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Report Highlights:

In marketing year (MY) 2022/23, production of grains is forecast to increase 30 percent year-over-year on an increase in area planted to spring wheat, durum, and oats, and on the assumption of improved soil moisture conditions resulting in higher yields. However, dry conditions persist in Alberta and Western Saskatchewan and many farmers are behind in their planting schedule, due to unfavorable planting conditions. FAS/Ottawa's total production forecast may need to be adjusted in the absence of significant spring rain in major wheat-growing areas in the prairies. The MY 2021/22 wheat ending stocks-to-use ratio is forecast to reach an 83-year low. Corn import volumes from the United States are up nearly 330 percent marketing year-to-date (August 2021 to February 2022) due to reduced domestic supplies of feed caused by drought. Keywords: wheat, corn, barley, oats, drought, feed, climate change, carbon markets

Executive Summary

This report covers the supply and disposition of Canadian wheat, barley, oats, and corn in marketing years (MY) 2022/2023 and 2021/2022. U.S. Department of Agriculture marketing years run from August to July for wheat, oats, and barley, and from September to August for corn.

Forecasts in this report do not fully reflect trade disruptions at Black Sea ports, and various embargoes and export restrictions put on crops and fertilizers, but are based on the assumption of limited wheat and corn harvesting in Ukraine this year due to Russia's invasion of Ukraine.

Marketing Year 2022/2023

Production of wheat, corn, barley, and oats is forecast to increase 30 percent to 58 million metric tons (MT) in MY 2022/23 over MY 2021/22, on an increase in area planted to spring wheat, durum, and oats, and on improved wheat, oat, and barley yields. However, this production forecast could change significantly once the first planting intentions survey is published. The most significant downside risk to this outlook is the persistent drought conditions in Alberta and Western Saskatchewan, which are primary cereal-growing areas in Canada.

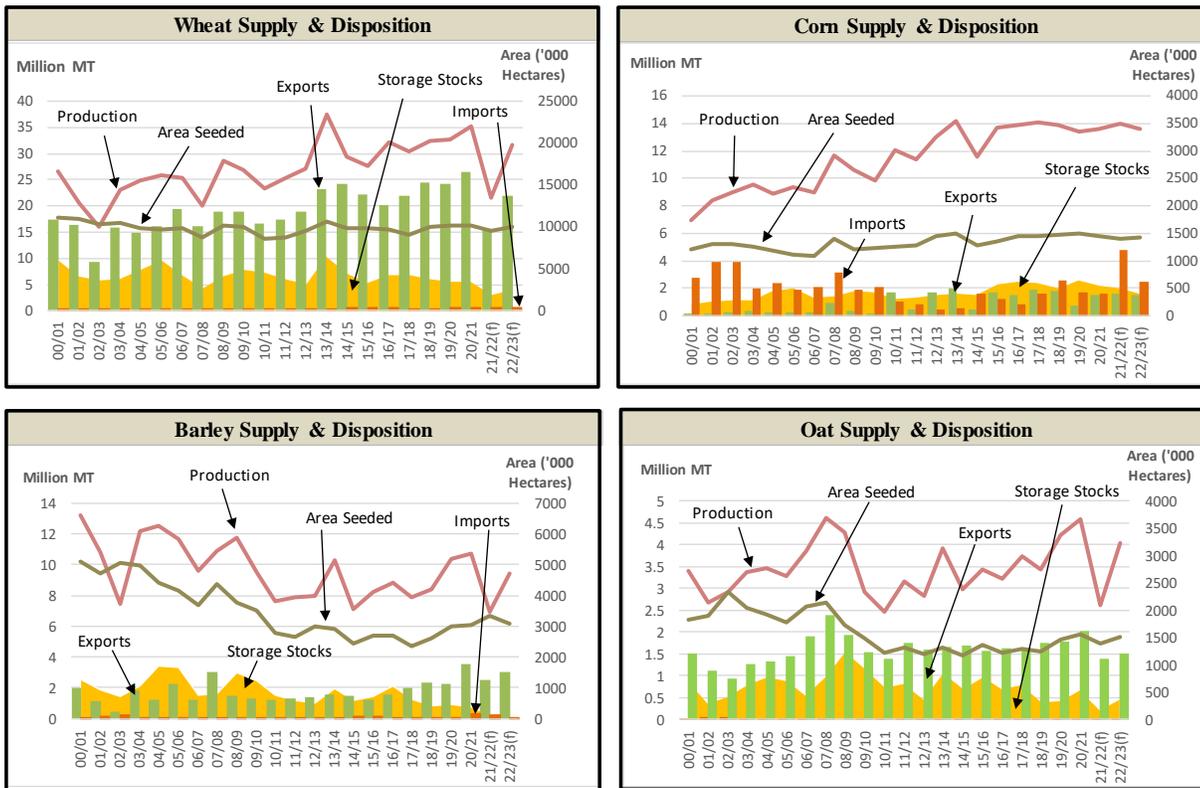
Sources indicate planting has yet to begin as of April 22 and will generally be at least one to two weeks behind due to cold temperatures and/or precipitation in the prairies, and excess moisture in Ontario and Quebec.

Beginning stocks of wheat, oats, and barley are forecast to fall to multi-year lows due to the significant reduction in yields and production in the MY 2021/22 drought year. Beginning stocks of corn are projected to fall to their lowest level since 2014. This is primarily due to high domestic demand for feed, after severe drought limited feeding options, concurrent with multi-year monthly highs of number of cattle on feed in Alberta and Saskatchewan.

In MY 2022/23, exports of wheat, barley, and oats are forecast to increase 32 percent over MY 2021/22 on the assumption that improved growing conditions will raise Canada's level of exportable wheat supplies by more than six million MT. Ending stocks are forecast to remain well below historic levels due to strong global demand and tight global and domestic supplies.

Imports of corn, barley, wheat, and oats are expected to decline more than 40 percent on reduced demand for imported feed corn and feed barley, based on the assumption that Canada will produce a higher level of domestic feed supplies than in MY 2021/22. However, if drought conditions fail to improve, high import levels may be sustained.

Figure 1: Supply and Disposition of Grains in Canada



Source: Created by FAS/Ottawa using data from AAFC; Trade Data Monitor, LLC; and, USDA PSD

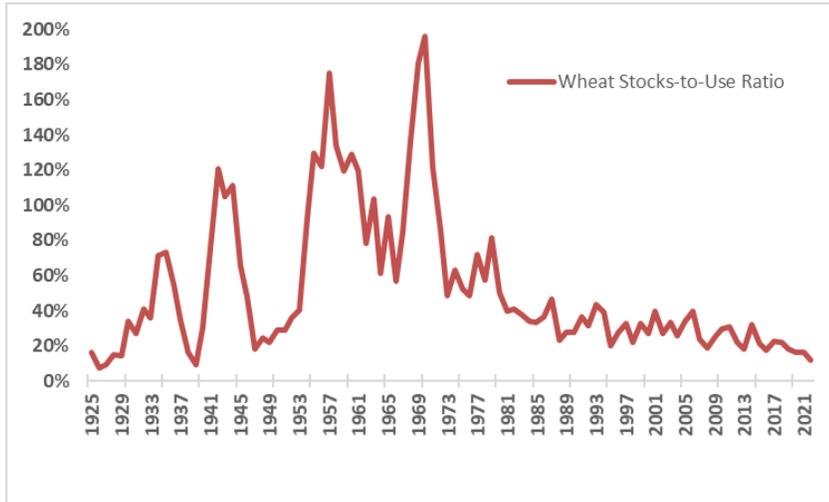
Marketing Year 2021/2022

Grain markets continue to face a period of uncertainty and volatility. COVID-19 had resulted in transportation labor shortages and high transportation costs. Markets are now challenged by tight world grain supplies due to the widespread drought in North American grain-producing areas in the summer of 2021, lower stocks in major exporting countries, reduced supply from the Black Sea, and export restrictions and embargoes impacting the trade and prices of grain and fertilizer.

In MY 2021/22, production of wheat, corn, barley, and oats fell nearly 30 percent, mainly due to the negative impact of the prairie drought on cereal yields. However, record winter wheat yields resulted in winter wheat production exceeding durum production (14 percent of all wheat was winter wheat versus 12 percent durum) for the first time in at least 22 years. Winter wheat is primarily grown in Ontario, where soil moisture levels were (and continue to be) superior to the spring wheat and durum growing areas of the prairies.

The ending stocks-to-use ratio for total wheat is forecast to fall to 12 percent, a level not seen since 1938. Low points in the stocks-to-use ratio are generally associated with annual price spikes. Overall cash prices for wheat and oats have been trending up since September 2020 on strong global demand and, particularly in the past 18 months, smaller exportable supplies. Spring wheat cash prices rose 130 percent in the 18 months preceding April 1, 2021, while durum prices rose 140 percent.

Figure 2: Wheat Ending Stocks-To-Use Ratio



Source: Created by FAS/Ottawa using Statistics Canada Archives data for years 1924-1959, and USDA PSD data for years 1960-2021

Corn imports surged to nearly 3.0 million MT (after removing popping corn volume) year-to-date (YTD) February, up from 0.7 million MT during the same period in MY 2020/21. Feedlots are sourcing an increased amount of corn due to a lack of available domestic supplies of feed.

WHEAT

Table 1: Production, Supply, and Distribution of Wheat

WHEAT	2020/2021		2021/2022		2022/2023	
Market Begin Year	Aug-20		Aug-21		Aug-22	
	USDA Official	Post	USDA Official	Post	USDA Official	Post
Area Harvested (1000 HA)	10,018	10,018	9,247	9,247		9,870
Beginning Stocks (1000 MT)	5,499	5,499	5,666	5,666		3,000
Production (1000 MT)	35,183	35,183	21,652	21,652		31,580
MY Imports (1000 MT)	546	544	600	550		500
TY Imports (1000 MT)	549	543	600	550		500
TY Imp. from U.S. (1000 MT)	319	350				
Total Supply (1000 MT)	41,228	41,226	27,918	27,868		35,080
MY Exports (1000 MT)	26,429	26,400	15,500	15,600		21,900
TY Exports (1000 MT)	27,723	27,694	15,500	15,600		21,900
Feed and Residual (1000 MT)	4,183	4,245	4,500	4,168		4,060
FSI Consumption (1000 MT)	4,950	4,915	5,000	5,100		5,120
Total Consumption (1000 MT)	9,133	9,160	9,500	9,268		9,180
Ending Stocks (1000 MT)	5,666	5,666	2,918	3,000		4,000
Total Distribution (1000 MT)	41,228	41,226	27,918	27,868		35,080
Yield (MT/HA)	3.51	3.51	2.34	2.34		3.20

Wheat Production – MY 2022/2023

Provincial government crop reports have yet to be published this year, but conversations with farmers suggest that wheat planting will be delayed by one to two weeks across the country, for region-specific reasons outlined below. Seeding can take two to four weeks, depending on the size of the farm. Late planting does not necessarily deteriorate crop quality, but it does increase chances that an early frost reduces crop quality near harvest time.

Sources indicated that planting is well underway in the southern-most growing areas of Alberta during the second week of April. The rest of the province, as far south as Brooks, is too cold to plant, as of April 22. Wheat planting typically begins mid-April (in the southern regions) to first week of May.

Planting has yet to begin in Saskatchewan as of April 22, due to cold temperatures and, in some areas, snow. Saskatchewan farmers told FAS/Ottawa that they expect to begin planting the week of May 9. As of late April, precipitation has so far missed the very driest areas of Saskatchewan and Alberta, including most of the spring wheat and durum producing areas, which remain dry and too cold for planting.

Farmers in the Winnipeg area of Manitoba, and further west near the Saskatchewan border, stated that they do not expect to be seeding before May 15 due to significant snow, and cold temperatures. Heavy rain is in the forecast for the last week of April.

Production of wheat is forecast to increase in MY 2022/23 on the projected increase in area planted to spring wheat, and durum, and on the assumption of improved yields. Planting decisions will be guided by canola disease pressures, dry planting conditions, high input prices, and high wheat prices, all of which favor increased wheat planting relative alternative crops such as canola.

Some evidence suggests that growth in wheat area may be muted, despite the sustained high wheat prices. Several farmers stated that they will not plant more wheat, no matter the price, because they already have a long-term rotation plan and it excludes wheat, which in recent years has earned a lower profit than canola and many pulses and specialty crops. Secondly, though wheat is a low input crop relative to crops such as canola and corn, many farmers purchased their inputs months ago, before the fallout of Russia's invasion of Ukraine sent fertilizer prices higher; therefore, the high input prices of wheat alternatives are not necessarily a deterrent.

While winter wheat was the second most prevalent wheat type produced in Canada in MY 2021/22 (after spring wheat), FAS/Ottawa's forecast predicts that a return to trendline yields will mean that durum wheat will again become the second-most widely grown wheat in Canada, reducing winter wheat to third place in MY 2022/23.

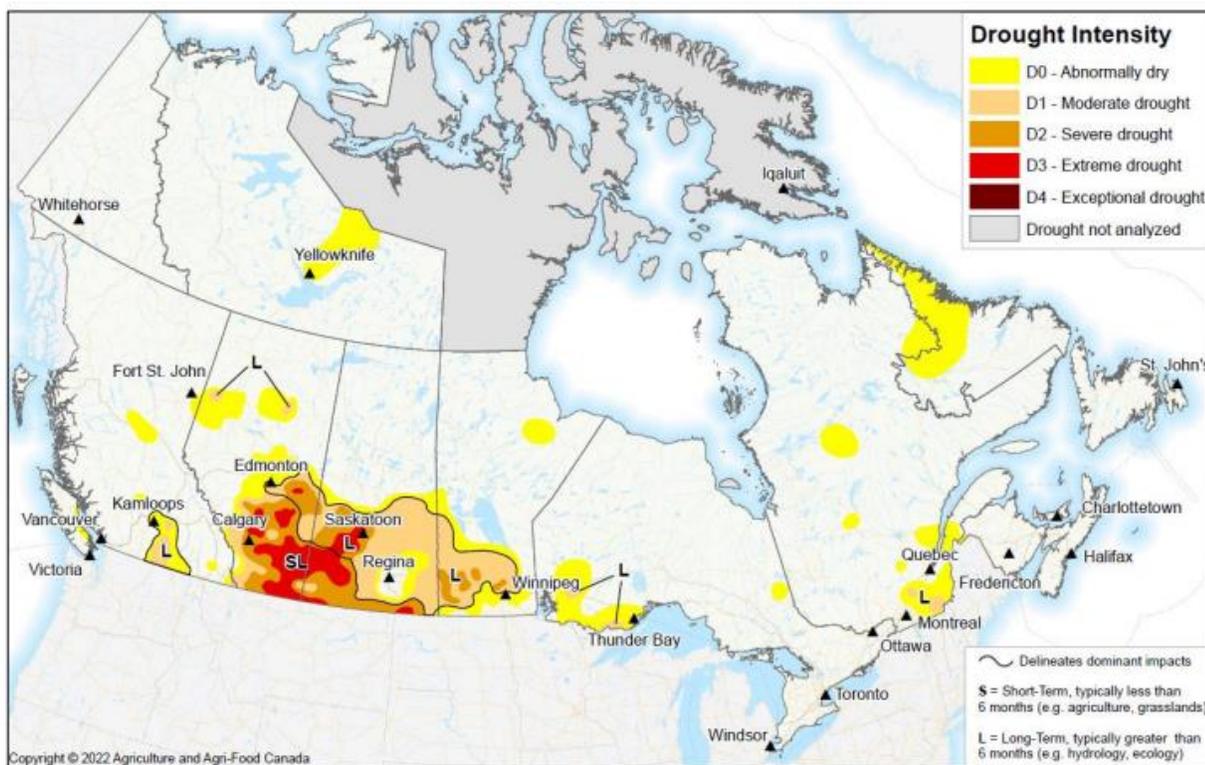
Durum area as a share of total wheat area has been fairly stable over the past twenty years, ranging between 15 percent and 26 percent of total wheat area, depending on prices. Durum is primarily grown in southern Saskatchewan, where soil and climate are typically most suitable.

Figure 3: Durum and Spring/Wheat Growing Areas



Source: [Cereals Canada](https://www.cerealscanada.ca/)

Figure 4: Canadian Drought Conditions as of March 31, 2022



Source: Agriculture and Agri-Food Canada [Drought Monitor](#)

Wheat Production – MY 2021/2022

Spring wheat production fell 38 percent from MY 2020/21 to 16 million MT in MY 2021/22 on a nine percent reduction in area planted and lower yields. Spring wheat is the most commonly grown variety in Canada, representing 75 percent of wheat produced over the past five years.

Durum production fell 60 percent to 2.7 million MT, despite a slight increase in area planted, due to lower yields. Durum wheat is historically the second most common wheat variety grown in Canada, constituting 16 percent of total wheat production over the past five years.

Winter wheat production increased eight percent to 3.0 million MT, owing to an eight percent increase in area planted and record yields in many growing regions of Ontario. Winter wheat production exceeded durum production for the first time in at least twenty-two years. Winter wheat is primarily grown in Ontario, where soil moisture levels were superior to levels found in the drier prairie regions. In MY 2021/22 average yields of spring wheat and durum were reduced to rates not seen since the prairie drought of 2007, due to severe drought in vast wheat-growing areas of the prairies. Parts of Alberta and Western Saskatchewan have been running a moisture deficit for more than a year.

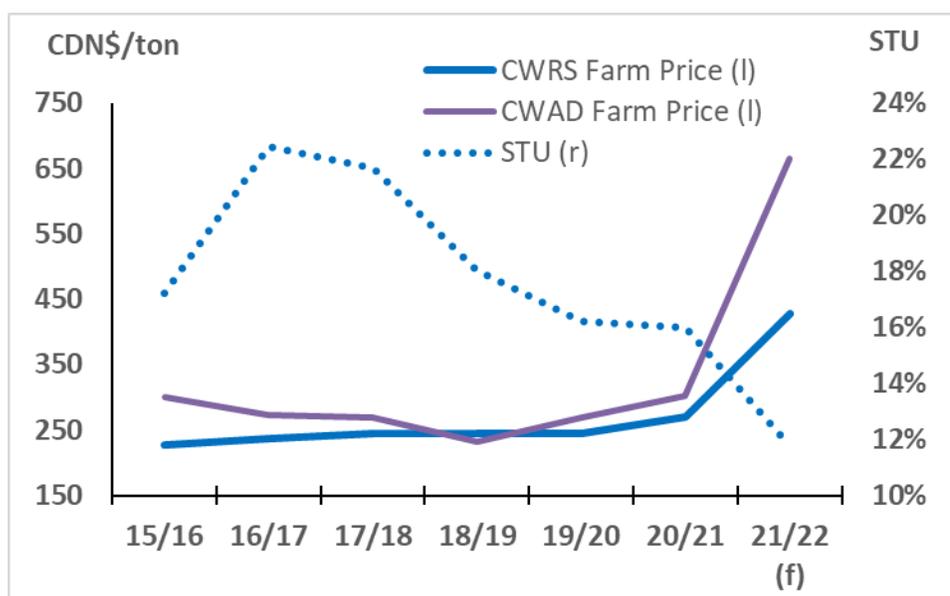
[Average protein levels](#) of No. 1 Canadian Western Red Spring (CWRS) grown in Western Canada increased significantly to 15.2 percent (measured on a 13.5 percent moisture basis), up from 13.2 percent protein in 2020 and well above the five-year average of 13.8 percent.

The protein content of Canada Prairie Spring Red (CPSR) increased from 12.2 percent in 2020 to 13.7 percent in 2021.

Canada’s high-protein wheat generally sells for a higher price than its lower-protein wheat, and the two have different uses, as discussed in the next section of this report.

The ending stocks-to-use ratio for total wheat (including durum) is forecast to fall to 12 percent from 16 percent a year ago. Low points in the stocks-to-use ratio are generally associated with annual price spikes, as is evident in Canada. Overall cash prices for grain started to accelerate upwards in September 2020, and by June 2021 were on a sharp uptrend that continues as of the writing of this report.

Figure 5: Annual Canadian Western Red Spring (13.5% protein) and Canadian Western Amber Durum (13.0 % protein) Farm Prices Versus Wheat Stocks-To-Use (STU) Ratio

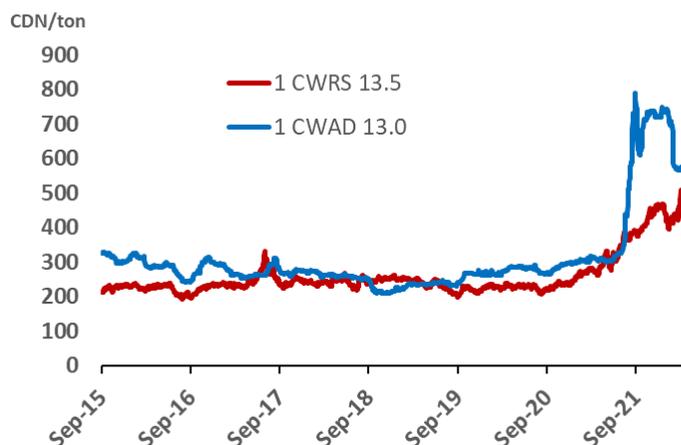


Source: Created by FAS/Ottawa using data from Statistics Canada and PDQ Price and Data Quotes

Note: MY 2021/22 prices are an average of August to April prices only (the most recent data available at time of writing) and therefore exclude prices from the final three months of the marketing year.

Over 18 months, cash prices for No. 1 CWRS (13.5 protein) rose nearly 130 percent to CAD \$469 per ton on April 1, 2022, while No. 1 CWAD (13.0 protein) prices rose 140 percent to CAD \$576 per ton over the same period, after peaking at CAD \$790 in August, as illustrated in the daily prices below.

Figure 6: Daily Cash Prices of CWRS and CWAD



Source: Created by FAS/Ottawa using data from PDQ Prices and Quotes

Wheat Exports – MY 2022/2023

Exports are forecast to increase on increased domestic supplies. Further, the distribution of Canada’s wheat will likely change, as a result of Russia’s invasion of Ukraine, if Ukraine is unable to harvest its winter wheat crop.

Table 2: Top Importers of Ukraine Wheat, 1,000 MT, MY 2021/22

Importing Country	Imports from World	Imports from Ukraine	Imports from Canada	Share from Ukraine	Share from Canada
Indonesia	10,450	2,700	2,311	26%	22%
Egypt	12,149	2,405	4	20%	0%
Pakistan	3,617	1,456	0	40%	0%
Bangladesh	7,200	1,127	1,108	16%	15%
Morocco	5,444	1,009	1,078	19%	20%
Turkey	8,081	810	170	10%	2%
Tunisia	1,771	653	287	37%	16%
Lebanon	1,210	611	0	51%	0%
Libya	1,455	565	45	39%	3%

Source: Created by FAS/USDA using data from USDA PSD, Trade Data Monitor, LLC

Countries such as Indonesia, Bangladesh, Morocco, and Tunisia typically depend on both Ukraine and Canada (and other countries) for their wheat supplies. From Canada, these countries import Canadian

Western Red Spring (Bangladesh, Indonesia, Morocco) and Canadian durum (Indonesia, Morocco, Egypt, Turkey, Tunisia), while they import primarily winter wheat from Ukraine.

Some industry contacts told FAS/Ottawa that they foresee Canada becoming a market of last resort for price-conscious countries that tend to blend Canada’s high-protein wheat with lower-protein, lower-cost wheat, such as Ukrainian winter wheat. Price conscious consumers use Canada’s spring wheat to produce high-volume bread by blending lower-cost wheat with 75 percent CWRS, for example, while an alkaline noodle requires less CWRS content.¹ Consumers in price-conscious wheat-importing countries may substitute out products that use high-protein wheat blends, or substitute out wheat products altogether for other carbohydrates, such as rice.

Table 3: Cross-Comparison of Canadian Wheat with Competition

Country	Name	Abbr.	Protein class	Avg. protein (%) of exported crop	High volume bread	Med. Volume bread	Alkaline noodle	Non-alkaline noodle	Flat bread	Cakes & cookies
US	Hard Red Spring	HRS	High	13.6	x	x	x			
AUS	Australia Prime Hard	APH	High	13.3	x	x	x			
CAN	Canada Western Red Spring	CWRS	High	13.3	x	x	x			
US	Hard Red Winter	HRW	Medium	12	x	x	x		x	
CAN	Canada Prairie Spring Red	CPSR	Medium	11.8		x	x	x	x	
AUS	Australia Hard	AH	Medium	11.6		x	x	x	x	
CAN	Canada Western Red Winter	CWRW	Medium	11		x	x	x	x	
UKRAINE	Winter Wheat		Low	10.8			x	x	x	
RUSSIA	Winter Wheat		Low	10.8			x	x	x	x
AUS	Australia Premium White	APW	Low	10.6			x	x	x	x
US	Soft Red Winter	SRW	Low	9.9				x	x	x
AUS	Australia Standard White	ASW	Low	9.4				x	x	x
US	Soft White Wheat	SWH	Low	9.7				x	x	x

Sources: Cereals Canada, Russia’s Federal State Institution Centre of Grain Quality Assurance, with protein conversions calculated by FAS/Ottawa

Notes: Protein % based on 13.5% moisture basis. Green denotes a distinct preference in that end use

Canada’s winter wheat is most commonly sold in the Americas, but strong demand for mid-/low-protein wheat in the Middle East, North Africa, Sub Saharan Africa, and South Africa may lead to diversification of winter wheat exports to these regions in MY 2022/23.

¹ While protein levels are an important factor for millers and bakers, there are other important characteristics that impact the final product, such as water absorption and extensibility. For example, while U.S. DNS competes most closely with Canada’s CWRS and generally has similar protein levels, the latter is shown to have more extensibility.

Wheat Exports – MY 2021/2022

Table 4: Year-to-Date (August to February) Exports of Non-Durum Wheat ('000 MT)

Partner	08/2018 - 02/2019	08/2019 - 02/2020	08/2020 - 02/2021	08/2021 - 02/2022	08/2021 - 02/2022 % Share
World	11,334	9,213	11,934	7,213	100.0
Japan	906	1,146	952	996	13.8
United States	976	678	744	640	8.9
West Africa	658	671	823	635	8.8
Indonesia	1,392	1,138	1,312	599	8.3
China	1,362	460	1,783	529	7.3
Peru	666	577	1,061	503	7.0
Colombia	829	686	792	474	6.6
Ecuador	367	290	474	442	6.1
Bangladesh	586	552	743	403	5.6

Source: Created by FAS/Ottawa using data from Trade Data Monitor, LLC

YTD exports of non-durum wheat (excluding flour and products) are down 40 percent on reduced exportable supplies. Most notably, China reduced its purchases by 1.3 million MT YTD February over the same period in MY 2021/22, while Indonesia reduced purchases by 0.7 million MT.

Table 5: Year-to-Date (August to February) Exports of Durum Wheat ('000 MT)

Partner	08/2018 - 02/2019	08/2019 - 02/2020	08/2020 - 02/2021	08/2021 - 02/2022	08/2021 - 02/2022 % Share
World	2,024	2,608	3,219	1,518	100.0
Morocco	443	425	676	344	22.6
United States	507	257	144	250	16.5
Italy	217	551	979	223	14.7
Algeria	113	56	352	144	9.5
Nigeria	36	68	96	123	8.1
Belgium	31	54	126	100	6.6
Japan	102	87	99	92	6.1
Venezuela	0	21	33	58	3.8
Peru	62	67	90	47	3.1

Source: Created by FAS/Ottawa using data from Trade Data Monitor, LLC

Export volumes of durum wheat are down on reduced domestic supplies. Italy has reduced its purchases from this time last year, and Morocco has since become Canada's largest durum buyer.

In MY 2021/22, the volume of exports sold as No. 1 CWRS increased significantly. Data from the CGC data shows that No. 1 CWRS exports from licensed facilities² represent 27 percent of total Canadian wheat exports (including durum) from licensed facilities, up from ten percent a year ago. Export volumes were also up on absolute terms, increasing 57 percent over last year, despite total non-durum wheat exports from licensed facilities falling 40 percent from a year ago. However, the share of non-durum wheat sold by grade, rather than specification of non-grade factors, has more than doubled, which may also partly explain the increase in export volumes of No. 1 CWRS.

Currently, there are no publicly available details on the characteristics of wheat sold on specification. Shipments by speculation (SBS) are assessed for the same standard factors as any wheat but are not bound by grade-thresholds for grading factors. Most buyers of SBS put a maximum limit on certain parameters of interest like Total Foreign Material or Other Cereal Grains.

Table 6: Year-to-Date (August to February) Wheat Exports from Licensed Facilities by Class and Grade, in '000 MT

		2019-20	2020-21	2021-22
Wheat	No.1 CW RS	1,327.0	1,413.8	2,226.4
	No.2 CW RS	6,126.7	7,785.1	3,729.3
	No.3 CW RS	10.3	41.0	
	No.2 CPS	20.2		
	No.1 CW RW	47.1	32.0	29.9
	No.2 CE	147.3	553.5	265.2
	Other	282.3		
	BY SPECIFICATION	912.6	1,544.7	649.5
	Total	8,873.4	11,370.1	6,900.2
Amber Durum	No.1 CW AD	1,070.2	1,511.8	746.8
	No.2 CW AD	534.5	768.6	421.1
	No.3 CW AD	547.4	1,112.6	319.0
	No.4 CW AD	15.8	7.2	
	No.5 CW AD	148.5		
	Other	183.6		
	BY SPECIFICATION	220.9	13.5	
	Total	2,720.9	3,413.6	1,487.0

Source: Created by FAS/Ottawa using data from the Canadian Grain Commission

² Exports from licensed facilities does not equal total export volumes. Facilities may not be licensed for several reasons. See the Canadian Grain Commission's [explanation](#).

Wheat Imports – MY 2022/2023

Wheat imports are forecast to fall year-over-year on increased domestic supplies.

Wheat Imports – MY 2021/22

YTD MY 2021/22 total wheat imports have increased on a reduction of domestic supplies and, in particular, low supplies of feed wheat. Nearly one hundred percent of imports are from the United States.

Durum wheat imports, which come from the United States, are down 29 percent over this time a year ago. An increased share of Canadian production is forecast to remain in the country for domestic use, following a sluggish export pace of Canadian durum.

Table 7: Year-to-Date (August to February) Imports of Wheat ('000 MT)

Partner	08/2019 - 02/2020	08/2020 - 02/2021	08/2021 - 02/2022
World	190	47	124
United States	187	46	124

Table 8: Year-to-Date (Aug to Feb) Imports of Wheat Products & Flour, Uncooked Pasta, Other Pasta, Couscous, in Grain Equivalent ('000 MT)

Partner	08/2019 - 02/2020	08/2020 - 02/2021	08/2021 - 02/2022	08/2021 - 02/2022 % Share
World	227	244	209	100.0
United States	130	122	120	57.2
China	24	30	24	11.4
Italy	26	32	23	11.1
Turkey	10	14	10	4.6
India	12	18	8	4.0

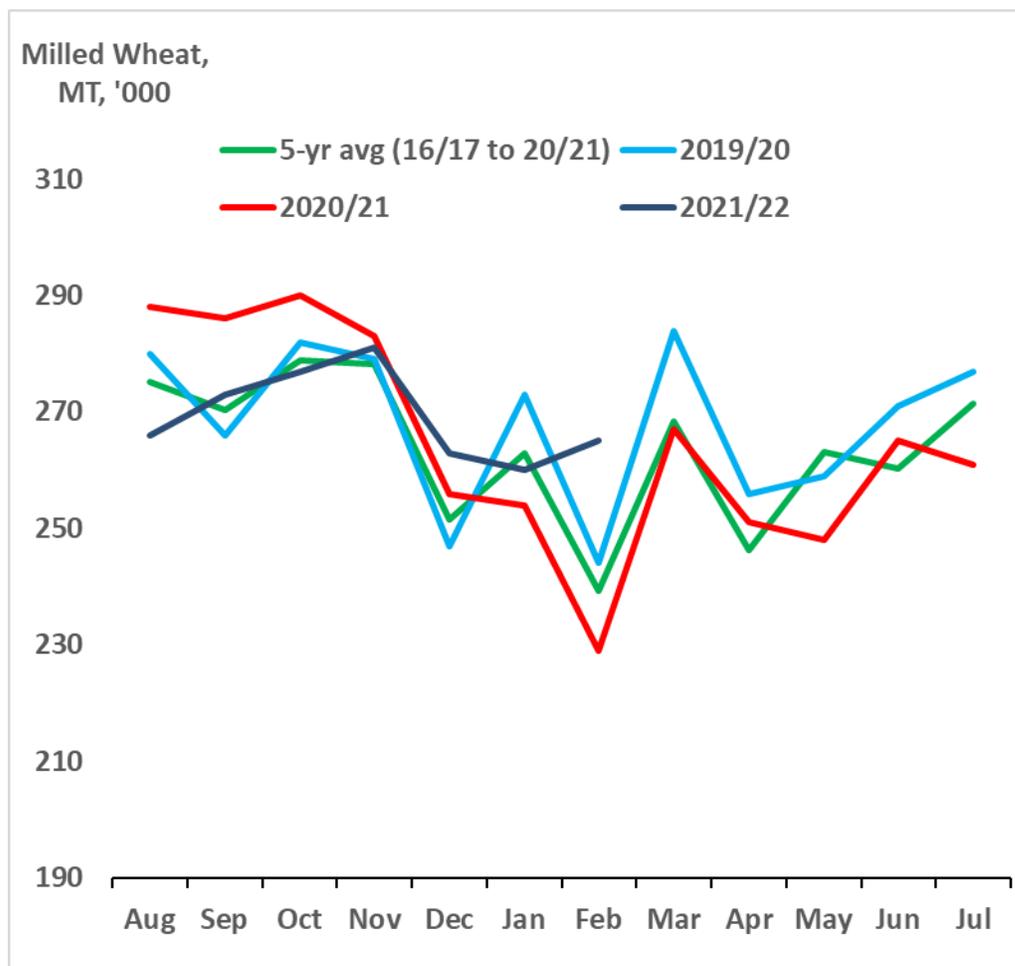
Wheat Use – MY 2021/2022

According to data from the Canadian Grain Commission's (CGC) harvest sample program, the [average protein rate](#) of No. 1 CWRS grown in Western Canada increased to 15.2 percent, much higher than the five-year average of 13.8 percent. The consequence is that a miller that blends CWRS into lower-protein wheat to raise the protein content, requires less CWRS per ton of low-protein wheat.

CGC data also shows that 65.5 percent of CWRS samples graded No. 1, 24 percent graded No. 2, six percent graded No. 3 and just four percent was feed grade.

The protein content of Canada Prairie Spring Red (CPSR) increased from 12.2 percent in 2020 to 13.7 percent in 2021.

Figure 7: Monthly Quantities of Total Wheat Milled



Source: Created by FAS/Ottawa using data from Statistics Canada

Wheat Stocks

As of December 31, 2021, total stocks of wheat were down 38 percent year-over-year to 15.6 million MT. This is the most recent data available from Statistics Canada.

Commercial stocks rose 14.2 percent to 4.3 million MT but were offset by on-farm stocks.

On-farm stocks fell 47.2 percent to 11.2 million MT, on decreased production. Industry sources stated that on-farm storage stocks are expected to fall at a slower pace than typical between December and July, in part because farmers are holding onto high-protein wheat to blend with any potentially lower-protein wheat they produce in 2022, expecting wheat prices to remain at current levels or increase.

BARLEY

Table 9: Production, Supply, and Distribution of Barley

Market Begin Year	2020/2021		2021/2022		2022/2023	
	Aug-20		Aug-21		Aug-22	
	USDA Official	Post	USDA Official	Post	USDA Official	Post
Area Harvested (1,000 HA)	2,809	2,809	3,002	3,002		2,850
Beginning Stocks (1000 MT)	957	957	711	711		209
Production (1000 MT)	10,741	10,741	6,948	6,948		9,405
Imports (1000 MT)	294	294	150	250		90
TY Imports, (1000 MT)	301	301	150	250		90
TY Imp. from U.S., (1000 MT)	299	299	-			
Total Supply, (1000 MT)	11,992	11,992	7,809	7,909		9,704
MY Exports, (1000 MT)	3,534	3,534	1,800	2,500		3,000
TY Exports, (1000 MT)	3,520	3,151	1,800	2,500		3,000
Feed and Residual, (1000 MT)	6,418	6,418	4,500	4,000		5,000
FSI Consumption, (1000 MT)	1,329	1,329	1,100	1,200		1,300
Total Consumption, (1000 MT)	7,747	7,747	5,600	5,200		6,300
Ending Stocks, (1000 MT)	711	711	409	209		404
Total Distribution, (1000 MT)	11,992	11,992	7,809	7,909		9,704
Yield (MT/HA)	3.82	3.82	2.31	2.31		3.30

Barley Production – MY 2022/2023

Barley production is forecast to increase on a return to trend yields, despite a projected decrease in area planted. FAS/Ottawa projects that barley will lose area to higher-priced crops like wheat and oats. This production forecast hinges on the assumption that soil moisture conditions will improve over last year.

Most barley is planted in late April (in the southern-most regions of the prairies) to mid-May.

Barley Production – MY 2021/2022

In MY 2021/22, barley production fell 35 percent over the previous year despite a ten percent increase in area planted. Area planted to barley increased because farmers were incentivized by high barley feed prices last year; however, reduced yields offset the increase in area when they fell from 3.82 hectares to 2.31 MT per hectare due to soil moisture deficits. This puts 2021 yields nearly in line with yields achieved in the 2001 drought.

Barley Trade – MY 2022/2023

Exports are forecast to increase on increased domestic supplies. China has become an important buyer of Canadian feed barley in recent years. Although demand from China can be unpredictable, the country has consistently purchased between 1.4 and 3.3 million MT each marketing year since 2018.

Barley Trade – MY 2021/2022

YTD (through February) exports rose 6.6 percent to 1.9 million MT, almost entirely destined for China, where it is used to produce beer and feed livestock. This increase occurred despite the decrease in Canada's domestic supplies and follows China's tariff on Australian barley, which took effect May 2020.

Canada is a net exporter of barley and, historically, it imports nearly all of its barley imports from the United States. However, due to the domestic feed shortage in MY 2021/22, Canada imported 53,000 MT barley from France and Denmark YTD in February, nearly as much as the 54,000 MT imported from the United States during the same period.

Barley Domestic Use – MY 2022/2023

Moisture deficits in Northern Alberta and southwest Saskatchewan, may create further challenges for cattle producers and feeders and drive feed costs higher.

Barley Domestic Use – MY 2021/2022

Statistics Canada reports that as of December 31, domestic use—largely for feed—fell 39 percent to 2.7 million MT. Cash barley prices in the prairies are being tempered by the large quantities of U.S. corn imports into Canada since last fall. Subsequently, higher prices being offered in China are likely driving up Canadian barley export numbers.

Barley Ending Stocks – MY 2021/2022

Statistics Canada reports that of December 31, stocks of barley decreased by 44 percent year-over-year to 3.1 million MT. On-farm stocks were down 45 percent to 2.8 million MT, while commercial stocks fell 23 percent to 345,500 MT.

CORN

Table 10: Production, Supply, and Distribution of Corn

CORN Market Begin Year	2020/2021		2021/2022		2022/2023	
	Sep-20		Sep-21		Sep-22	
	USDA Official	Post	USDA Official	Post	USDA Official	Post
Area Harvested (1,000 HA)	1,408	1,408	1,391	1,391		1,390
Beginning Stocks (1000 MT)	2,560	2,560	2,169	2,169		1,953
Production (1000 MT)	13,563	13,563	13,984	13,984		13,600
Imports (1000 MT)	1,582	1,580	3,800	4,800		2,500
TY Imports, (1000 MT)	1,548	1,550	3,800	5,000		2,400
TY Imp. from U.S., (1000 MT)	1,794	1,794	0			
Total Supply, (1000 MT)	17,705	17,703	19,953	20,953		18,053
MY Exports, (1000 MT)	1,524	1,558	1,800	1,600		1,500
TY Exports, (1000 MT)	1,561	1,592	1,800	1,600		1,500
Feed and Residual, (1000 MT)	8,621	8,586	11,400	12,000		9,500
FSI Consumption, (1000 MT)	5,391	5,391	5,200	5,400		5,450
Total Consumption, (1000 MT)	14,012	13,976	16,600	17,400		14,950
Ending Stocks, (1000 MT)	2,169	2,169	1,553	1,953		1,603
Total Distribution, (1000 MT)	17,705	17,703	19,953	20,953		18,053
Yield (MT/HA)	9.63	9.63	10.05	10.06		9.80

Corn Production – MY 2022/2023

Corn planted area is forecast to increase marginally, while production is forecast to decrease slightly because yields are projected to decline from record rates and return closer to trendline yields. Planting decisions will be guided by high crop prices, but also high input costs. Several analysts suggested that some farmers may switch from corn to soybeans this year to save on input costs. Corn is a high-input crop, requiring more fertilizer than alternative crops (e.g., soybeans, wheat) grown in Canada's leading corn-growing province of Ontario.

Ontario farmers are particularly vulnerable to the current fertilizer situation because they rely on Russia for 85 to 90 percent of their nitrogen fertilizer use, according to Fertilizer Canada. Farmers in Ontario are expressing concerns about their ability to access fertilizer when needed. Training and forums have cropped up during the spring to help farmers manage the growing season with less fertilizer.

Corn and soybean producers in Ontario have said they expect to be in the fields around the first week of May, after excess water has dried off. In Manitoba, the second-largest corn-growing region of the country, farmers in the Winnipeg area, and further west near the Saskatchewan border, told FAS/Ottawa that they do not expect to be seeding before May 15, due to significant snow, cold temperatures. Heavy rain is in the forecast for the last week of April.

The most favorable corn crops in Ontario and Quebec usually result from corn planted in late April and the first half of May because the crop can utilize the full growing season. In Manitoba, corn is typically seeded between May 1 and May 15.

Corn Production - MY 2021/2022

National corn production increased 3.1 percent from the previous year despite a 1.9 percent reduction in area planted. Corn yields in regions of Ontario broke records, raising the national yield rate to levels not seen since 2015.

Corn Imports – MY 2022/2023

Corn imports are expected to soften from the previous year, assuming domestic feed supplies improve in the fall of 2022 and monthly cattle on feed levels decline from MY 2021/22 levels.

Corn Imports – MY 2021/2022

Corn imports surged to nearly 3.0 million MT (after removing popping corn volume) YTD (through February), up from 0.7 million MT. Feedlots are sourcing an increased amount of corn due to a lack of available domestic supply of feed. Imports of dried distillers' grains with solubles (DDGS) in the current marketing year, YTD (September to February), have increased more than 160 percent year-over-year to a near record of 543,000 MT.

Industry sources told FAS/Ottawa that Canadian Pacific (CP) Rail moved 8,100 carloads of corn from the United States into Alberta in 2021, compared to 600 in 2020. CP Rail's 2021 shipments of DDGS were up over 300 percent from 2020. Some DDGS are also coming into Alberta from Montana by truck off BNSF Railway Company rail cars. Generally, corn moves in unit trains, while DDGS move in less than [unit train](#) volumes. Demand for rail has surged to as much as 40 trains per month as feedlots source an increasing amount of corn due to a lack of available feed barley.

U.S. corn imports into Canada have experienced numerous challenges, including the cold weather effect on rail movement (where trains must lower their speed to prevent infrastructure failure), COVID illness in train and truck workers, border vaccine mandate on truck drivers and train workers, difficulties with

backhauls, and the lower truck weight limit of 30-35 MT in Montana and the Dakotas. During the week of January 10th, four trains (corn and/or DDGS) were expected but only one arrived.

Not all feedlots are in the same position. Feedlots experiencing increased shipping delays are more likely to be reliant on only one feed source.

There have also been anecdotal reports of equipment and parts shortages due to a lack of trucks, which may be exacerbated by the vaccine requirement.

Corn Exports

MY 2022/2023 corn exports are forecast to fall on reduced domestic supplies. MY 2021/22 corn exports are projected to increase from the previous year but are being tempered by strong domestic demand.

Table 11: Canada: Corn Exports, YTD (September to February), '000 MT

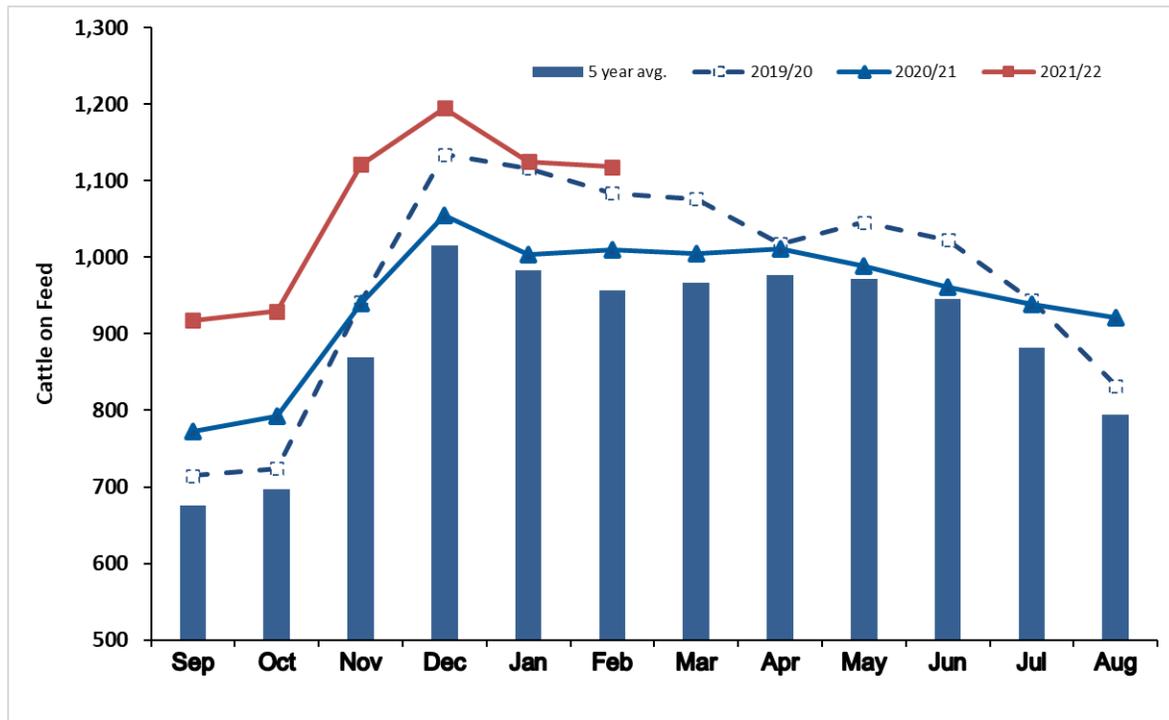
Partner	09/18 - 02/19	09/19 - 02/20	09/20 - 02/21	09/21 - 02/22
World	1,068	185	692	871
Ireland	595	13	266	227
United Kingdom	135	0	161	222
United States	159	172	155	153
Japan	0	0	0	136
Portugal	31	0	31	56
Norway	0	0	0	32

Source: Trade Data Limited, LLC

Corn Domestic Consumption – MY 2022/2023

Data from CANFAX, a Canadian cattle market information source, shows that Saskatchewan and Alberta have the largest cattle on feed levels in 20 years. However, because of low feed supplies, November through January placements dropped off more dramatically than is typical during this period of seasonal decline, suggesting that lower cattle on feed levels may be ahead.

Figure 8: Cattle on Feed in Saskatchewan and Alberta ('000 head)



Source: Created by FAS/Ottawa using data from CANFAX

Corn Domestic Consumption – MY 2021/2022

MY 2021/22 corn for feed levels are forecast to increase over the previous year, based on the most recent data available from Statistics Canada (3,989 MT of feed, waste, dockage, and residual in December 2021), current livestock on feed levels, and anecdotal information from industry.

Corn for feed prices increased to CAD \$495 per ton the week of April 4 from CAD \$335 a year earlier. Feed barley prices in Lethbridge, Alberta increased to CAD \$445 per ton the week of April 4, 2022, from CAD \$315 the previous year, tempered by large volumes of corn imports from the United States. DDGS prices in Edmonton, Alberta increased to CAD \$508 per ton the week of April 4, 2022, from CAD \$402 a year earlier, up less than corn or barley. Historically, most feedlot managers pay a 20 to 25 percent premium over barley for corn DDGS.

OATS

Table 12: Production, Supply, and Distribution of Wheat

OATS	2020/2021		2021/2022		2022/2023	
Market Begin Year	Aug-20		Aug-21		Aug-22	
	USDA Official	Post	USDA Official	Post	USDA Official	Post
Area Harvested (1,000 HA)	1,314	1,314	1,112	1,112		1,260
Beginning Stocks (1000 MT)	426	426	657	657		202
Production (1000 MT)	4,576	4,576	2,606	2,606		4,030
Imports (1000 MT)	17	17	10	19		12
MY Imports, (1000 MT)	19	19	10	19		12
TY Imp. from U.S., (1000 MT)	12	12				
Total Supply, (1000 MT)	5,019	5,019	3,273	3,282		4,244
MY Exports, (1000 MT)	2,022	2,022	1,300	1,400		1,500
TY Exports, (1000 MT)	1,961	1,622	1,300	1,400		1,500
Feed and Residual, (1000 MT)	1,171	1,171	800	680		1,200
FSI Consumption, (1000 MT)	1,169	1,169	900	1,000		1,100
Total Consumption, (1000 MT)	2,340	2,340	1,700	1,680		2,300
Ending Stocks, (1000 MT)	657	657	273	202		444
Total Distribution, (1000 MT)	5,019	5,019	3,273	3,282		4,244
Yield (MT/HA)	3.48	3.48	2.34	2.34		3.20

Oat Production – MY 2022/2023

MY 2022/23 oat production is forecast up on increased area planted in Saskatchewan, due to strong returns relative to competing crops grown in the province, such as barley. Cash prices in Saskatchewan remain competitive with wheat, at \$515 CAD per MT in mid-April. Further, a return to trendline yields is projected to contribute to production growth.

As in recent years, area planted is expected to be concentrated in Saskatchewan (approximately 50 percent). The share planted in Manitoba is forecast to hit just below 20 percent. Most oats are planted close to mid-May, which allows time for much-needed soil moisture accumulation in south-western Saskatchewan, and snowmelt in Eastern Saskatchewan and Manitoba.

Oat Production – MY 2021/2022

Due to soil moisture deficits, average yields were extremely low and production levels sunk slightly lower than levels seen during the Canadian Prairie drought of 2001. There were several reports of farmers in Manitoba harvesting their oats for green feed or silage because the quality was so poor.

Nationally, the volume of oats in the top two grades were well below the five-year average.

Domestic Use – MY 2022/2023

Oat demand from domestic processors for food consumption is growing and may partly displace imports of U.S. products. Regina’s AGT Foods announced in March 2022 that it will be accepting oats harvested in MY 2022/23 at its new oat milling facility in Aberdeen, Saskatchewan. The company stated in a [news release](#) that “construction will commence on the expansion of the Aberdeen facility immediately, with the oat milling facility expected to be fully operational for production and distribution of products by the end of 2022.” Planned capacity is currently unknown.

Also in March, Protein Industries Canada [announced](#) its investment into a project between Oat Canada, an oat-based food and beverage company, and Roquette, a supplier of plant-based ingredients. The project will see the development of novel oat ingredients and oat-based food and beverage products. Planned capacity is currently unknown.

In October 2019, Paterson Foods [announced](#) its intention to construct a state-of-the-art oat mill with plans to supply the industry by late 2022. The mill will be known as O Foods Ltd and is expected to have a capacity of 250,000 MT. The company stated in a press release that the site of the facility “has superior logistics presently served by the Canadian National (CN), Canadian Pacific (CP) and BNSF railways as well as many major trucking firms, allowing O Foods to market its products to the entire continent of North America.”

Domestic Use – MY 2021/2022

Domestic use in MY 2020/21 is expected to decline from the previous year, due to the reduction in domestic supplies.

Unlike wheat, oats do not grow well in dry conditions and, subsequently, the quality of oats were poor. According to data from the Grain Commission’s (CGC) harvest sample program, two-thirds of the crop was below milling and premium horse feed quality. Three percent of oats were graded No 1, 29.5 percent No 2, 35 percent No 3, and 33 percent No 4.

Exports – MY 2022/2023

Exports are forecast to increase on expanded production. Demand from the United States and Latin America are projected to remain strong.

Exports – MY 2021/2022

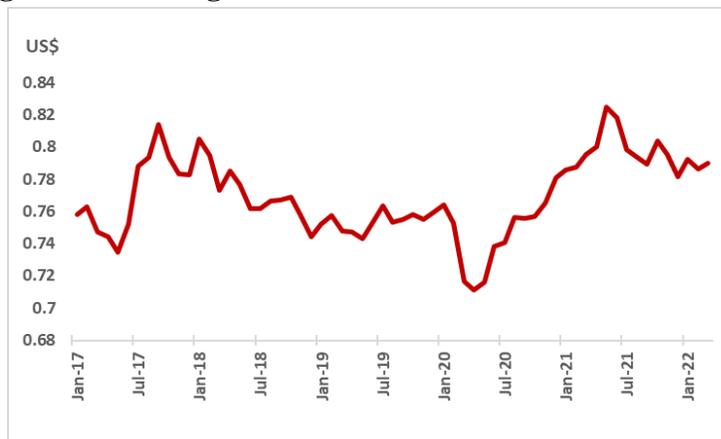
YTD February exports are down 35 percent from the same period the previous year, on reduced domestic supplies. While the pace has been strong (relative to supplies) in MY 2021/22 exports are expected to slow as stocks are drawn down to their lowest level in years. Still, Canada is projected to remain the largest oat exporter in the world by far. YTD, Canada's exports comprise more than 55 percent of the global oat exports. Ninety-two percent of exports were destined for the United States, up from 74 percent in MY 2020/21.

Imports – MY 2022/2023

FAS/Ottawa's MY 2021/22 oat import forecast is nearly 90 percent higher than the USDA Official forecast of 10 thousand MT. This is because YTD imports have already reached 13,000 MT in the first seven months of the marketing year and are projected to increase, albeit at a slower pace, to meet feed demand.

MARKETING

Figure 9: Exchange Rate of Canadian Dollar to U.S. Dollar



Source: Created by FAS/Ottawa using Bank of Canada data

Fallout from the COVID-19 pandemic took the Canadian dollar below USD \$0.70 in March 2020, but it recovered 20 percent to USD \$0.83 by May 2021. Since then, the currency has remained relatively high and responsive to fluctuations of demand for commodities, including oil. However, the recent high oil prices have not moved the dollar as much as historic trends would suggest.

While the lower currency exchange rate posed an advantage to Canadian exporters in MY 2019/20, Canadian producers faced steeper input costs on imported chemicals and feed. A stronger Canadian currency works to the advantage of Canadian farmers who are importing feed and inputs at high prices.

POLICY

Carbon Markets

A nationwide marketplace to trade carbon credits will create incentives to pursue activities, such as growing cover crops and conservation crops, to promote healthy soils, manage greenhouse gas (GHG) emissions, and create other environmental benefits. Carbon markets can create monetary value that can streamline back to the grower.

[The Federal Greenhouse Gas Offset System](#) was passed in 2019. A [draft](#) was published in March 2021, and offset regulations will be final in 2022. Carbon protocols may be out for public comment late in 2022.

To be eligible to generate offset credits, all projects will be required to achieve real, additional, quantified, verified, unique, and permanent GHG reductions or removals by following an approved federal GHG offset protocol. Currently, the only active, national, voluntary carbon offset protocol is the pilot [Canada Grassland Protocol](#). One of its goals, according to the Canadian Forage and Grassland Association, is to “demonstrate the feasibility for a protocol for Canadian compliance markets through testing alignment with the Alberta and Canadian compliance offset systems.”

The only carbon offset protocol currently under development by the federal government and directly relevant to crop production is the Enhanced Soil Organic Carbon Protocol. Protocols for Avoided Conversion of Grasslands, Reduced Nitrogen Oxide Emissions from Agriculture Fertilizer “may also be considered,” according to government documents.

Alberta and British Columbia currently have active provincial carbon markets. Saskatchewan’s carbon market is currently under development.

While carbon markets serve short- and medium-term demand for carbon credits industry pledges of carbon neutrality place the target date a decade or more into the future, serving longer-term demand for carbon credits. The Grain Growers of Canada, for example, issued a road map for net zero by 2050, recognizing that this is a priority of the federal government.

Fourteen farm organizations have formed the [Agriculture Carbon Alliance](#) (ACA) to “ensure that Canadian farmers’ sustainable practices are recognized through a policy environment that maintains their competitiveness, supports their livelihoods, and leverages their critical role as stewards of the land.”

Carbon Tax

An additional factor impacting producers is the federal carbon tax, which increased by 25 per cent on April 1, from USD \$32 (CAD \$40) per ton of carbon to USD \$40 (CAD \$50) a ton. This increased the price of gasoline by about CAD \$0.022 cents per liter as the carbon tax rose from CAD \$0.088 to CAD \$0.11 per liter. The tax is scheduled to increase CAD \$10 annually until it reaches CAD \$170 a ton by 2030, or CAD \$0.396 per liter.

The Governor of the Bank of Canada recently told the House of Commons Standing Committee on Finance that, to date, the carbon tax has increased Canada's inflation rate by 0.4 percent.

The [province of Alberta](#) paused the province's 13-cent-per-litre provincial gas tax on April 1, 2022 in response to a rising inflation rate. The gas tax will remain on pause as long as West Texas Intermediate (WTI) crude remains above CAD \$90 a barrel. After that, it will be adjusted based on a sliding scale of WTI's price. The federal carbon tax still applies in the province.

Bill C-234 – Economic Relief for Farmers

On June 23, 2021, Bill C-206 was introduced to exempt all farm fuels from the carbon tax. If passed, Bill C-206 would also have exempted natural gas and propane used for grain drying from the carbon tax. The Bill did not receive a second reading in the Senate (after it was reinstated in the second session of the 43rd Parliament) because a federal election was called.

On February 7, 2022, a related bill, [Bill C-234](#), An Act to amend the Greenhouse Gas Pollution Pricing Act, was introduced in Parliament. The bill expands the list of farming machinery eligible for the federal carbon tax exemption to include: a) property used for the purpose of providing heating or cooling to a building or similar structure, including those used for raising or housing livestock, and; b) grain dryers.

On April 12, 2022, the Parliamentary Budget Officer (PBO) published a [legislative note](#) of the cost of the federal carbon tax exemption for marketable natural gas and propane used by eligible farming machinery as provided in Bill C-234. The PBO estimates that in fiscal year 2022/2023, exemptions to farmers will total USD \$45 million (or CAD \$57 million), rising to USD \$148 million (or CAD \$186 million) in 2030/2031 as the carbon tax rises from USD \$40 per ton of carbon (CAD \$50) to USD \$135 per ton (CAD \$170), respectively.

Bill C-234 was debated at second reading on March 25, 2022. It is currently in progress.

Reducing Emissions Arising from the Application of Fertilizer

In December 2020, the Government of Canada announced its Strengthened Climate Plan, “[A Healthy Environment and a Healthy Economy.](#)” It includes a number of measures affecting the agriculture sector, with a goal to reduce GHG emissions, and increase carbon sequestration. One of these measures is a national target to reduce absolute levels of GHG emissions arising from fertilizer application by 30 percent below 2020 levels by 2030.

The government has issued a [discussion paper](#) on the topic, and opened up consultations until June 3, 2022.

The discussion paper has generally been negatively received by Canadian grain and oilseed associations who state that an emissions reductions effort must deploy a variety of incentives and solutions that support farmers who adopt practices that work for their farms. Farmer groups also say there is a contradiction in the federal government’s objective to reduce fertilizer use but also expand export volumes. The focus instead, they state, should be on emissions reductions.

Attachments:

No Attachments