Grade Spread/ Pro Discounts</b>	<b>Cdn\$/bu.</b>	<b>Cdn.\$/mt</b>
<b>1 CWRS 14.0</b>	0.05	1.89
<b>1 CWRS 13.5</b>	Base Grade	Base Grade
<b>2 CWRS 13.5</b>	(0.10)	-3.67
<b>1 CWRS 12.5</b>	(0.30)	-11.02
<b>1 CWAD 13.0</b>	Base Grade	Base Grade
<b>1 CWAD 13.5</b>	0.00	0.00
<b>2 CWAD 13.0</b>	(0.10)	-3.67
<b>2 CWAD 12.5</b>	(0.15)	-5.51

Data source: PDQ, May 15/23

#### **iv) FOB Wheat Prices and Export Basis Calculation**

##### Background and Rationale:

Reporting FOB prices at port position and primary elevator prices allows the reader to gain an understanding of both local and international wheat prices and to understand the relationship between the two, as measured by the export basis. Export basis can be defined as FOB port position prices minus the primary elevator prices at any given prairie delivery location and is therefore reflective of transportation costs plus any premiums being captured by terminal grain elevator companies or the railway companies, at any given time.

In general, a widening basis is indicative of decreasing system performance in terms of either reduced port capacity or rail service, or both. A narrowing basis is indicative of increased available port capacity and/or better ability of the railways to provide ample service to grain shippers. In this regard, tracking these prices over time has value both in terms of producers being able to time the selling of their grain but also in terms of evaluating and setting policy related to various transportation and capacity issues.

Gray (2015) has calculated a normal basis to be in the range of C\$72/million mt. During the 2013/2014 crop year the export basis for wheat widened to approximately C\$250/million mt, which indicated an inability of the grain handling and transportation system to adequately handle the record crop produced that year. This occurrence has highlighted the need to improve the level of rail service and take measures to expand port capacity where possible. It has also

underscored the need for better price transparency and market information within the grain sector.

### Assumptions, Definitions, and Methodology

The following background information should assist in understanding and interpreting international market signals and to relate them to the 'local' Saskatchewan wheat market:

- The price information generated for the weekly report is designed to show farmers at what price levels several wheat classes are trading at local primary elevators (Table 1) and in nearby international markets (Table 3). To express the Export Basis<sup>1</sup> (see *Export Basis* in Table 3) defined as Canadian FOB Prices minus primary elevator bids, the FOB prices are translated into Canadian dollars from US dollars and compared to current actual primary elevator Street prices at Rosetown, Saskatchewan (see *Street Prices* in Table 3). Rosetown is used as a proxy for all primary elevators in the basis calculation. The actual handling and transportation costs from the West Coast to delivered elevator (Rosetown area) range from ~C\$58.00-C\$74.72/million mt, depending on number of cars moved and elevator used.
- Approximate relationship between U.S. wheat classes and Canadian wheat classes:
  - DNS 14 per cent in the Pacific Northwest (PNW) ≈ 1 CWRS 13.5 per cent in Vancouver
  - HRS in the Pacific Northwest (PNW) ≈ 2 CWRS 13.0 per cent in Vancouver
  - HRW in the Pacific Northwest (PNW) ≈ 3 CWRS in Vancouver
  - SW (lowest price wheat) ≈ CPS red (mostly fed domestically)
  - HAD (Lakes) ≈ CWAD (Thunder Bay/ Lawrence)
    - Abbreviations: DNS (Dark Northern Spring Wheat); HRS (Hard Red Spring Wheat); HRW (Hard Red Winter Wheat); SW (Soft Wheat); HAD (Hard Amber Durum Wheat); CWRS (Canadian Western Red Spring Wheat); CPS (Canada Prairie Spring Wheat); CWAD (Canadian Western Amber Durum Wheat)
- Hard wheat price calculations:  
Exporters in Western Canada generally derive their primary elevator wheat prices from HRS values at the West Coast (Pacific Northwest - PNW). Similarly, HRW values are used for lower grade (3) CWRS.
  - West Coast HRS and HRW values essentially dominate the international hard wheat trade and determine its basic value.
  - If premiums are paid for 1 CWRS 13.5, elevator companies are often able to retain the premium.
- Durum wheat price calculations:

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<sup>1</sup> Gray, R.S. (2015). The Economic Impacts of Elevated Export Basis Levels on Western Canadian Grain Producers 2012/13, 2013/14 and 2014/15.

“The difference between FOB Vancouver prices and the Saskatchewan elevator cash bids to producers is referred to as export basis: Basis can refer to the difference between any two prices. As the largest volume port, Vancouver FOB, minus the elevator bid prices representative measure of the “export” basis for grains in Western Canada.”

The primary export route for Canadian durum wheat is still through Thunder Bay, not the West Coast of Canada.

- Nevertheless, the Pacific Coast has increased in importance for durum over time with 38 per cent of total export volume crop year to date.
- Italy is the single biggest buyer of Canadian durum wheat with 27 per cent of total Canadian durum exports YTD (East Coast shipments).

➤ Optional origin grain sales:

Most major international grain companies sell 'optional origin' wheat to their customers and often cover their sales 'at best' closer to the shipment position. The Canadian grain system is not conducive to servicing optional origin sales because the volume of wheat kept in storage in port today is much smaller than prior to deregulation of the Canadian wheat market.

**Table 3: Relevant FOB Prices and calculated Basis, U.S. & Canadian Dollars per MT**

Relevant FOB Prices and Export Basis				15-05-2023
Type of Wheat	FOB Prices CDA <sup>1</sup> (calculated)		Street Prices	Export Basis <sup>2</sup>
	West Coast (Cdn./mt\$)	Great Lakes (Cdn.\$/mt)	Rosetown (Cdn.\$/mt)	Basis: West Coast-Centr. SK (Cdn\$/mt)
DNS 14.0	\$479.44	\$504.65		
HRS	\$472.03			
HRW 11.5	\$491.80			
SWW 12.0	\$370.21			
1 CWRS 13.5 <sup>3</sup>	\$479.44		\$398.67	\$80.77
2 CWRS 13.0 <sup>3</sup>	\$472.03		\$387.65	\$84.38
3 CWRS <sup>3</sup>	\$491.80		\$378.46	\$113.34
CPS <sup>3</sup>	\$363.29		\$388.75	-\$25.46
1 CWAD <sup>4</sup>		\$497.73	\$417.41	\$80.32
<b>Competing wheat:</b>				
	US\$/mt			
Russia 12.5 (Black Sea, 25k mt)	\$260.00	June '23		
French 11.5 (Rouen)	\$259.90	June '23		
APW 10.5 (W Coast)	\$290.00	June '23		
Argentine 12.0	\$330.00	June '23		

<sup>1</sup> FOB Prices CDA = FOB US\$ converted into Canadian Currency

<sup>2</sup> Export Basis = FOB Prices CDA minus Cdn. Street Price

<sup>3</sup> DNS 14% ≈ 1 CRWS 13.5%; HRS ≈ 2 CWRS 13.0%; HRW ≈ 3CWRS; SWW ≈ CPS

<sup>4</sup> Values derived to Lakehead FOB