Model-based principal field crop estimates, August 2023

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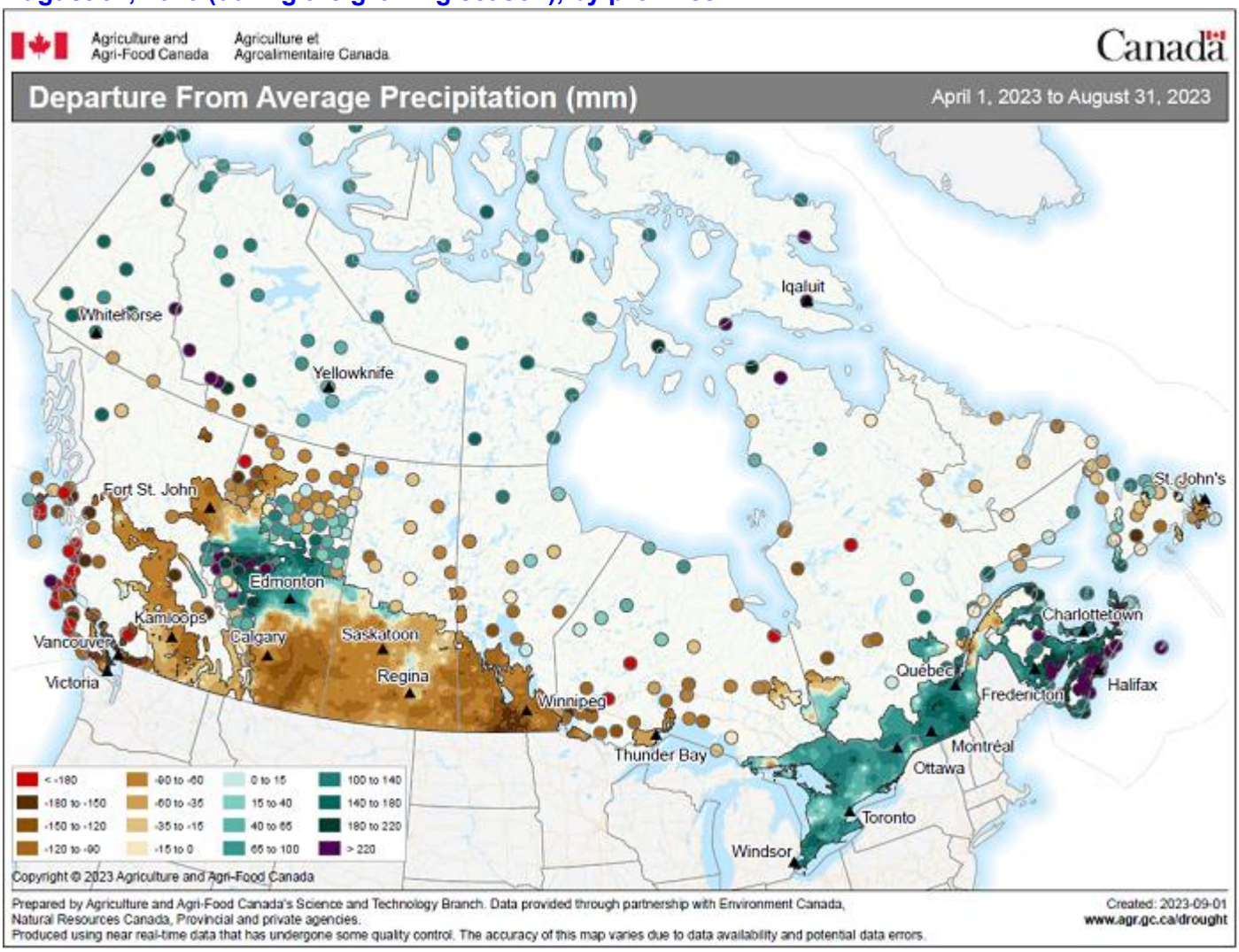
In 2023, Canadian farmers are projected to produce more corn for grain and soybeans, but less wheat, canola, barley and oats, compared with 2022, according to recent yield model estimates using satellite imagery and agroclimatic data. Decreased production for most crops was driven by lower yields related to dry conditions in Western Canada.

Statistics Canada, in collaboration with Agriculture and Agri-Food Canada, has relied upon proven satellite technology to model preliminary crop yields and production since 2016. These methods have successfully been used for the past eight years to produce August yield estimates, and they replaced July yield estimates beginning in 2020. The September 2023 publication of the Field Crop Reporting Series is a joint release between Statistics Canada and Agriculture and Agri-Food Canada.

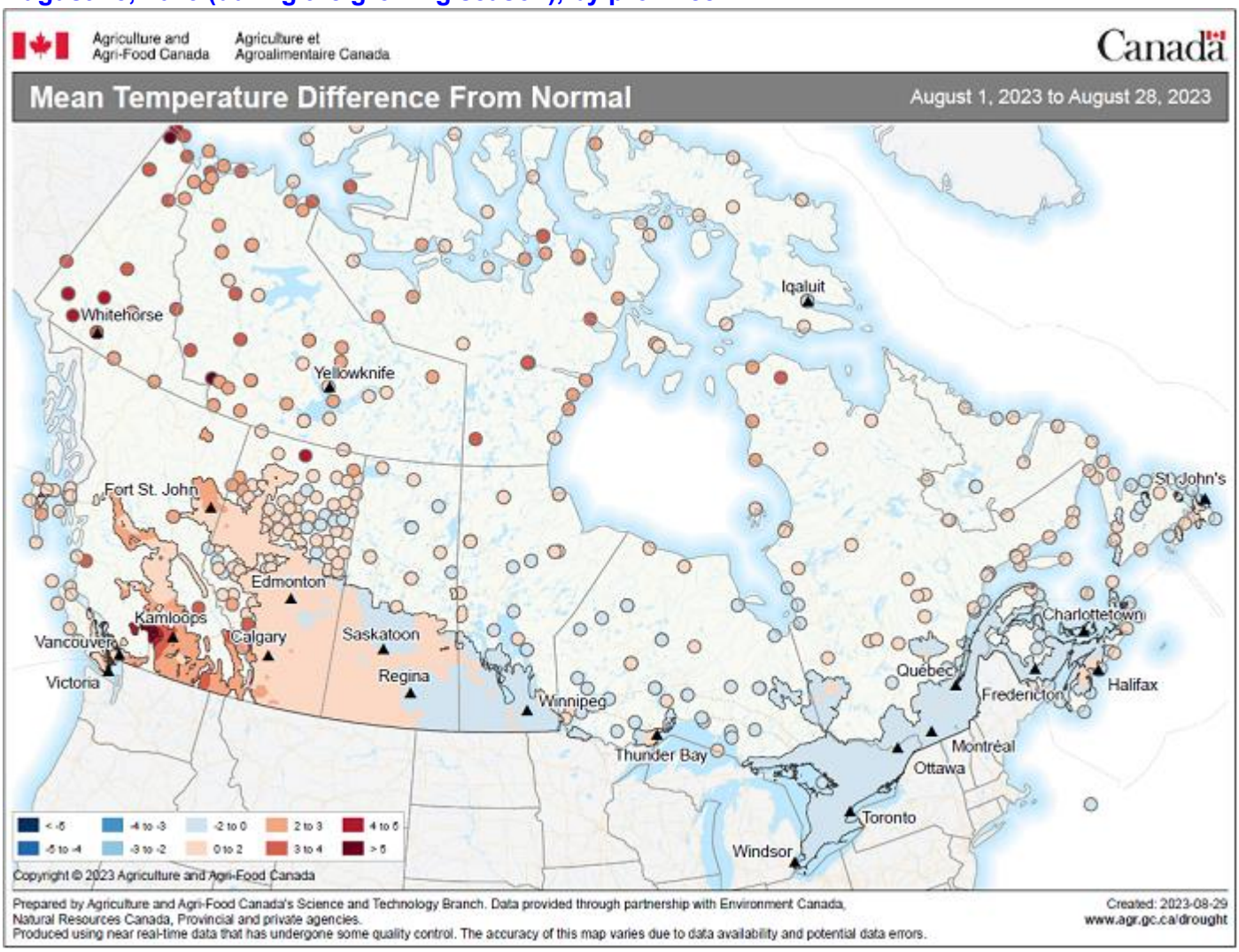
The Crop Condition Assessment Program indicates that overall plant health in the Prairie provinces was lower to much lower than normal as of August 31, raising the possibility that yields will be lower to much lower than normal. Across much of Western Canada, lower-than-average precipitation and high temperatures resulted in poorer crop conditions than in 2022.

In Eastern Canada, most of Ontario, Quebec and the Atlantic provinces have received higher-than-average rainfall since the beginning of the 2023 growing season. In general, temperatures over the last month of the growing season were slightly warmer than normal.

Map 1 – Departure from average precipitation (in millimetres) from April 1 to August 31, 2023 (during the growing season), by province



Map 2 – Mean temperature difference from normal (in degrees Celsius) from August 1 to August 28, 2023 (during the growing season), by province



Wheat production is expected to decrease, as yields fall

Nationally, wheat production is projected to decrease by 13.1% year over year to 29.8 million tonnes in 2023. The decrease is attributable to lower yields, which are expected to fall by 17.6% to 41.7 bushels per acre because of dry conditions across the Prairies, offsetting higher anticipated harvested area, which is expected to rise 5.6% to 26.3 million acres.

The anticipated decrease in total wheat production is largely attributable to spring wheat, which is expected to fall by 12.4% to 22.6 million tonnes. Spring wheat yields are anticipated to fall by 18.0% to 43.6 bushels per acre, while harvested area is expected to increase by 6.9% to 19.1 million acres.

Durum wheat harvested area is expected to decrease by 1.5% to 5.8 million acres, while yields are anticipated to fall by 29.0% to 25.5 bushels per acre, contributing to lower anticipated durum wheat production (-29.9% to 4.1 million tonnes).

Wheat harvested area in Saskatchewan is projected to rise by 5.9%, while yields are expected to fall by 22.4% to 33.2 bushels per acre, resulting in a 17.8% decrease in production to 12.6 million tonnes.

Wheat production in Alberta is projected to decrease by 17.3% from 2022 to 9.4 million tonnes in 2023. This is the result of lower anticipated yields (-19.8% to 44.6 bushels per acre) offsetting higher anticipated harvested area, which is expected to rise by 3.1% to 7.7 million acres.

In Manitoba, wheat harvested area is expected to rise by 6.2% to 3.2 million acres, while yields are anticipated to decrease by 6.9% to 54.1 bushels per acre. Total wheat production is anticipated to fall by 1.0% year over year to 4.7 million tonnes.

Wheat production in Ontario (the majority of which is winter wheat) is projected to rise by 13.6% to 2.7 million tonnes year over year on higher harvested acres (+21.3%), offsetting lower yields (-6.3%).

Lower yields push canola production down

Nationally, canola production is expected to fall by 7.1% to 17.4 million tonnes in 2023. The anticipated decrease in production is attributable to lower yields, which are expected to fall 9.8% to 35.0 bushels per acre, while harvested area is expected to increase by 3.0% to 21.9 million acres.

Compared with 2022, Saskatchewan is expected to produce 6.1% less canola in 2023, at 9.2 million tonnes. Yields are projected to decrease by 13.7% to 32.8 bushels per acre, while harvested area is expected to rise by 8.7% to 12.3 million acres.

Canola production in Alberta is expected to decrease by 3.8% to 5.4 million tonnes. The decrease is the result of lower anticipated harvested area (-3.0% to 6.3 million acres) and lower yields, which are expected to edge down 0.8% to 37.8 bushels per acre.

In Manitoba, yields are expected to decrease by 11.8% to 38.2 bushels per acre. Harvested area is anticipated to fall 4.1% to 3.1 million acres, resulting in a 15.5% production decrease to 2.7 million tonnes.

Corn for grain production is projected to increase

Nationally, corn for grain production is projected to increase by 2.7% to 14.9 million tonnes in 2023. Yield is anticipated to fall to 158.3 bushels per acre (-1.3%), while harvested area is expected to rise to 3.7 million acres (+4.1%).

In Ontario, the province that produces the most corn for grain, production is expected to rise by 3.2% to 9.7 million tonnes on higher anticipated yields (+4.2% to 172.9 bushels per acre), offsetting lower anticipated harvested area (-0.9% to 2.2 million acres).

Corn for grain production in Quebec is projected to fall by 3.2% year over year to 3.4 million tonnes. Yields are expected to fall by 4.0% to 151.9 bushels per acre, while harvested area is expected to increase by 0.8% to 893,100 acres.

In Manitoba, production of corn for grain is expected to rise 12.8% to 1.5 million tonnes because of higher anticipated harvested area (+42.1% to 528,600 acres), offsetting lower anticipated yields (-20.7% to 111.8 bushels per acre).

Soybean production is expected to rise due to higher harvested areas

Nationally, soybean production is projected to increase by 2.7% year over year to 6.7 million tonnes in 2023. Yields are expected to fall by 3.7% to 44.2 bushels per acre, while harvested area is anticipated to increase by 6.8% to 5.6 million acres.

Soybean production in Ontario is expected to edge down 0.3% to 4.0 million tonnes. Harvested area is expected to fall by 5.1% to 2.9 million acres, while yields are anticipated to rise 5.2% to 50.5 bushels per acre.

In Manitoba, soybean production is anticipated to increase by 4.5% to 1.4 million tonnes. Harvested area is expected to increase by 39.8% to 1.6 million acres. However, yields are projected to fall by 25.3% year over year to 32.1 bushels per acre.

In Quebec, soybean production is projected to increase by 12.0% to 1.3 million tonnes on higher anticipated yields (+6.4% to 46.5 bushels per acre) and harvested area (+5.3% to 996,000 acres).

Barley and oat production are projected to fall

Lower anticipated barley yields (-22.2% to 54.8 bushels per acre) in 2023, compared with 2022, are projected to more than offset higher anticipated harvested area (+1.0% to 6.6 million acres). As a result, barley production is expected to fall by 21.5% year over year to 7.8 million tonnes in 2023.

Oat production is projected to fall by 53.4% to 2.4 million tonnes, the lowest production in more than a decade. The decrease is attributable to lower harvested area, which is expected to decline by 40.9% to 2.0 million acres, and lower yields, which are expected to fall by 21.2% year over year to 77.1 bushels per acre.

Note to readers

This release provides the preliminary production estimates for 2023. The estimates are produced using model-based data.

The approaches employed in producing these estimates are in line with the AgZero initiative underway at Statistics Canada, which aims to produce high-quality estimates using modelling, administrative data and other non-traditional survey-based approaches.

The Field Crop Reporting Series produces data from Quebec, Ontario, Manitoba, Saskatchewan and Alberta for all occasions during the crop year (from March to December). However, data are collected twice a year (in the June field crop survey on seeded areas and in the November field crop survey on final crop production) for Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick and British Columbia, which represent from 2% to 4% of national totals.

As of July 2014, for these provinces, July production estimates are calculated using the final estimates of the last three crop years. The harvested area is first estimated based on the ratio obtained from the sum of harvested areas of the last three years over the sum of the seeded areas of the last three years. This average ratio is applied to their current year's seeded acreage from the June survey. This harvested area is then multiplied by the average yield of the last three years to estimate production.

Final survey-based production estimates for 2023 will be released on December 4, 2023, and are subject to revision for two years.

August model-based data were used to produce estimates of crop yield at the Census Agricultural Region level. For more information regarding the model-based data please visit An Integrated Crop Yield Model Using Remote Sensing, Agroclimatic Data and Crop Insurance Data.

Readers are also invited to consult the Crop Condition Assessment Program web application, which is an additional tool to assess growing conditions of field crops during the crop year. Readers can monitor a vegetation index of crop land on a weekly basis.

Table 1
Estimates of production of principal field crops, Canada

	2021	2022	2023	2021 to 2022	2022 to 2023
	thousands of tonnes			% change	
Total wheat	**22 422**	**34 335**	**29 835**	**53.1**	**-13.1**
Durum wheat	3 032	5 790	4 059	90.9	-29.9
Spring wheat	16 162	25 844	22 637	59.9	-12.4
Winter wheat	3 228	2 701	3 139	-16.3	16.2
Barley	6 984	9 987	7 842	43.0	-21.5
Canola	14 248	18 695	17 368	31.2	-7.1
Chick peas	91	128	134	40.1	5.1
Corn for grain	14 611	14 539	14 932	-0.5	2.7
Dry field peas	2 244	3 423	2 272	52.6	-33.6
Flaxseed	337	473	268	40.6	-43.4
Fall rye	363	514	353	41.6	-31.3

Table 1
Estimates of production of principal field crops, Canada

	2021	2022	2023	2021 to 2022	2022 to 2023
Lentils	1 594	2 301	1 542	44.4	-33.0
Mustard seed	61	162	168	167.3	3.7
Oats	2 899	5 226	2 435	80.3	-53.4
Soybeans	6 224	6 543	6 722	5.1	2.7

Source(s): Table 32-10-0359-01.

Available tables: table 32-10-0359-01.

Definitions, data sources and methods: survey number 5225.

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; **infostats@statcan.gc.ca**) or Media Relations (**statcan.mediahotline-ligneinfomedias.statcan@statcan.gc.ca**).