United States Department of Agriculture

Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division
Web: https://ipad.fas.usda.gov

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Commodity Intelligence Report

Canada: Seasonal Summary for MY 2021/22

The marketing year (MY) 2021/22 brought substantial challenges for Canadian farmers in the Prairie Provinces, as remarkable heat and drought devastated crops in the grain and rapeseed growing regions of Alberta, Saskatchewan, and Manitoba. Yields for rapeseed (-40 percent), wheat (-32 percent), barley (-38 percent), and oats (-33 percent), all primarily grown in the Prairies, are notably well-below their 5-year averages. Farmers in Central Canada, however, benefited from warm temperatures and abundant rainfall which boosted corn and soybean yields, particularly in southern Ontario. Corn yield is estimated to be the second highest on record, and soybean yield is expected to be above average.

The dominant storyline of the 2021/22 season was the intense and widespread drought in the Prairies. Dry conditions arrived over most of the agricultural regions of Canada during the harvest season of 2020 and were followed by below-average precipitation over the 2020/21 winter (see Figure 1). The three Prairie Provinces received among their lowest accumulated precipitation in the last 30 years, during this period, leading into the spring planting season (see Figure 2). While abundant summer rainfall alleviated the early season dryness in Ontario, summer rains did not arrive in adequate amounts in the Prairies (see Figure 3), intensifying the drought that had already settled in that region.

Exacerbating conditions in the Prairies was the summer heat wave that enveloped much of western North America in late June through mid-July. High temperatures persisted in the region throughout the growing season and into early August (see Figure 4), creating especially difficult conditions for rapeseed. Prolonged periods of temperatures above 29.5°C during critical rapeseed reproductive stages, typically in mid- to late-July, causes yield loss. This year, the rapeseed crop matured early due to the heat and drought. It flowered in early July, during the peak of the heat wave. By the end of July, many of the rapeseed growing areas in the Prairies had experienced several days, or even weeks of temperatures above this yield-threatening threshold (see Figure 5). Satellite-derived, Normalized Difference Vegetation Index (NDVI) analysis at the end of the growing season and leading into harvest indicated severely degraded crop conditions throughout the Prairies (see Figure 6).

The hot, dry conditions accelerated maturation for many crops and led to rapid harvest progress in the Prairies. Harvest was complete for most crops by early September, with corn and soybean harvest wrapping up in November (see Figure 7).

Wheat

Over 90 percent of Canada's wheat and virtually all its durum and spring wheat is grown in the Prairie Provinces (see Figure 8). Spring wheat, on average, accounts for 73 percent of the total Canadian wheat crop, while durum accounts for 19 percent. Winter wheat accounts for roughly 8 percent, on average, and is primarily grown in southern Ontario, along with a small amount in the Prairies.

For MY 2021/22, planted area for both winter and spring wheat was reduced by 8 percent from last year in favor of barley and oilseeds. Planted area for durum wheat, mainly grown in Saskatchewan, was down 3 percent. Mild conditions over winter reduced winterkill of winter wheat in Ontario, where over 80 percent of it is grown. Statistics Canada estimates a record winter wheat yield in the province (6.11 tons per hectare). Winter wheat, however, accounts for only 14 percent of the total wheat crop in MY 2021/22, too little to offset yield losses of spring varieties, which struggled with the drought conditions in the Prairies. Total wheat area is estimated at 9.2 million hectares (mha), 8 percent below last year and 3 percent below the 5-year average. Total wheat yield is expected to be 2.34 tons per hectare (t/ha), 33 percent below last year and 32 percent below the 5-year average. Total wheat production is estimated at 21.7 million metric tons (mmt), 38 percent less than last year, and 33 percent below the 5-year average.

Feed Grains

Barley is largely grown in Alberta and Saskatchewan, which account for 48 and 41 percent of national production, respectively (see Figure 9). Favorable prices and low carry-in stocks led Canadian farmers to plant nearly 10 percent more area to barley than last year. Drought conditions, however, devastated the crop, leading to increased area loss (abandonment) and large yield reductions. Harvested area is estimated at 3.0 mha, 7 percent lower than last year but 22 percent above the 5-year average. Yield is estimated at 2.31 t/ha, 39 percent below last year and 38 percent below the 5-year average. Production is estimated at 6.9 mmt, 35 percent below last year and 25 percent below the 5-year average.

Oats are also primarily grown in the Prairies (see Figure 10). Canadian farmers reduced planted area for oats by nearly 11 percent from last year. Like barley, oats suffered area losses and yield reductions due to the drought. Harvested area is estimated at 1.1 mha, 15 percent below last year, and 2 percent below the 5-year average. Yield is estimated at 2.34 t/ha, 33 percent lower than last year and the 5-year average. USDA estimates production at 2.6 mmt, 43 percent below last year, and 32 percent below the 5-year average.

Corn is predominantly grown in Central Canada and Manitoba, with its largest portion (63 percent) grown in Ontario (see Figure 11). Conditions in Ontario were favorable, with abundant rainfall and warm temperatures boosting national corn yield to 10.05 t/ha, up 4

percent over last year and the 5-year average, and the second highest on record (the record yield for corn is 10.21 t/ha in MY 2015/16). Farmers reduced area planted, however, by 2.5 percent. Harvested area fell 1 percent from last year, to 1.4 mha, limiting production to 14.0 mmt, 3 percent above last year, and 2 percent above the 5-year average. This is the third-highest corn production on record for Canada.

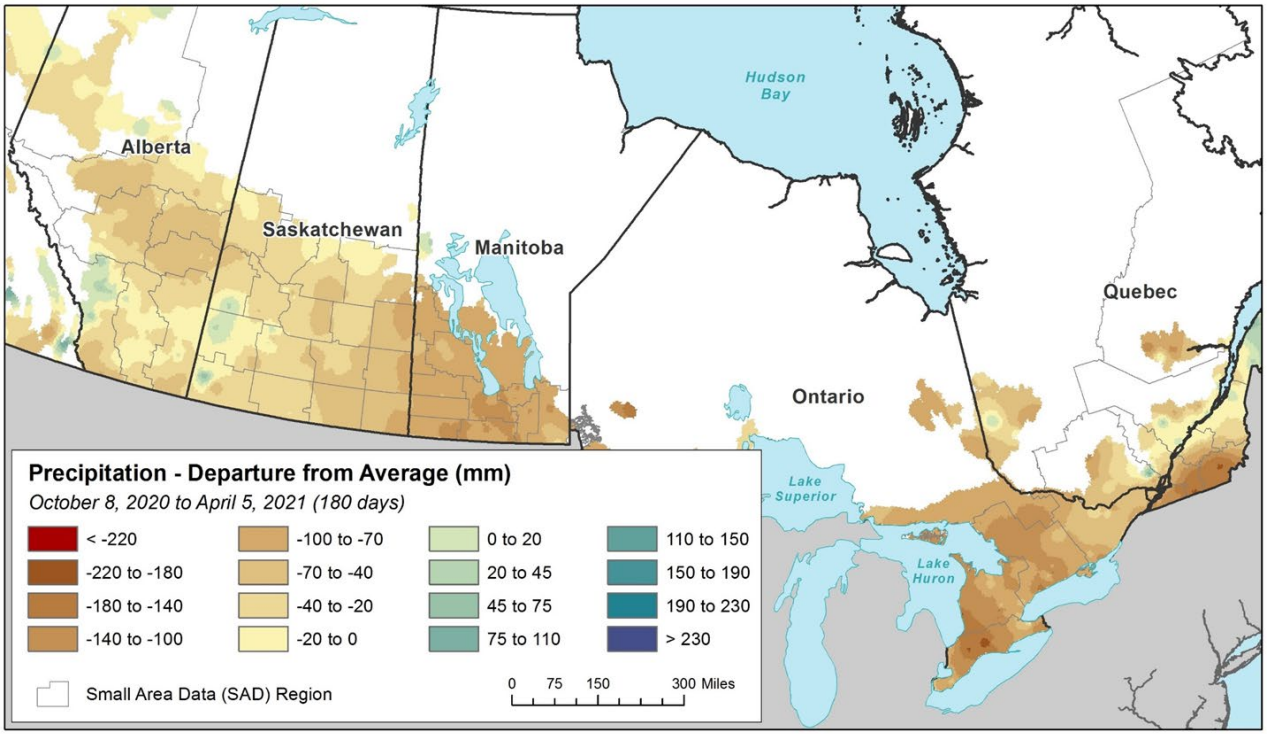
Oilseeds

Canadian farmers favored oilseeds over most grains in MY 2021/22, increasing planted area for both soybeans and rapeseed by 5 and 8 percent, respectively. Like corn, soybeans are primarily grown in Ontario, Manitoba, and Quebec (see Figure 12), which limited the crop's exposure to the drought. Conditions for soybeans were ideal in Ontario, leading to a record yield in the province (3.47 t/ha). Below-average yields in Manitoba (1.82 t/ha), which accounts for nearly a quarter of the total national production, limited overall soybean yield to 2.94 t/ha, a 6-percent fall from last year's record yield of 3.12 t/ha, but 3 percent above the 5-year average. Harvested area is estimated at 2.1 mha, up 5 percent over last year, but 11 percent below the 5-year average. Production is estimated at 6.3 mmt, 1 percent below last year, and 8 percent below the 5-year average.

Rapeseed is primarily grown in Saskatchewan (53 percent) and Alberta (30 percent) (see Figure 13). As such, the summer heat wave and widespread drought severely impacted this year's crop. Yield is estimated at 1.40 t/ha, down 40 percent from last year and the 5-year average. Harvested area is estimated at 9.0 mha, up 8 percent from last year and 4 percent above the 5-year average. Rapeseed production is estimated at 12.6 mmt, 35 percent lower than last year and 38 percent below the 5-year average.

The contributions of staff at the USDA-FAS office in Ottawa are gratefully acknowledged.

Precipitation Departure from Average – 180 Days Prior to Planting Season



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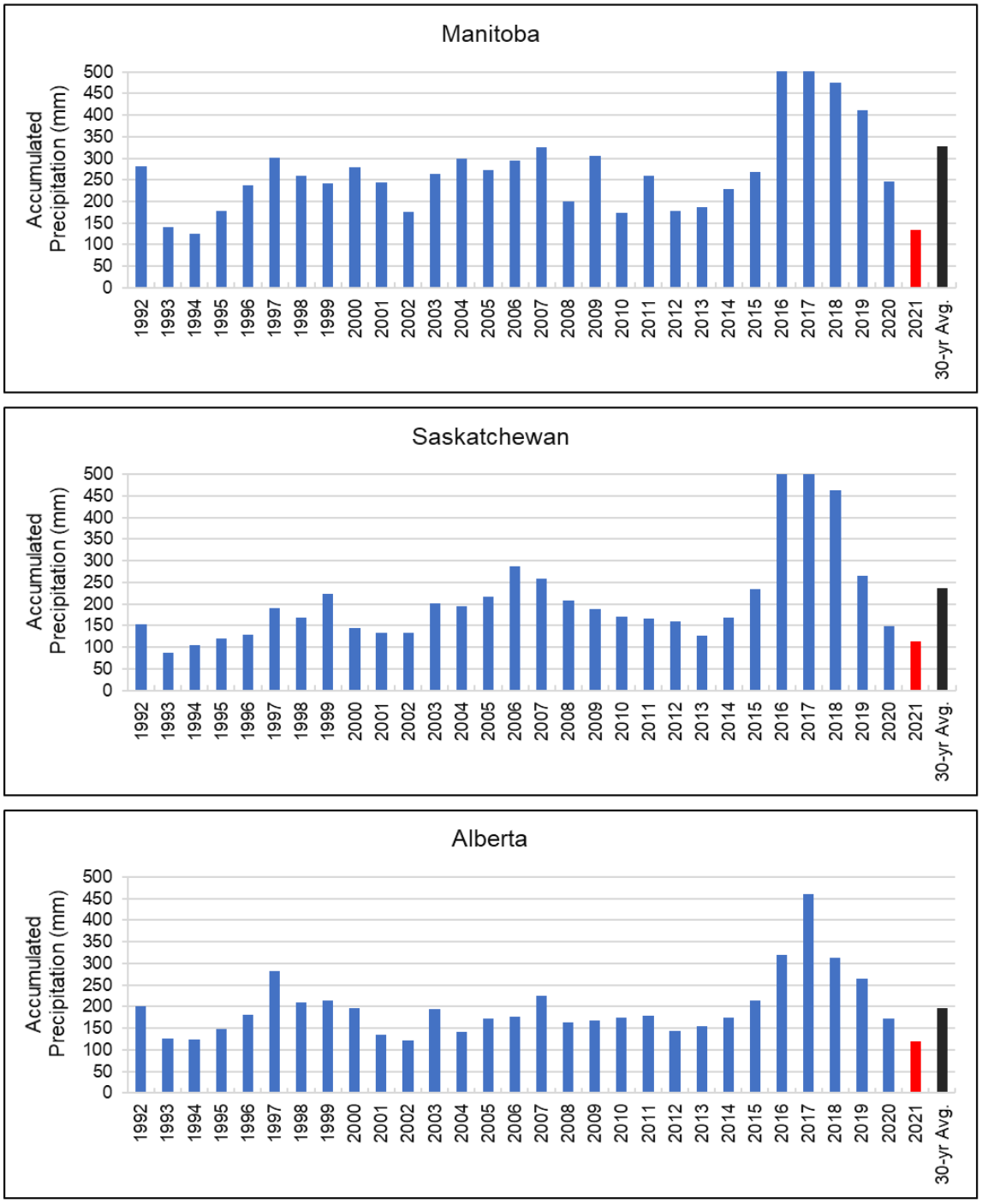
Source: Agriculture and Agri-Foods Canada (AAFC) Climate Services

Figure 1. 180-day departure from average precipitation (mm), October 8, 2020 through April 5, 2021. Dry conditions in most of the agricultural regions of Canada during the MY 2020/21 harvest season persisted over winter and leading into the spring MY 2021/22 planting season.

Accumulated Precipitation (8-months: September through April)



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Source: World Meteorological Organization (WMO)

Figure 2. Eight-month accumulated precipitation (mm) in the Prairie Provinces, September 1, 2020 through April 30, 2021. Manitoba, Saskatchewan, and Alberta received among the lowest amounts of precipitation in 30 years, in the months preceding the spring MY 2021/22 planting season. This resulted in soil moisture deficits that increased the risk of extreme drought leading into planting and the summer growing season.

Canada Seasonal Rainfall – April through October 2021

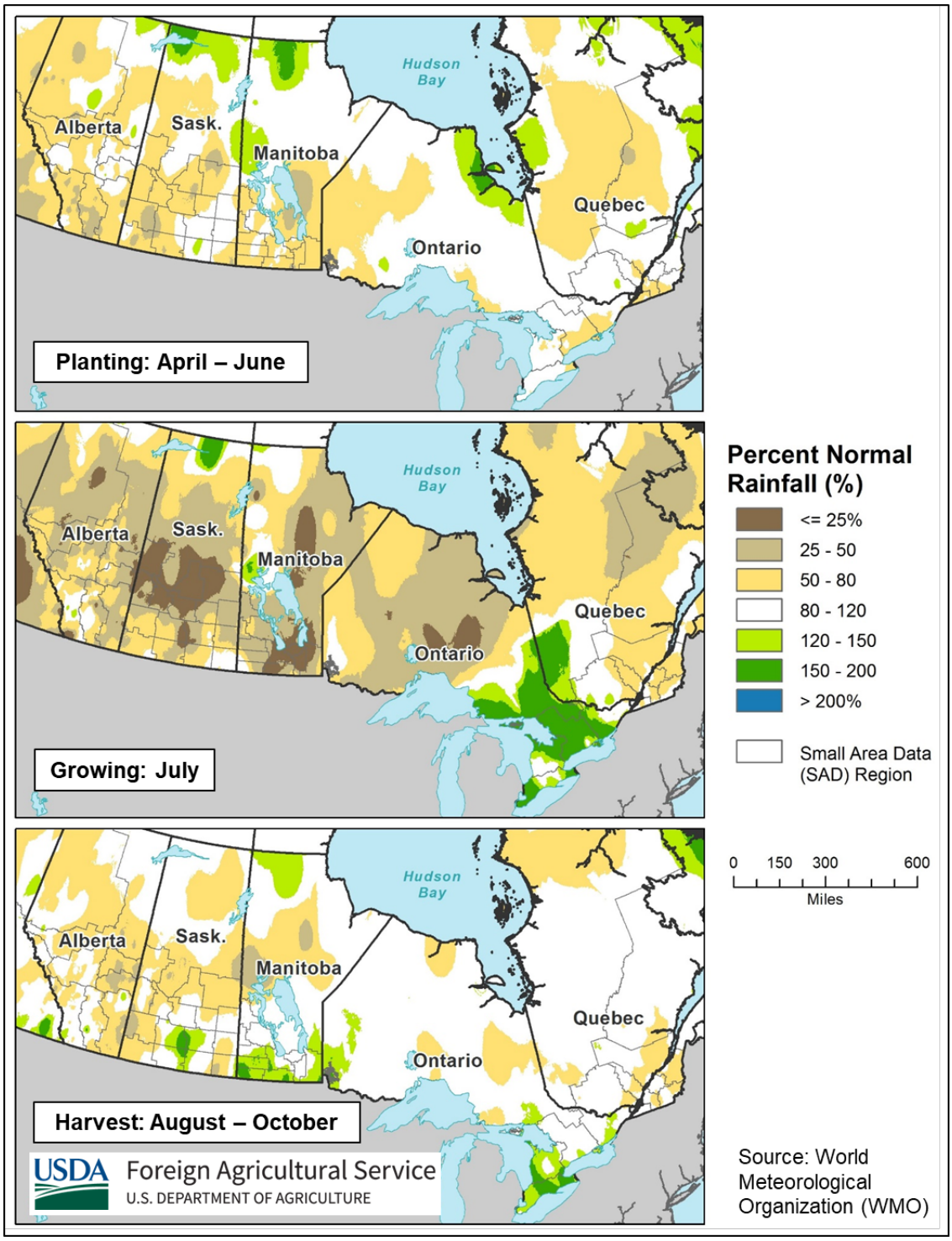
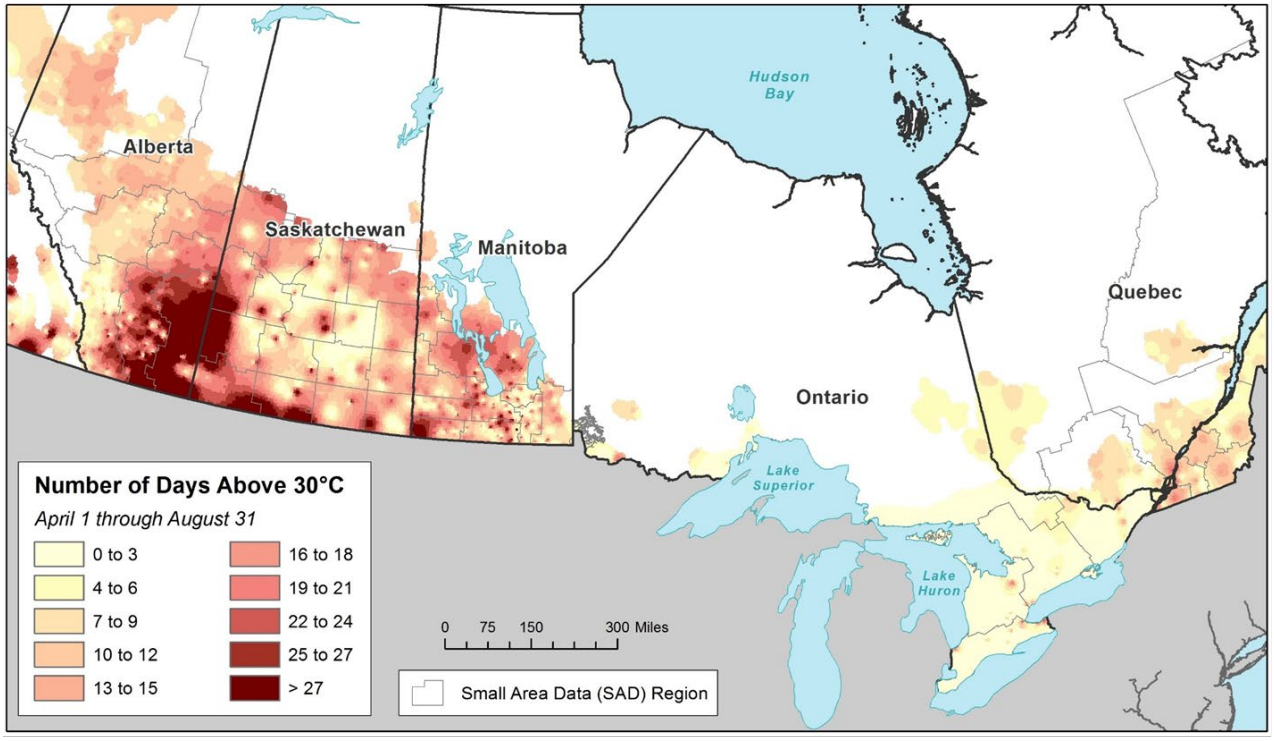


Figure 3. Percent normal rainfall during planting (3 mo., April through June), the growing season (1 mo., July), and harvest for most crops (3 mo., August through October). White indicates normal rainfall. Below-normal rainfall occurred in the Prairies, while abundant rainfall was present in Ontario, particularly during the summer growing season.

No. of Days with Temperatures above 30ºC – April through August 2021



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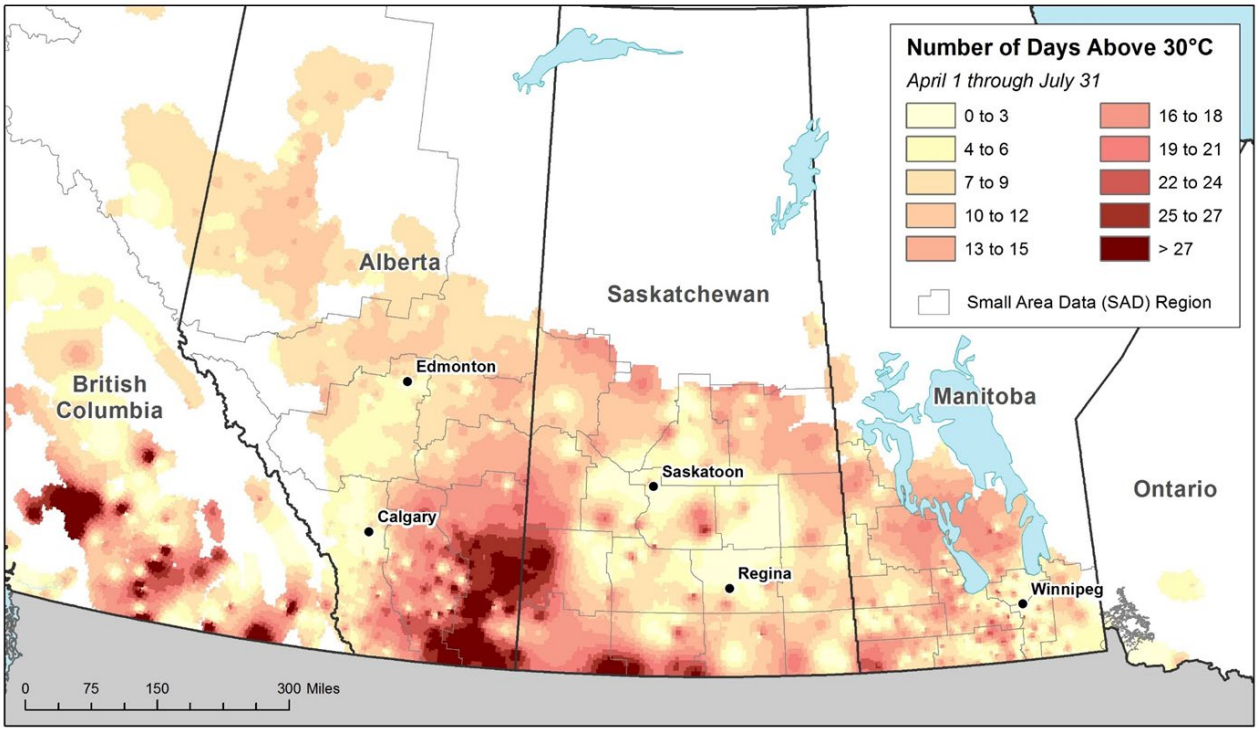
Source: Agriculture and Agri-Foods Canada (AAFC) Climate Services

Figure 4. The total number of days with maximum temperatures above 30ºC, April 1 through August 31, 2021. The summer heat wave brought abnormally high temperatures over much of western North America, threatening crop health, particularly in the context of the ongoing drought in the region.

Heatwave During the Growing Season in the Canadian Prairies



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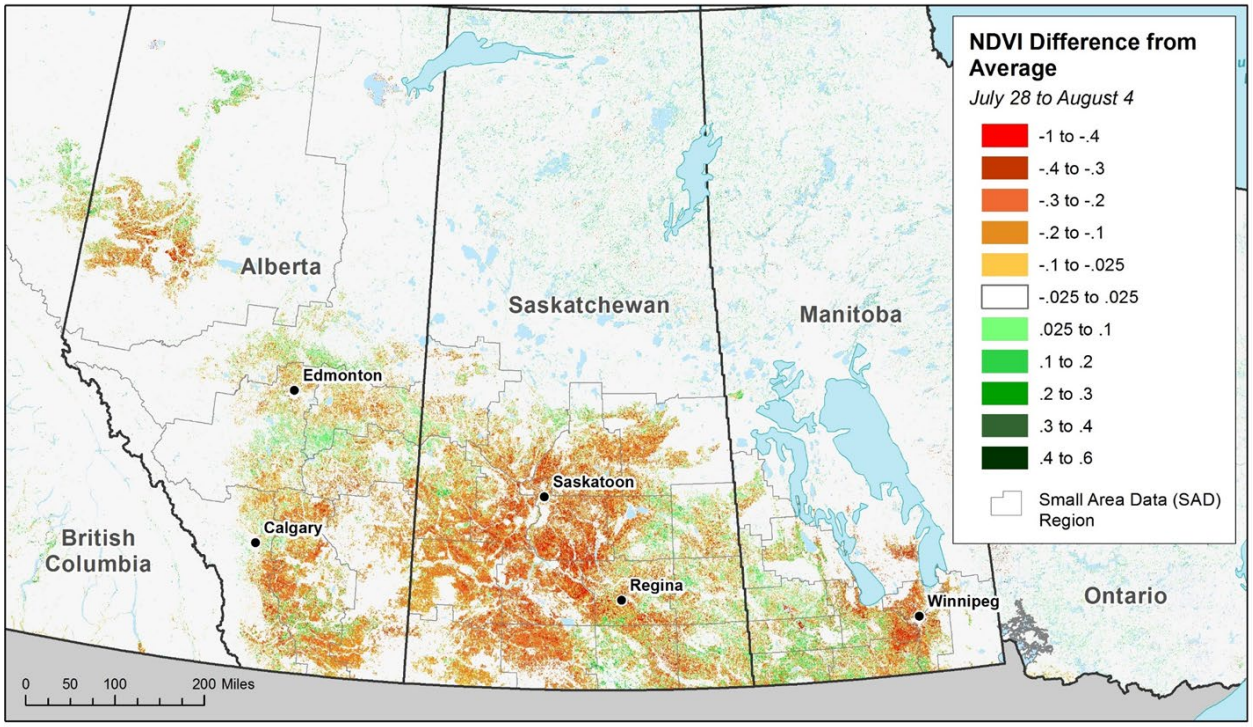
Source: Agriculture and Agri-Foods Canada (AAFC) Climate Services

Figure 5. The total number of days with maximum temperatures above 30ºC, in the Prairie Provinces and British Columbia, April 1 through July 31, 2021. Prolonged exposure to temperatures above 29.5ºC during reproductive stages (i.e., flowering) is known to reduce rapeseed yield. Rapeseed typically flowers in mid- to late-July in the Prairies. The summer 2021 heat wave coincided with an unusually early flowering stage in early July. By the end of the month, much of the region where the crop is grown had already experienced several days to weeks of temperatures above this threshold.

Poor Crop Conditions in the Canadian Prairies



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Sources: USDA/NASA NDVI Anomaly, Global Agricultural Monitoring (GLAM) System; Statistics Canada; Global Food Security-Support Analysis Data project at 30-meter (GFSAD30) Crop Mask 2015

Figure 6. Satellite-derived, Normalized Difference Vegetation Index (NDVI) difference from average map of croplands in the Prairie Provinces at the end of the growing season, July 28 through August 4, 2021. NDVI analysis indicated degraded crop conditions at the end of the MY 2021/22 growing season, resulting from the persistent and widespread drought in the region.

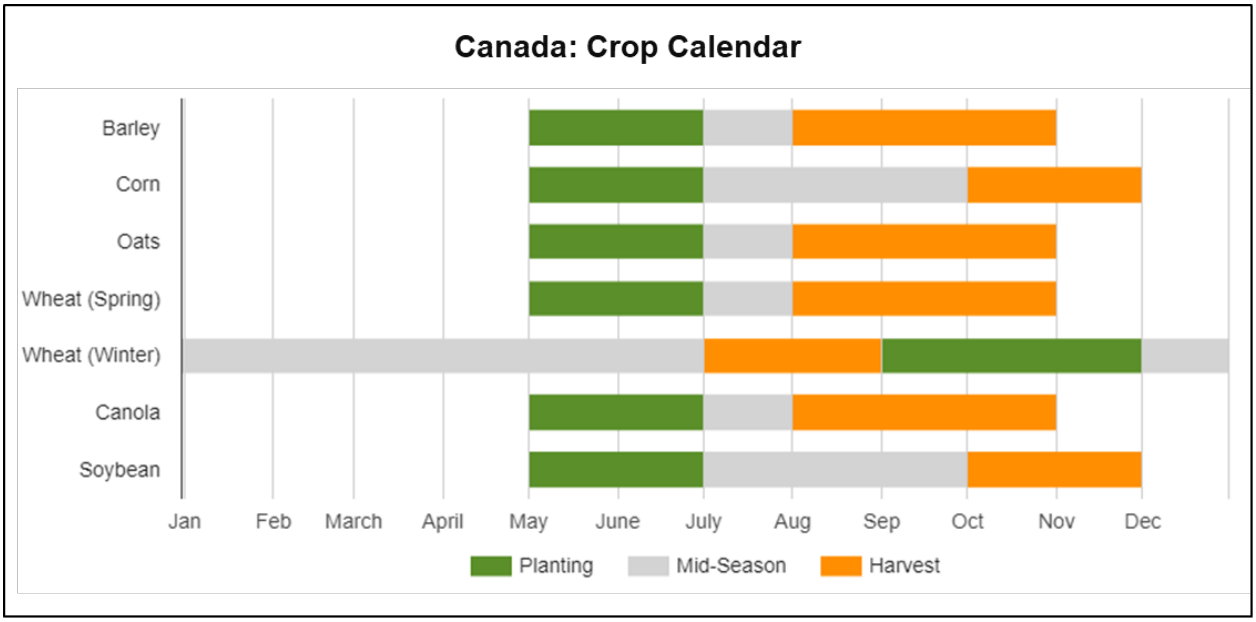


Figure 7. Canadian crop calendar for select crops. Planting is conducted in May and June. Harvest begins in August for grains (winter wheat excluded) and rapeseed, and October for corn and soybeans.

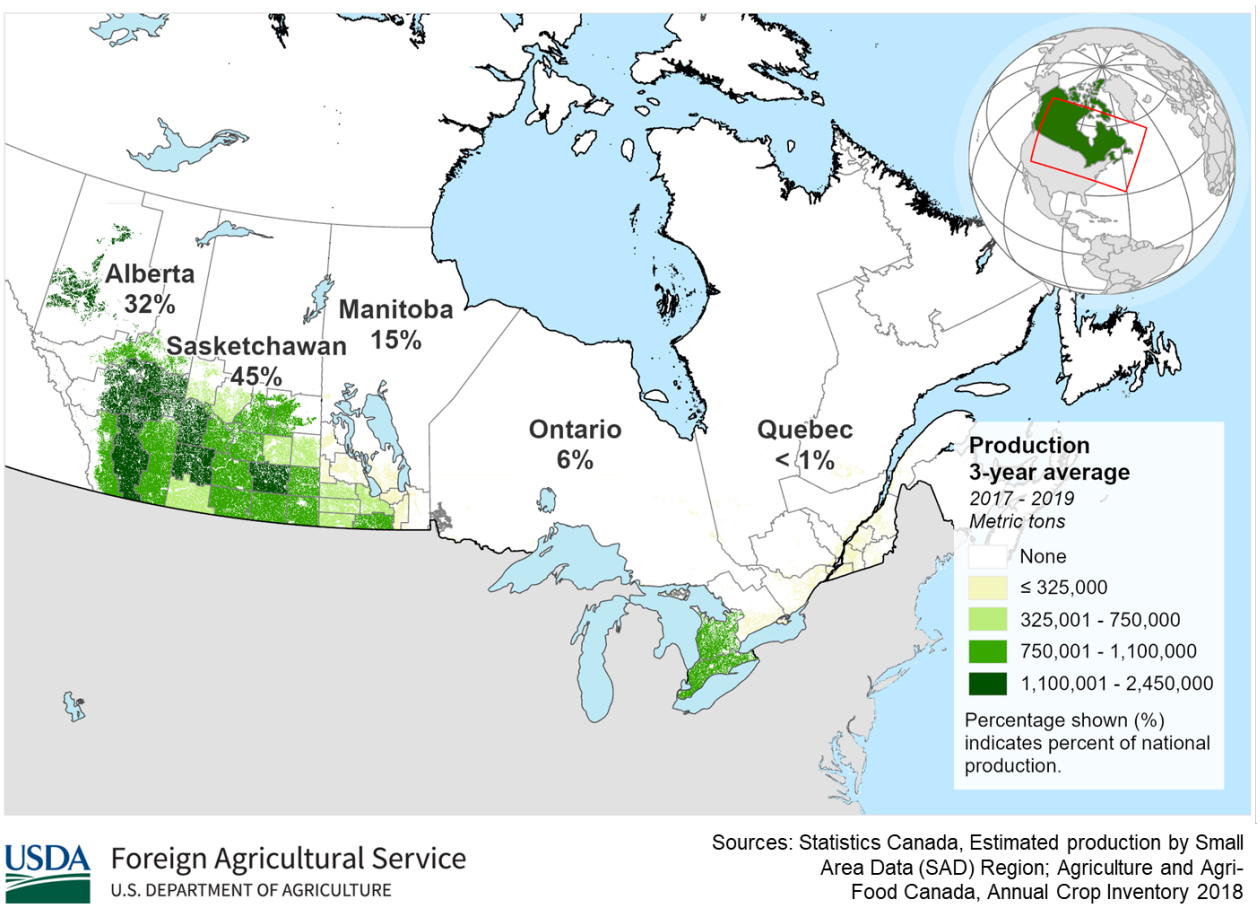
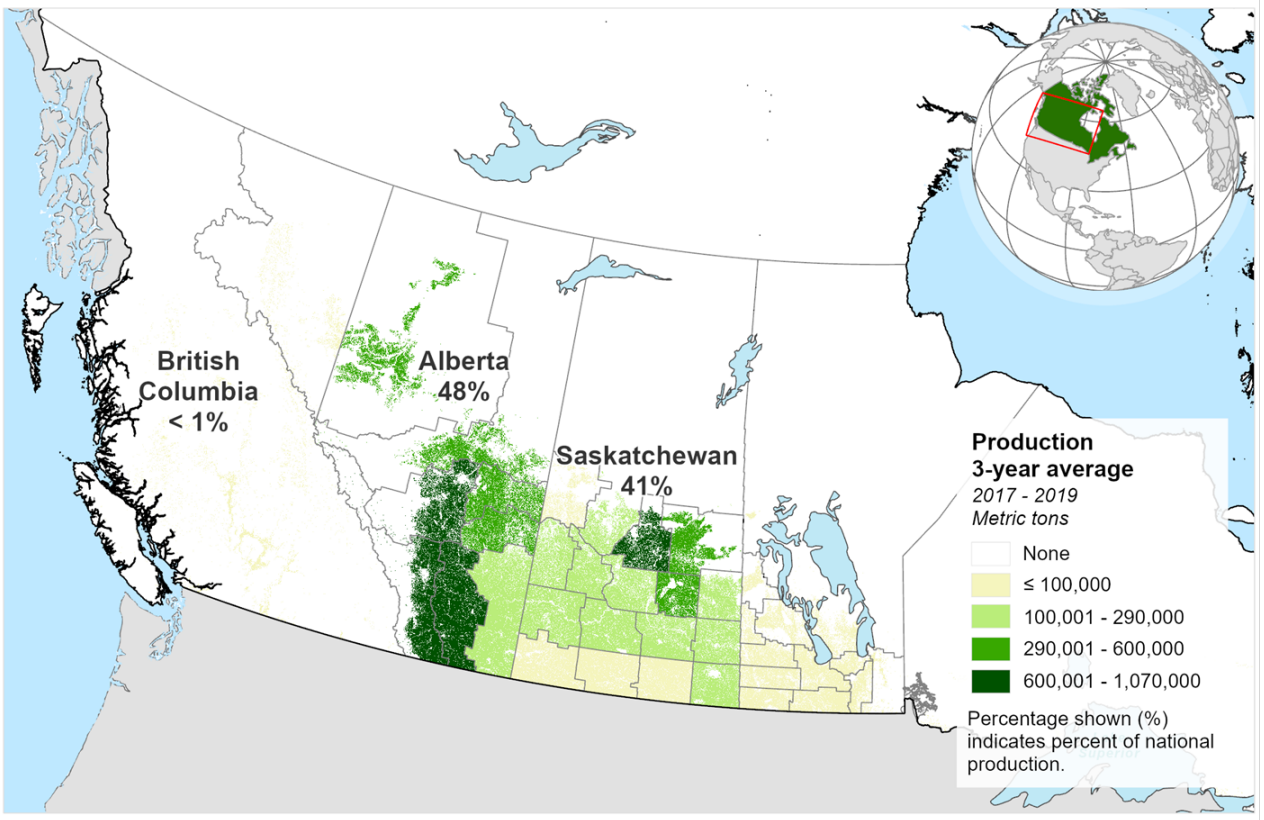


Figure 8. Average total wheat production (2017-2019). Spring and durum wheat are grown in the Prairies, while winter wheat is the variety primarily grown in southern Ontario.

Canada Barley Production



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Sources: Statistics Canada, Estimated production by Small Area Data (SAD) Region; Agriculture and Agri-Food Canada, Annual Crop Inventory 2018

Figure 9. Average barley production (2017-2019). Most barley is grown in Alberta and Saskatchewan, which were subject to intense heat and drought during the summer of 2021.

Canada Oat Production

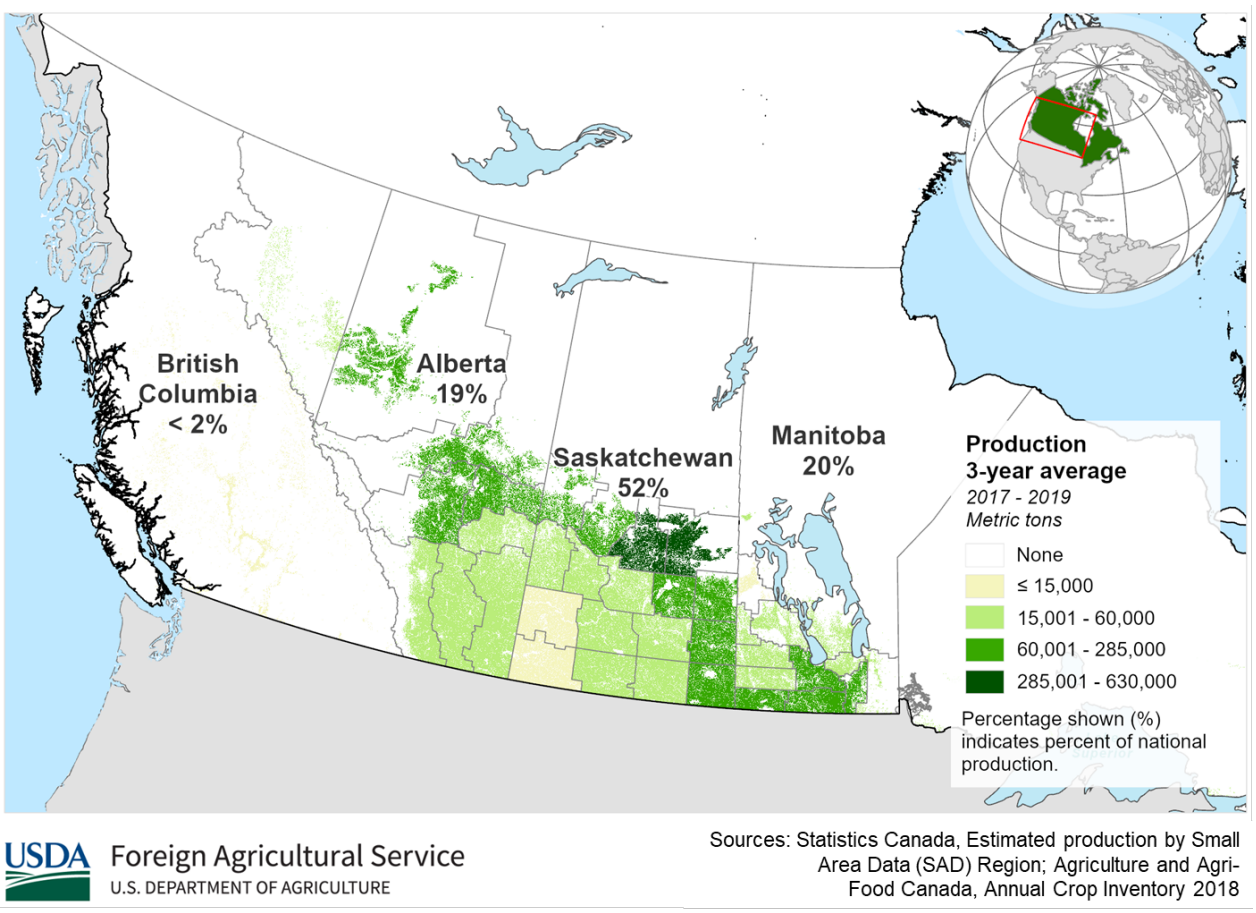


Figure 10. Average oat production (2017-2019). Oats are mainly grown in the Prairie Provinces, which were subject to intense heat and drought during the summer of 2021.

Canada Corn Production

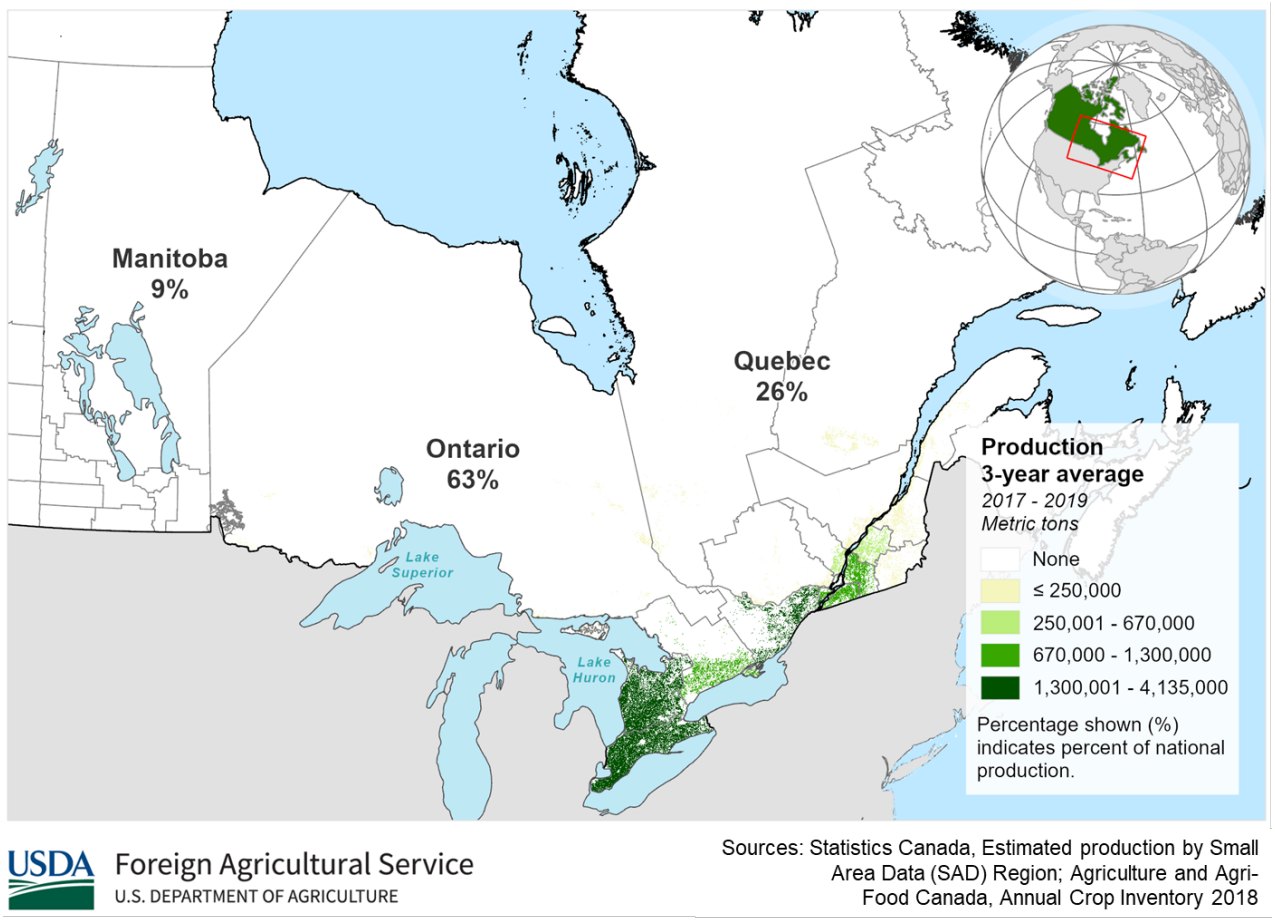
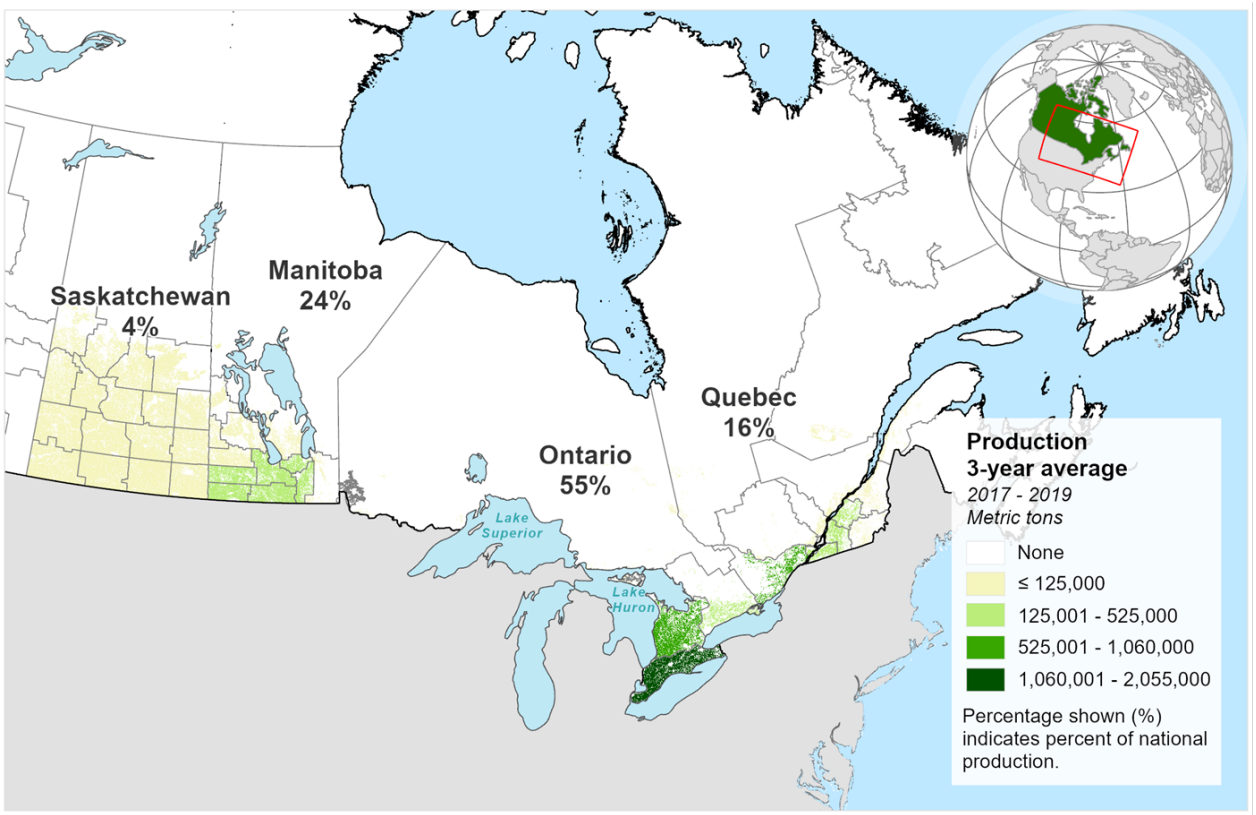


Figure 11. Average corn production (2017-2019). Corn is a later-developing crop, the majority of which is grown in the Central Canadian provinces of Ontario and Quebec. Corn enjoyed ideal conditions in Ontario in 2021.

Canada Soybean Production



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Sources: Statistics Canada, Estimated production by Small Area Data (SAD) Region; Agriculture and Agri-Food Canada, Annual Crop Inventory 2018

Figure 12. Average soybean production (2017-2019). Like corn, soybeans are a later-developing crop, the majority of which is grown in Ontario, Manitoba, and Quebec. Soybeans enjoyed ideal conditions in Ontario, while struggling under drought in Manitoba, in 2021.

Canada Rapeseed Production

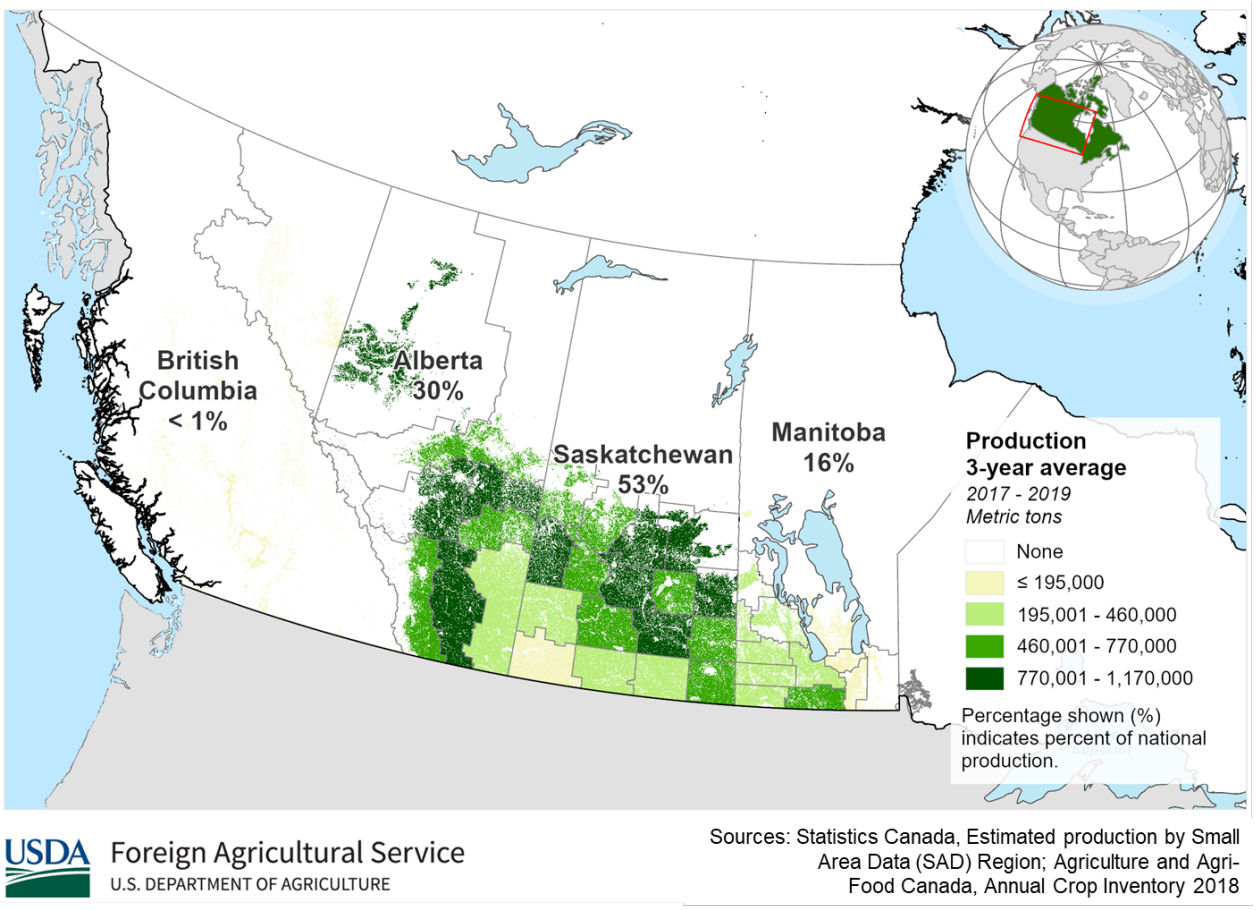

Figure 13. Average rapeseed production (2017-2019). Rapeseed is mainly grown in the Prairie Provinces, which were subject to intense heat and drought during the summer of 2021.

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