



Alberta 2023 Crop Season in Review

Overview

After a cold start to the growing season, seeding progressed quickly and was virtually complete by May 30. Limited rainfall in May and June depleted soil moisture across the province, but soil moisture in late June and July brought heavy rain to the north half of the province while the south remained dry. Preliminary yield estimates on July 25 indicated dryland yields below averages, but irrigated yields in the South were above average. Harvest began in late August, and by September 5, progress varied across regions. Significant rainfall by late August improved yield expectations, especially in the North East, North West, and eastern Peace regions. By September 19, major crop harvest reached 65 per cent, with increased yield expectations. The final crop report on October 17 highlighted a rapid completion of harvest, with 99 per cent of crops harvested. Dryland yield index estimates improved, with final provincial yield estimates for various crops meeting or exceeding 5-year averages.

Seeding

The 2023 growing season began with cold nights and slow-melting snow that resulted in some delays to spring field operations. By May 2, the province was 3 per cent complete seeding (behind the 5-year average of 11 per cent) with the most progress observed in the South Region at 7 per cent complete (behind the 5-year average of 32 per cent).

Spring weather conditions resulted in some erosion events, most of it with very light to no damage. The South experienced moderate erosion from runoff in 31 per cent of the region, while wind also caused moderate damage to 31 per cent of the South Region and 15 per cent of the North East Region. Soil moisture ratings were mixed across the province for both surface as well as sub-surface. At the beginning of the growing season, 17 (9) per cent (5-year average) of the surface moisture was rated as poor, 31 (23) per cent fair, 42 (45) per cent good, 10 (20) per cent excellent and 1 (5) per cent excess surface soil moisture. Sub-surface soil moisture ratings across the province were rated at (5-year average) 15 (12) per cent poor, 40 (23) per cent fair, 37 (43) per cent good, 7 (19) per cent excellent and less than one (3) per cent excessive.

By May 16, seeding had progressed to 55 per cent complete with the help of hot and dry weather. Provincial seeding progress was only 3 per cent behind the 5-year average and 5 per cent behind the 10-year average. Occasional light showers helped early emergence to 15 per cent, 3 per cent ahead of the 5-year average.

By May 30, seeding of major crops had made fast progress, with 97 per cent of seeding completed, slightly ahead of the 5-year and 10-year averages. The South was virtually complete, while the Peace Region had the most left with 6 per cent unseeded. Emergence of major crops was ahead of the 5-year average at 76 per cent, with dry peas and spring wheat furthest along.

Growing Conditions

The June 13 report indicated light and sporadic showers that failed to alleviate the dry conditions. Hot and dry temperatures persisted, depleting soil moisture reserves and impacting crop conditions. Provincial crop conditions were rated at 43 per cent good to excellent, significantly below the 5-year and 10-year averages of 76 and 74 per cent, respectively. The Peace Region was relatively better off, thanks to adequate rain, with 72 per cent of crops in good to excellent condition. The rest of the province was experiencing low ratings, similar to 2009 and 2015. Crop growth varied by region, with some crops showing signs of stress due to the lack of moisture. Heavy precipitation was considered necessary to improve soil moisture conditions.

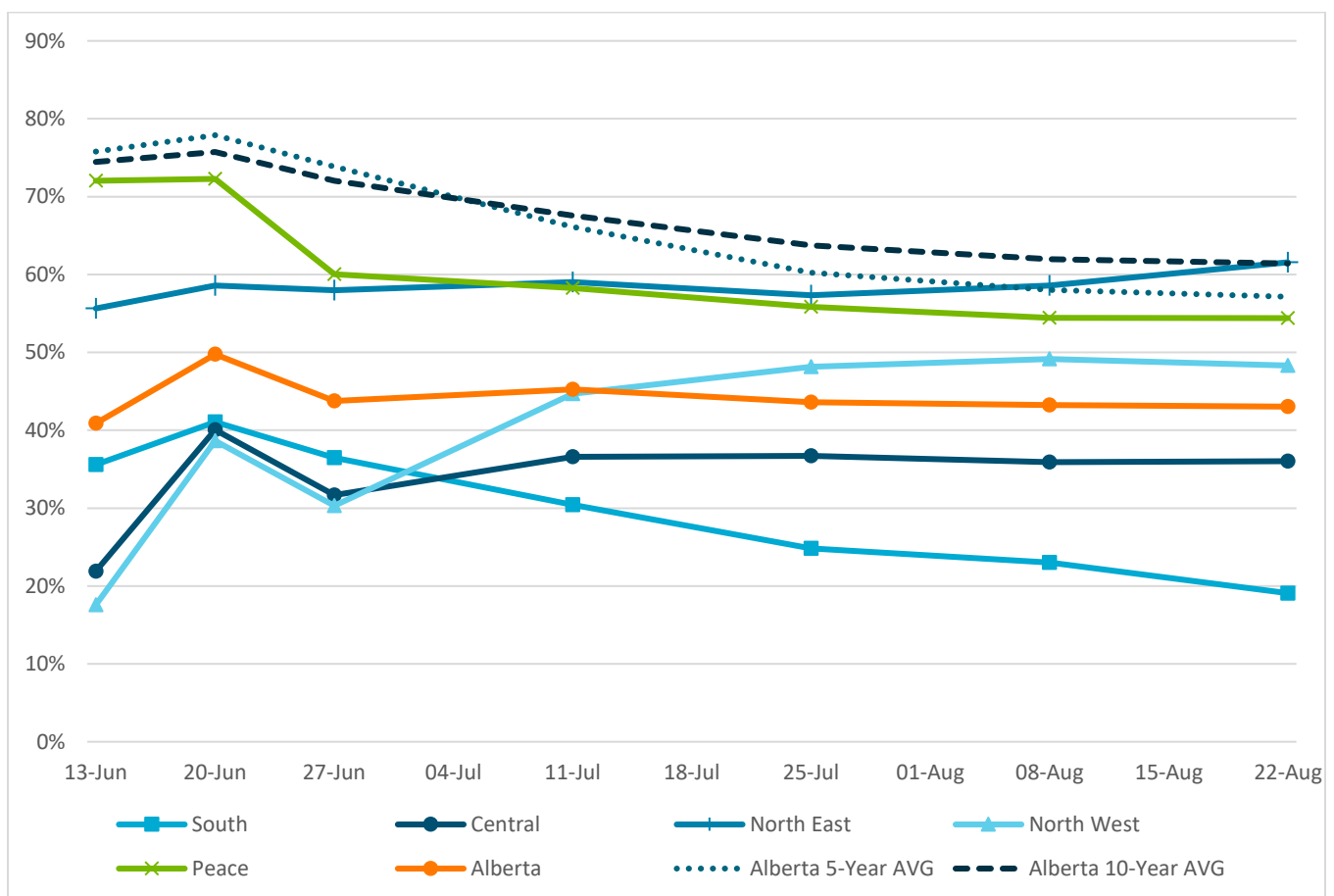
Towards the end of June, a patchwork of rain fell across Alberta, increasing crop variability but again failing to bring substantial relief. While thunderstorm activity was widespread and left concerns of flooding in the North West Region, many areas remained dry. Provincial crop conditions for all crops were reported at 45 per cent good to excellent, still 29 per cent below the 5-year average. The Peace Region continued to lead with 60 per cent of all crops in good to excellent condition while the South Region reported the lowest at 42 per cent. Spring cereals were flowering, and most broadleaf crops were in the flowering or podding stage. Specifically, canola and peas were ahead of their 5-year averages for flowering.

Into July, parts of the province continued to receive much-needed rains, with some areas in the North West, Peace, North East, and Central regions receiving substantial precipitation. However, the South Region continued to experience limited rainfall. As of July 11, provincial crop conditions remained at 45 per cent good to excellent but were still well below the 5- and 10-year averages of 66 and 68 per cent, respectively. The Peace and North East regions had the best crop conditions at 58 and 59 per cent good to excellent, respectively, while the South region was at 35 per cent.

As of July 25, Alberta continued to see the effect of varied weather across the province. The northern regions received significant rainfall, leading to moisture-related issues such as crop damage and lodging. In contrast, the South and Central Regions faced ongoing dry conditions, leading to concerns of crop stress.

Preliminary yield estimates on July 25, indicated that dryland crop yields were below the 5-year and 10-year averages, with the provincial dryland 5-year yield index at 85, signifying a 15 per cent reduction from the normal 5-year yield average. However, irrigated yields in the South region were near or above the 5-year and 10-year averages.

Figure 1: 2023 Major Crop Conditions Rated Good to Excellent



Source: Alberta Crop Report Survey, (AGI and AFSC)

Over the rest of July and into August, precipitation varied across the province, with some regions experiencing above-average rainfall, while others, particularly the South and Central regions, continued to face dry conditions. Crop maturity was on track, with spring cereals reaching the early dough stage and 89 per cent of broadleaves were podding.

As of August 8, provincial crop conditions remained stable at 43 per cent good to excellent. Regionally, the North East and North West Regions saw a slight increase in good to excellent conditions, while the South, Central, and Peace Regions

reported decreases. Preliminary yield estimates for most crops were below both the 5-year and 10-year averages, with the provincial major crop yield index estimates at 85 per cent compared of the 5-year average. Barley and oats were exceptions, showing yield increases since the previous report week.

Harvest

Harvest progress on August 22 across the province averaged 15 per cent of all crops and 11 per cent of major crops. Dryland crop yield estimates remained steady, but below average. By August 29, a significant shift was noted as more rainfall was experienced across the province, particularly in the North East, North West, and eastern Peace regions. These areas reported improved yield expectations and harvest progress, moving closer to long-term averages.

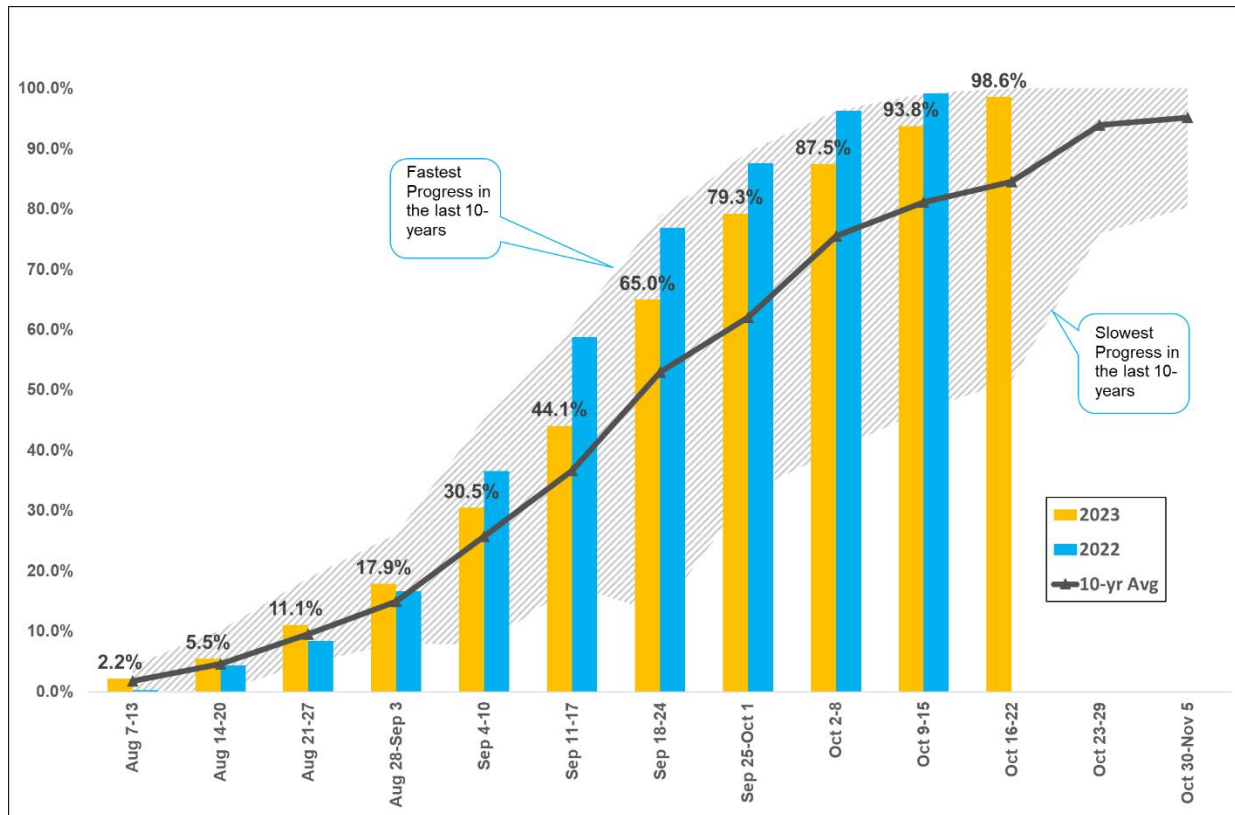
By September 5 harvest had picked up, with rapid progress in regions where dry conditions prevailed, notably the South where 71 per cent of crops had been combined, ahead of the 5-year average of 51 per cent. Progress was also notable in the Central and Peace Regions at 31 and 24 per cent, respectively. Winter wheat, fall rye, dry peas, and lentils were mostly complete, but other major crops still had over 50 per cent left to combine. Crops in wet areas were reported to be delayed in maturity showing green pods and varied maturity.

Two weeks later, on September 19, major crop harvest had reached 65 per cent, with most regions reporting near completion of pulse and spring cereal harvests. Yield expectations increased again, particularly in barley (averaging 59.9 bushels per acre), canola (averaging 35.3 bushels per acre), and spring wheat (averaging 40.8 bushels per acre). Quality estimates also improved, with more hard red spring wheat (62 per cent) and durum (54 per cent) grading top quality.

Favourable weather conditions continued, and harvest reached 88 per cent complete in Alberta by October 3, ahead of the 5-year and 10-year averages of 75 and 77 per cent, respectively. The largest progress since the previous week was seen in the Central and the North West Region which progressed 11 and 14 per cent, respectively.

Due to favourable harvest conditions, the final crop report for 2023 highlighted the rapid completion of harvest, with 99 per cent of crops harvested as of October 17. Significant improvements were seen in dryland provincial yield index estimates from 84.7 per cent of the 5-year average yield index on August 8 to 95.7 per cent on October 17. The final provincial yield estimates for spring wheat were 43.4 bushels per acre, for barley 61.4 bushels per acre, 82 bushels per acre for oats, for canola 37.4 bushels per acre as 35.2 bushels an acre for dry peas. Quality estimates were as the following (5-year average in parentheses) 66 (46) per cent of the hard red spring wheat was expected to grade 1 CW, 55 (60) per cent of durum, 43 (28) per cent of oats, 82 (85) per cent of canola, and 18 (23) per cent of dry peas. As well, 26 (32) per cent of barley was expected to grade malt and 63 (54) per cent 1 CW.

Alberta Harvest Progress, 2023 versus 2022 and 10-Year (2013-2022) Average



Source: Alberta Crop Report Survey, (AGI and AFSC)

Insects and Crop Disease

Grasshoppers and flea beetles were above the 5-year average presence near the end of May as many areas experienced hot weather. Grasshoppers and flea beetles were mostly present in the South Region while gophers were present in all regions. By the middle of June, grasshoppers and flea beetles' presence increased as grasshoppers and flea beetles were over threshold in 24 and 21 per cent of the South Region, respectively. By the middle of July, flea beetle presence had declined but grasshoppers, while down were still quite present in the South and parts of the Central and North West. Grasshoppers were over threshold in areas of the Peace, Central and South Regions by August.

Alberta Crop Production, 2023 (Statistics Canada Estimates)

On December 4, 2023, Statistics Canada released its November estimates of crop production for 2023. Production of selected field crops (including forages) in Alberta was at 28.9 million tonnes, down 15.8 per cent from 2022, as well as 8.8 per cent lower than the 10-year (2013-2022) average (See Table 1). Excluding forages, field crops production stood at 22.6 million tonnes, a decrease of 15.4 per cent from 2022, and 4.8 per cent below than the 10-year average. The decline in production was mostly attributed to lower yields in 2023 (see Table 2). Total seeded area of principal field crops was stable from 2022, while total harvested area decreased 1.9 per cent.

2023 Production by Crop Type

In 2023, total production of spring wheat decreased 15.3 per cent to 8.4 million tonnes. This was due to an 18.9 per cent decrease in yield to 47.1 bushels per acre even though harvested acres increased by 4.4 per cent.

For durum wheat, production decreased 40.7 per cent to 708.9 thousand tonnes. The decrease was due to a 33.5 per cent decline in yield to 27.2 bushels per acre as well as reduced harvested acres to 956,3003 acres (down 10.9 per cent).

Winter wheat production fell 6.5 per cent to 173 thousand tonnes. This was a result of a 17.3 per cent decline in yield to 48.9 bushels per acre which offset the increase in harvested acres of 13 per cent to 130,000 acres.

Overall, all wheat production declined, down 17.8 per cent to 9.3 million tonnes, which is 5 per cent below the 10-year average. Yields were 44.7 bushels per acre (down 33.5 per cent), which more than offset the 2.4 per cent increase in harvested acres (7.7 million acres).

Total barley production decreased 12.3 per cent to 4.7 million tonnes driven by a 17.1 per cent decrease in yield to 62.9 bushels per acre. Though year over year production was down, 2023 was 3.7 per cent above the 10-year average. Harvested acres increased by 5.8 per cent to 3.4 million acres.

Total oat production fell 39.1 per cent to 642,115 tonnes, but only 4.3 per cent below the 10-year average. This was attributed to a 6.1 per cent decrease in yield to 85.4 bushels per acre as well as a 35.2 per cent decrease in harvested acres to 487,700 acres.

Total canola production was down 3.5 per cent from 2022 to 5.4 million tonnes and was 5.6 per cent from the 10-year average. While canola yields were stable year-over-year at 37.9 bushels per acre, harvest acres declined 3.1 per cent to 6.3 million acres.

Dry beans production increased 51.5 per cent to 75,271 tonnes, the second highest production year in 10 years. Driving this gain was a 28.7 per cent increase in harvested acres to 56,100 acres and a higher yield at 49.3 bushels per acre (up 17.9 per cent).

For lentils, production fell 53.2 per cent to 156,391 tonnes, and was 32.8 per cent below the 10-year average. Lower production was attributed to a 44.4 per cent decrease in yield to 12.4 bushels per acre and a 15.9 per cent decrease in harvested acres to 462,000 acres.

Production of dry peas were down 29.3 per cent to 1.1 million tonnes and were 31 per cent below the 10-year average. The decline was the result of a 24.2 per cent decline in yield to 33.2 bushel per acre and 6.9 per cent decrease in harvested acres to 1.2 million acres.

Sugar beets production decreased 14.0 per cent to 867,300 tonnes, though still 16.8 per cent above the 10-year average. The lower production following a record year was due to a 25.7 per cent decrease in harvested acres to 23,700 acres, while yields increased 15.7 per cent to 40.3 tons per acre.

Forage production was down 18.1 per cent from 2022 to 6.2 million tonnes and 20.8 per cent below the 10-year average. This was attributed to a lower production of tame hay, despite fodder corn production increasing.

Tame hay production fell to four million tonnes, down 30.2 per cent from 2022 and 35.6 per cent below the 10-year average. This was due to a 25.5 per cent decrease in yield to 1.2 tons per acre, as well as a 6.4 per cent decline in harvested area to 3.6 million acres.

For fodder corn, production increased 19.2 per cent to 2.2 million tonnes, 35.0 per cent higher than the 10-year average. This was due to a 28.4 per cent increase in harvested acres to 140,000 acres, while yield remained stable at 18.8 tons per acre.

Contact

Agriculture and Irrigation
Intergovernmental and Trade Relations Branch
Statistics and Data Development Section

Brooklyn Wong
Crop Statistician
Phone: 780-422-2887
Email: brooklyn.wong@gov.ab.ca

Our thanks to the Alberta Association of Agricultural Fieldmen and AFSC staff for their partnership and contribution to the Alberta Crop Reporting Program. Agriculture and Irrigation compiles the climate map.

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Table 1: Alberta Crop Production ('000 tonnes)									
Crops	2018	2019	2020	2021	2022r	2023p	10-year Average	% change	
								23 vs 22	23 vs Avg
Winter Wheat	100.4	103.1	160.4	178.0	185.1	173.0	203.3	-6.5%	-14.9%
Spring Wheat	8,771.6	9,512.8	9,555.9	5,597.9	9,963.7	8,442.8	8,611.3	-15.3%	-2.0%
Durum Wheat	1,134.1	647.3	1,324.7	598.9	1,194.5	708.9	996.2	-40.7%	-28.8%
All Wheat	10,006.1	10,263.2	11,041.0	6,374.8	11,343.3	9,324.7	9,810.7	-17.8%	-5.0%
Oats	700.1	834.8	802.0	546.7	1,054.7	642.1	671.0	-39.1%	-4.3%
Barley	3,996.3	4,955.2	5,283.0	3,647.9	5,380.7	4,721.1	4,553.3	-12.3%	3.7%
All Rye	30.0	26.8	107.4	87.1	91.2	68.7*	53.6	n/a	n/a
Mixed Grains	x	x	68.0	64.1	61.0	44.2	36.9	-27.5%	20.0%
Flaxseed	60.5	81.5	78.6	51.9	83.2	21.9	73.4	-73.7%	-70.1%
Canola	5,870.6	5,320.1	5,212.1	4,341.0	5,591.7	5,394.1	5,713.7	-3.5%	-5.6%
Corn for Grain	118.3	63.3	108.6	162.1	44.0	131.0	99.2	197.6%	32.0%
Dry Beans	72.8	65.3	73.0	95.7	49.7	75.3	64.2	51.5%	17.3%
Faba Beans	43.4	38.5	41.0	37.1	54.8	70.4	56.0	28.5%	25.7%
Dry Peas	1,608.4	1,685.9	1,799.2	894.6	1,555.3	1,098.9	1,591.7	-29.3%	-31.0%
Lentils	199.6	167.6	370.6	169.6	334.2	156.4	232.9	-53.2%	-32.8%
Mustard Seed	36.7	27.6	36.5	14.7	45.9	37.0	39.0	-19.3%	-5.2%
Triticale	32.0	29.2	21.6	19.4	23.4	23.7	22.8	1.3%	3.9%
Hemp	x	x	15.3	14.1	15.9	7.8	n/a	-50.7%	n/a
Chickpeas	34.6	27.0	37.2	17.2	15.2	18.4	n/a	20.5%	n/a
Sugar Beets	854.5	520.7	833.1	942.4	1,008.8	867.3	742.5	-14.0%	16.8%
All Crops	23,663.9	24,106.7	25,928.2	17,480.3	26,753.1	22,634.3	23,760.8	-15.4%	-4.7%
Tame Hay	6,035.7	6,674.7	6,379.3	3,856.1	5,748.4	4,014.1	6,231.4	-30.2%	-35.6%
Fodder Corn	1,660.4	1,687.6	2,018.2	1,679.6	1,866.4	2,225.3	1,648.3	19.2%	35.0%
All Forages	7,696.1	8,362.3	8,397.5	5,535.7	7,614.8	6,239.4	7,879.7	-18.1%	-20.8%
Total	31,360.0	32,469.0	34,325.7	23,016.0	34,367.9	28,873.7	31,640.5	-16.0%	-8.7%

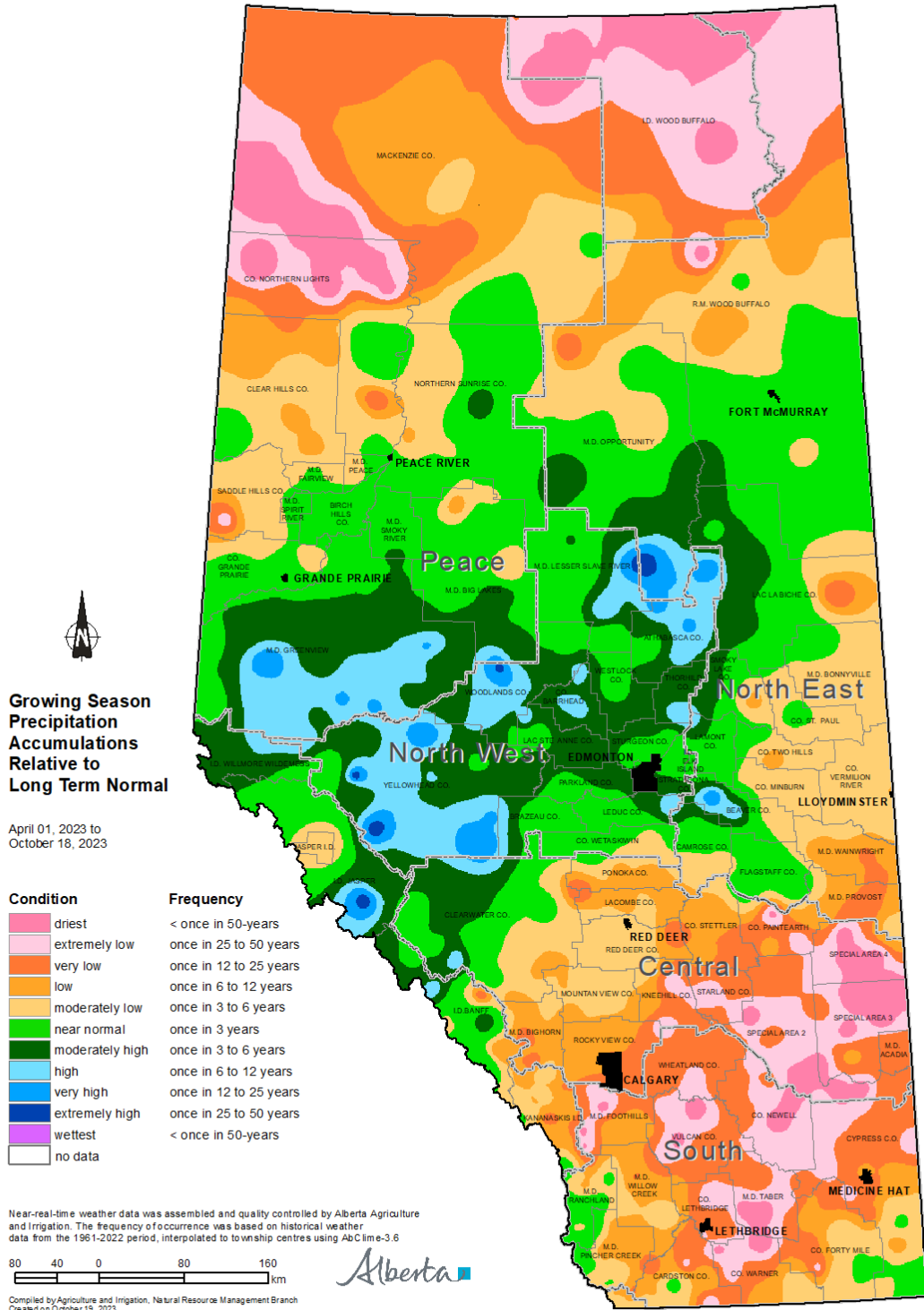
p - Preliminary r - Revised x - Confidential - Not available 10-year average refers to 2013-2022 *rye, fall remaining
Source: Statistics Canada Table 32-10-0359-01 Prepared by: Alberta Agriculture and Irrigation, Statistics and Data Development Section

Table 2: Alberta Crop Area and Yield									
Crops	2022r	2023p	2022r	2023p	2022r	2023p	10-year	Yield % change	
	Seeded	Seeded	Harvested	Harvested	Yield	Yield	Avg Yield	23 vs 22	23 vs Avg
	('000 acres)		('000 acres)		(bu/acre)				
Winter Wheat	125.5	139.2	115.0	130.0	59.1	48.9	58.0	-17.3%	-15.6%
Spring Wheat	6,395.5	6,804.9	6,303.4	6,582.8	58.1	47.1	53.0	-18.9%	-11.1%
Durum Wheat	1,086.8	996.8	1,073.1	956.3	40.9	27.2	40.2	-33.5%	-32.4%
All Wheat	7,634.3	7,954.6	7,491.5	7,669.1	55.6	44.7	51.4	-19.6%	-13.0%
Oats	943.4	698.7	752.6	487.7	90.9	85.4	84.8	-6.1%	0.7%
Barley	3,552.9	3,835.0	3,257.9	3,447.3	75.9	62.9	69.4	-17.1%	-9.4%
All Rye	99.2	60.7*	63.9	52.4*	56.2	51.6*	50.7	x	x
Mixed Grains	138.6	167.9	53.1	45.9	56.3	47.2	50.6	-16.2%	-6.7%
Flaxseed	128.6	46.9	128.3	46.2	25.5	18.7	28.2	-26.7%	-33.6%
Canola	6,521.0	6,362.8	6,476.3	6,275.4	38.1	37.9	39.8	-0.5%	-4.7%
Corn for Grain	14.1	37.6	12.5	34.4	138.2	150.0	129.4	8.5%	15.9%
Dry Beans	49.8	56.1	43.6	56.1	41.8	49.3	44.9	17.9%	9.8%
Faba Beans	42.6	47.3	42.3	47.1	47.5	55.0	41.1	15.8%	34.0%
Dry Peas	1,323.8	1,261.2	1,304.6	1,214.6	43.8	33.2	39.2	-24.2%	-15.2%
Lentils	550.2	468.1	549.4	462.2	22.4	12.4	25.4	-44.4%	-51.0%
Mustard Seed	143.5	162.3	141.4	154.3	14.3	10.6	16.0	-26.2%	-34.0%
Triticale	49.7	50.8	22.1	19.7	41.6	47.3	50.8	13.7%	-6.9%
					(pounds/acre)				
Hemp	31.3	20.0	26.7	19.9	1,314.0	870.0	n/a	-33.8%	n/a
Chickpeas	31.1	43.3	31.1	43.3	1,083.0	936.0	n/a	-13.6%	n/a
					(tons/acre)				
Sugar Beets	33.1	23.8	31.9	23.7	34.9	40.3	32.5	15.6%	24.0%
Tame Hay	4,130.4	4,005.3	3,807.9	3,565.7	1.7	1.2	1.7	-27.7%	-29.4%
Fodder Corn	174.4	219.2	109.2	140.2	18.8	18.8	17.0	-0.1%	10.8%
Total	25,592.0	25,460.9	24,346.3	23,752.8	---	---	---	---	---

p - Preliminary r - Revised x - Confidential --- Not applicable 10-year Avg Yield refers to 2013-2022 average yield *rye, fall remaining
Source: Statistics Canada Table 32-10-0359-01 Prepared by: Alberta Agriculture and Irrigation, Statistics and Data Development Section



Precipitation Map for the 2023 Crop Season



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