Canadian Grain Commission | Commission canadienne des grains

Barley Production and Quality of Western Canadian Malting Barley

2025

Annual Barley Harvest Report

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Summary

Production

In 2025, barley production in western Canada is estimated at 9.448 million tonnes. This is approximately 20% higher than in 2024, and 11% higher than the 10-year average. Cooler than normal temperatures and near-average to above-average precipitation in July during heading and grain filling contributed to a higher than initially anticipated barley yield (79.9 bushels per acre) and higher than anticipated barley production in 2025.

Top malting barley varieties

In 2025, AAC Synergy was the most widely grown malting barley variety in western Canada. Its seeded area increased slightly from the previous year and accounted for 35.6% of the total malting barley acreage. By contrast, the area seeded with CDC Copeland declined substantially to 13.5% from 17.4% in 2024. Based on seeded area, other popular varieties included AAC Connect (11.7%) and CDC Fraser (8.9%). CDC Churchill also gained popularity, with its seeded area rising to 9.6% in 2025 from 7.1% in 2024. Areas seeded with newer varieties, such as Bill Coors 100, CDC Goldstar, and SY Stanza, were relatively small, although they did increase slightly compared with 2024.

Growing conditions

Warm and dry conditions early in the 2025 growing season, followed by timely rainfall in late May and early June, allowed for rapid seeding of barley and gave the crop an excellent start. Cooler than normal temperatures combined with adequate precipitation in July created conditions that enhanced both the yield and quality of barley harvested this year.

Malting barley quality

Barley selected for malting in 2025 demonstrated excellent grain quality compared with 2024 and long-term data. The average protein content (11.8%) was below the 2024 average (12.2%) and the 10-year average (12.0%), reflecting a shift toward starch accumulation. This is also evident from the starch content, which was 2 to 3% higher than last year. Gelatinization temperature was 2 to 3°C lower than in 2024 and this, along with higher starch, was favourable for malting. Test weight was 67.9 kg/hL, well above the 2024 average (64.6 kg/hL) and the 10-year average (66.6 kg/hL). Kernel traits were particularly strong, with an average 1000-kernel weight of 48.1 g and an average kernel plumpness of 96%, significantly above the 2024 average (87.3%) and the 10-year average (93.4%). Overall, the 2025 barley crop combined lower protein with heavier, plumper kernels and higher starch, underscoring its excellent malting potential and superior grain quality.

Malting performance

The 2025 barley crop demonstrated outstanding malting performance, driven by its higher test weight, greater kernel plumpness, and heavier kernels. Although these traits required a slightly longer steeping process to achieve full grain modification, the result was a well-modified malt with high friability, strong enzyme activity (diastatic power and α-amylase), and ample levels of soluble proteins and free amino nitrogen (FAN). The wort exhibited low β-glucan concentrations and excellent viscosity values, further confirming its high processing quality. The larger, thicker kernels also contributed to elevated malt extract levels. Overall, the combination of enhanced physical grain traits and favorable biochemical properties underscores the excellent quality of the 2025 crop for malting and brewing applications.

Growing and harvest conditions in 2025

The beginning of the 2025 growing season across western Canada was marked by warm temperatures (Figure 1.1 and Figure 1.2) and dry conditions (Figure 1.3 and Figure1.4), and this allowed seeding to progress rapidly. Producers in Alberta, Saskatchewan and Manitoba were able to complete seeding ahead of schedule. By early June, 85 to 90% of seeding was completed, a significantly higher percentage than the five-year average. Although early May was dry, rain in late May and early June helped bring levels of seasonal precipitation closer to normal in many areas. However, windy conditions contributed to declining topsoil moisture, and some regions, particularly southern Alberta and western Saskatchewan, continued to experience moisture deficits.

In July, much of the Prairies experienced cooler than normal temperatures (Figure 1.5) and near-average to above-average precipitation (Figure 1.7). These conditions provided relief to crops during the critical stages of heading and grain filling, which helped stabilize yield potential, especially in the central and northern regions. Rainy conditions developed in mid-July and persisted in some areas through mid-August, raising concerns about crop damage due to lodging and pre-germination (Figure 1.8).

Fortunately, by mid-August, the weather shifted to drier and warmer conditions across the western Prairies (Figure 1.6), creating an ideal environment for crop ripening. This improvement helped mitigate earlier risks and supported strong grain quality. In summary, while early-season dryness posed challenges, the favorable July weather and dry conditions at the end of the season allowed barley crops to recover and perform well. The result was a larger and better-quality crop than initially expected.

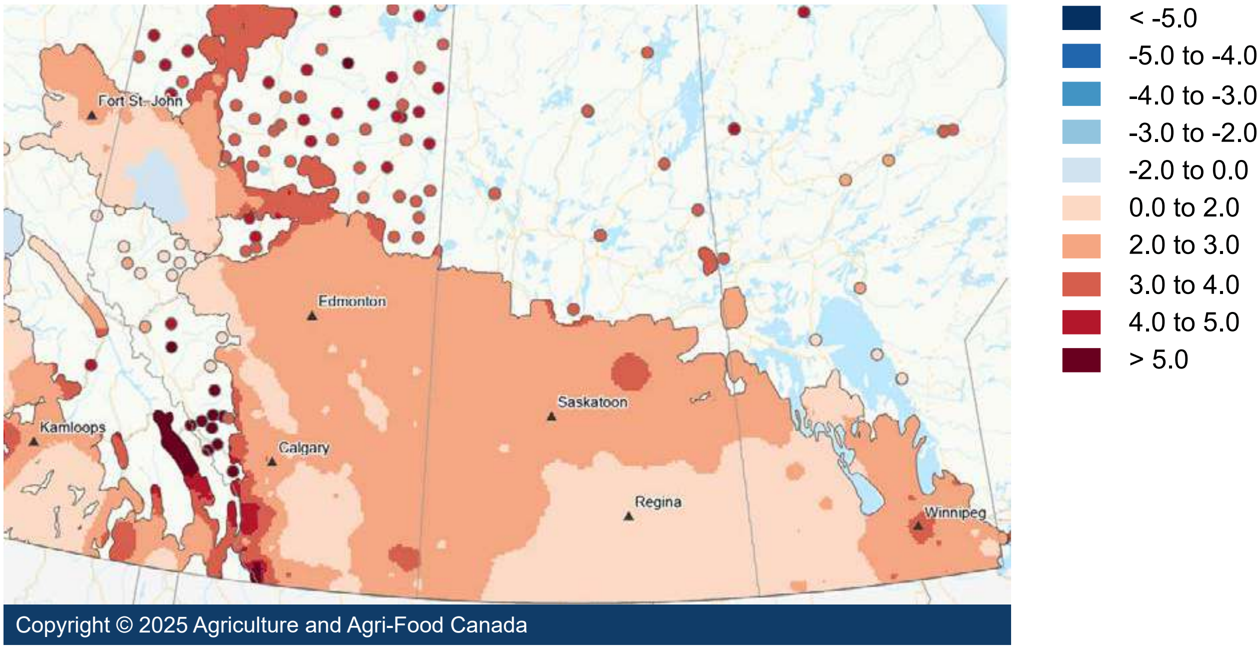


Figure 1.1 Mean temperature difference from normal in May 2025.

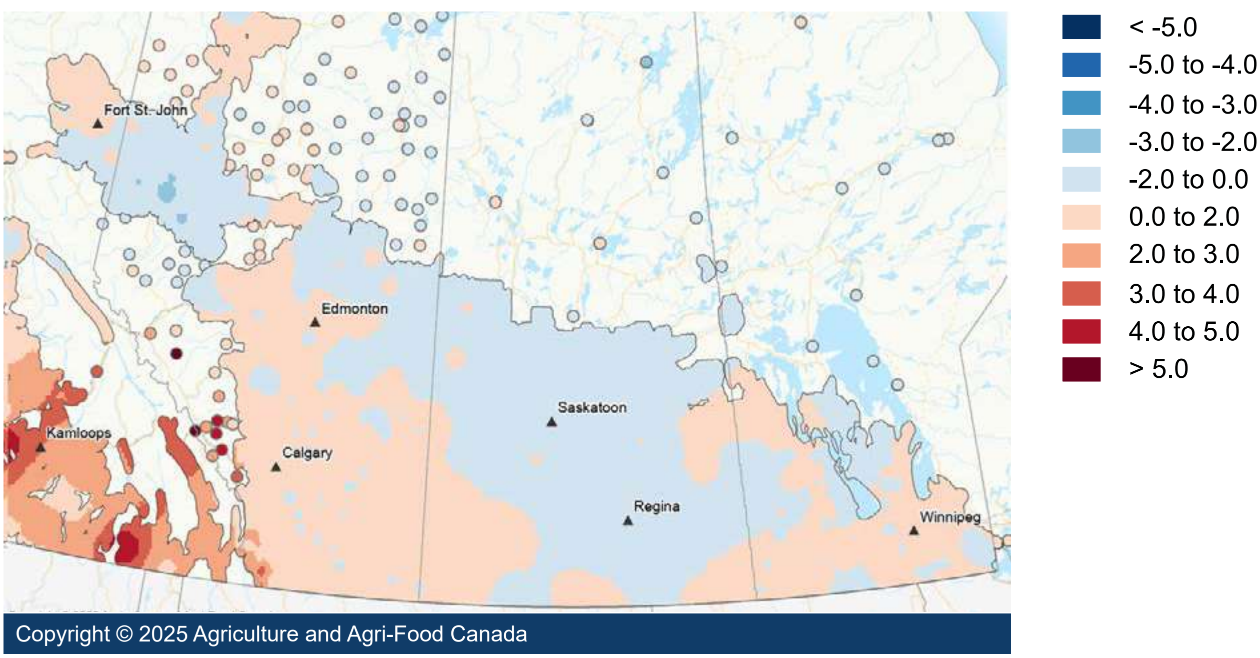


Figure 1.2 Mean temperature difference from normal in June 2025.

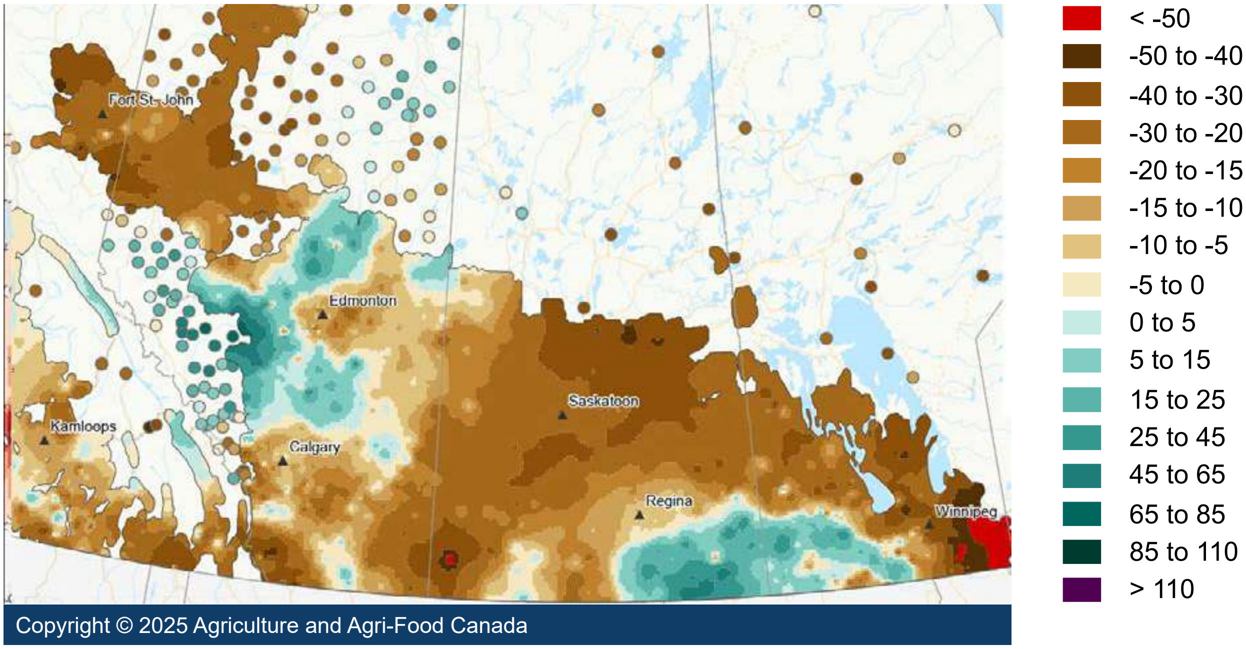


Figure 1.3 Departure from average precipitation in May 2025.

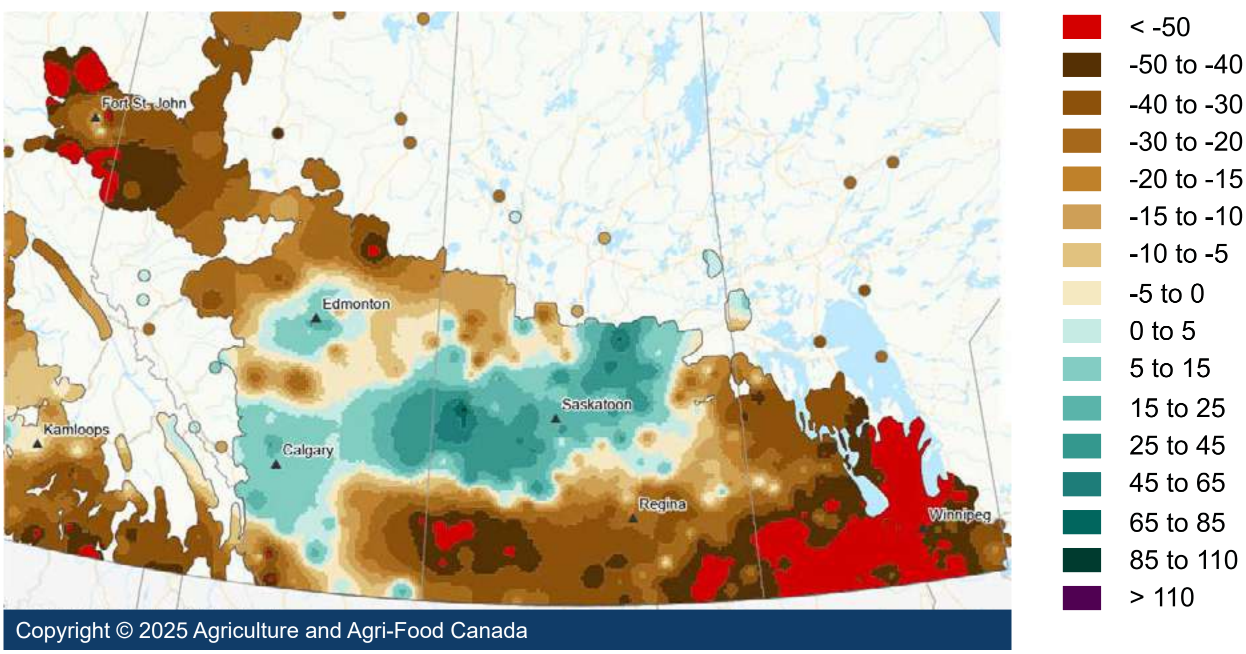


Figure 1.4 Departure from average precipitation in June 2025.

Figure 1.5 Mean temperature difference from normal in July 2025.

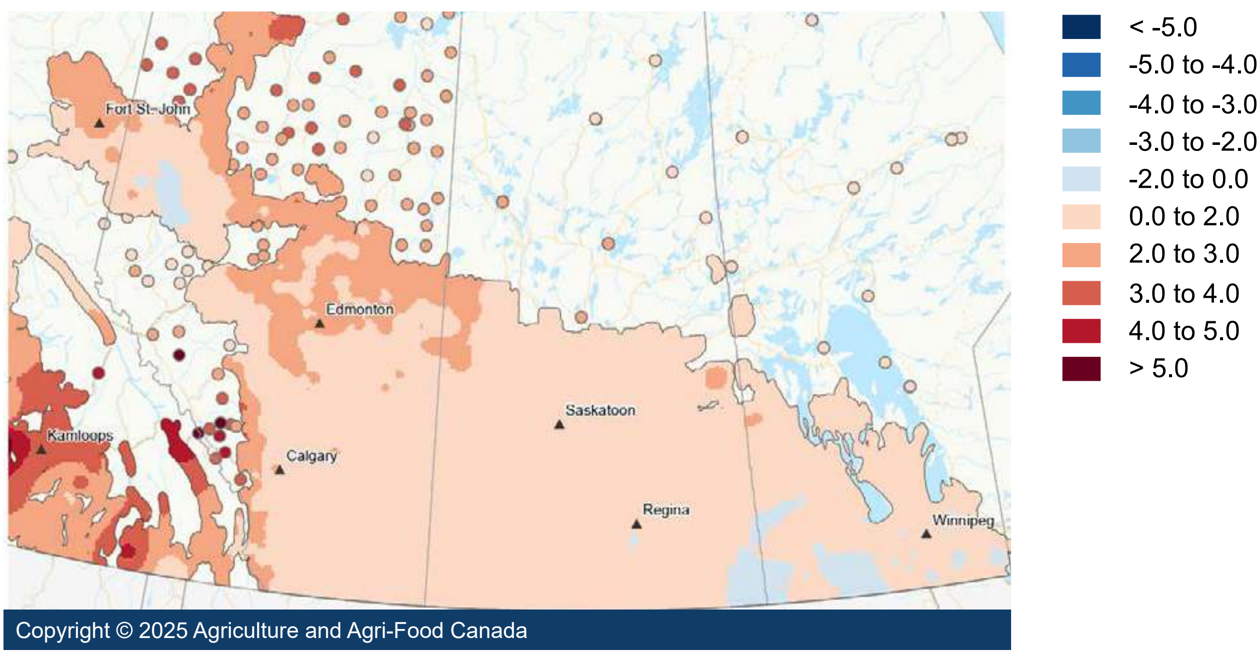


Figure 1.6 Mean temperature difference from normal in August 2025.

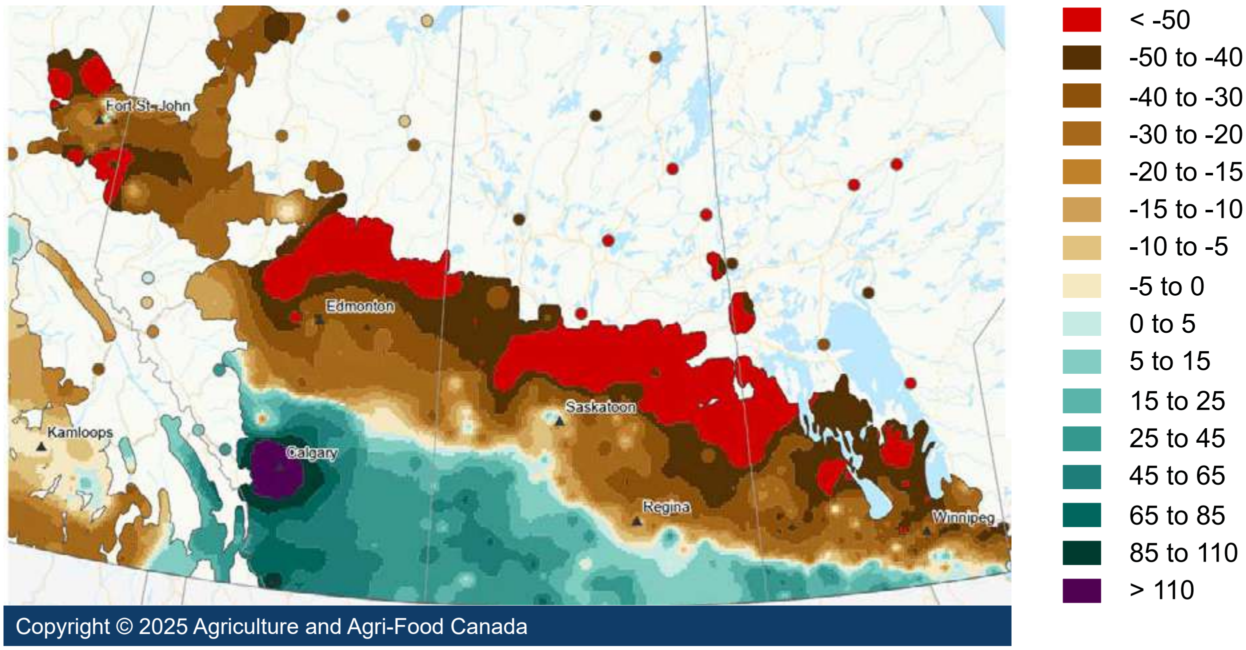


Figure 1.7 Departure from average precipitation in July 2025.

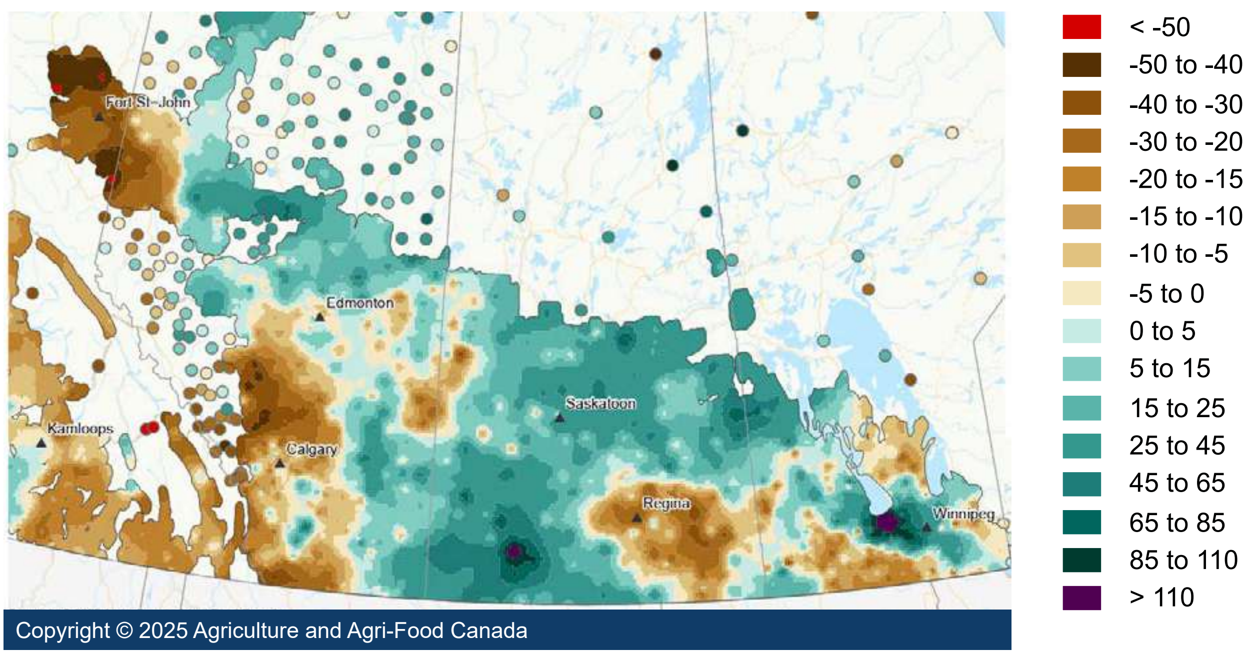


Figure 1.8 Departure from average precipitation in August 2025.

Barley production in 2025

2.1 Annual production statistics

The total area seeded with barley in western Canada was 2.397 million hectares in 2025. This is approximately 4.3% lower than in 2024 and 11.5% lower than the 10-year average of 2.710 million hectares (Table 2.1). Barley production in western Canada is estimated at 9.448 million tonnes. This is approximately 20% higher than in 2024, and 11% higher than the 10-year average (Table 2.2). Cooler than normal temperatures and near-average to above-average precipitation in July during heading and grain filling contributed to a higher than initially anticipated barley yield (79.9 bushels per acre) and higher than anticipated barley production in 2025 (Table 2.3 and Figure 2.3).

Table 2.1 Area (million hectares) seeded with barley in Canada

Location	2025[1]	2024	10-year average[2]
Manitoba	0.125	0.126	0.153
Saskatchewan	0.912	0.936	1.119
Alberta	1.338	1.418	1.414
British Columbia	0.022	0.023	0.025
Western Canada	**2.397**	**2.504**	**2.710**
Canada	**2.483**	**2.592**	**2.820**

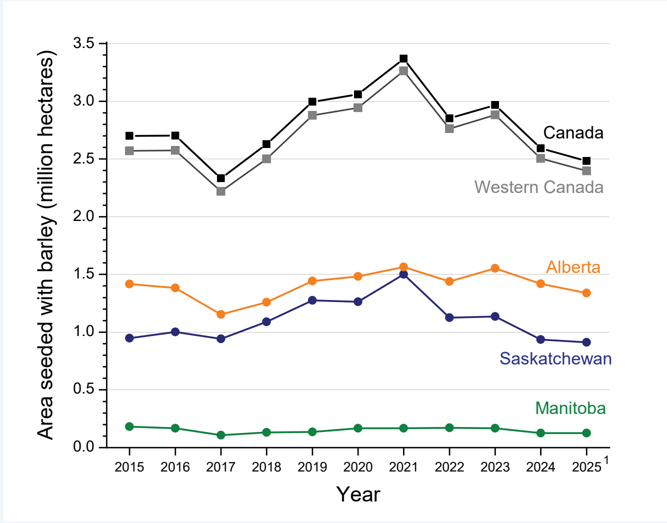


Figure 2.1 Annual comparison of area (million hectares) seeded with barley in Canada.

[1]Source: Statistics Canada, estimated as of December 4, 2025.
[2]10-year average from 2015 to 2024.

Table 2.2 Barley production (million tonnes) in Canada

Location	2025[1]	2024	10-year average[2]
Manitoba	0.535	0.512	0.561
Saskatchewan	3.522	3.035	3.396
Alberta	5.313	4.229	4.481
British Columbia	0.078	0.063	0.062
Western Canada	**9.448**	**7.839**	**8.499**
Canada	**9.725**	**8.144**	**8.851**

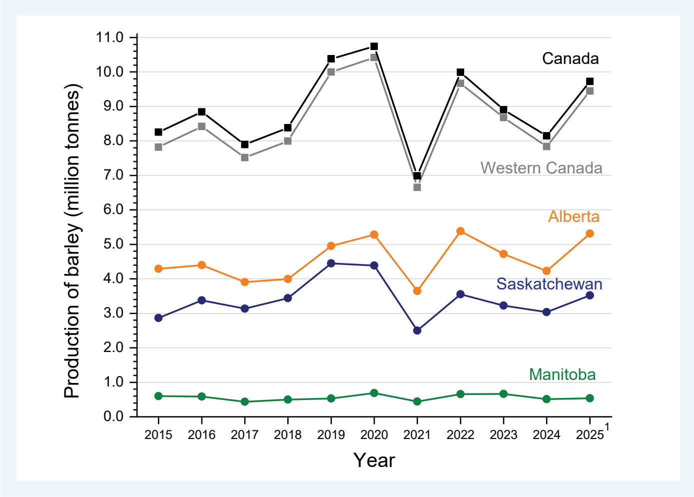


Figure 2.2 Annual comparison of barley production (million tonnes) in Canada.

Table 2.3 Average barley yield (bushels per acre) in Canada

Location	2025[1]	2024	10-year average[2]
Manitoba	85.0	78.3	73.6
Saskatchewan	78.2	64.9	61.9
Alberta	80.7	60.6	67.6
British Columbia	73.7	54.7	57.3
Western Canada	**79.9**	**63.1**	**65.4**
Canada	**79.4**	**63.2**	**65.2**

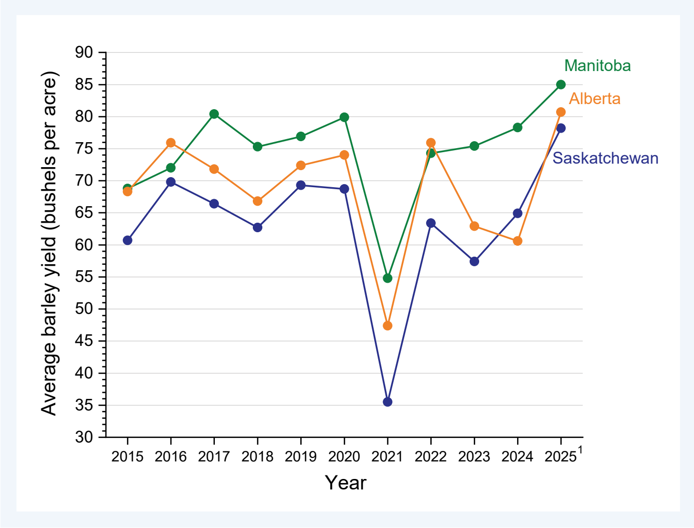


Figure 2.3 Annual comparison of average barley yield (bushels per acre) in western Canada.

[1]Source: Statistics Canada, estimated as of December 4, 2025.
[2]10-year average from 2015 to 2024.

2.2 Distribution of barley classes and varieties in 2025

Barley is grown across the Prairies and is used for malting, food and general purposes (feed and forage). In 2025, the area seeded with barley consisted of 48.0% general purpose barley, 46.2% malting barley, and 1% food barley (Figure 2.4).

Based on insured commercial acres in 2025, Alberta remained the biggest producer of barley in western Canada, followed by Saskatchewan and Manitoba (Figure 2.5). The distribution of barley classes in each province in 2025 was similar to that observed in 2024 (Figure 2.5). More than 50% of the area seeded with barley in western Canada in 2025 was in Alberta. The area seeded with general purpose barley in Alberta (31.8%) exceeded that seeded with malting barley (22.8%). Saskatchewan accounted for approximately 37% of the area seeded with barley in western Canada. The area seeded with malting barley in Saskatchewan (21.0%) surpassed that seeded with general purpose barley (11.8%). Manitoba remained the smallest producer of barley in western Canada and accounted for approximately 6.3% of the total area seeded with barley on the Prairies.

AAC Synergy, a malting barley (M), was the most popular variety seeded in western Canada in 2025 and exceeded CDC Austenson, a general purpose (GP) barley that has continued to decline in seeded area. The other popular varieties were CDC Copeland (M), Sirish (M/GP), Esma (GP), AAC Connect (M), CDC Churchill (M), CDC Fraser (M), and Brahma (GP) (Figure 2.6a). Although initially registered as malting barley, Sirish is seldom selected for malting and is used primarily as general purpose barley. Figure 2.6b shows percentages of area seeded with the most popular malting and general purpose barley varieties in each of the Prairie provinces in 2025.

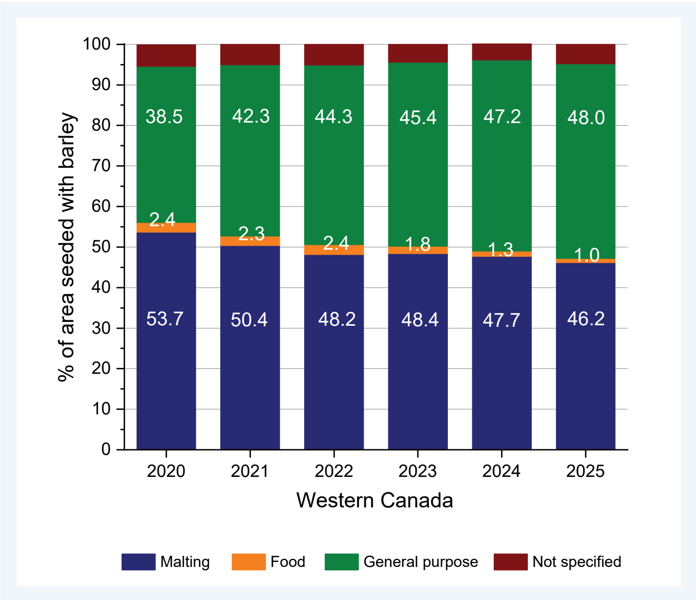
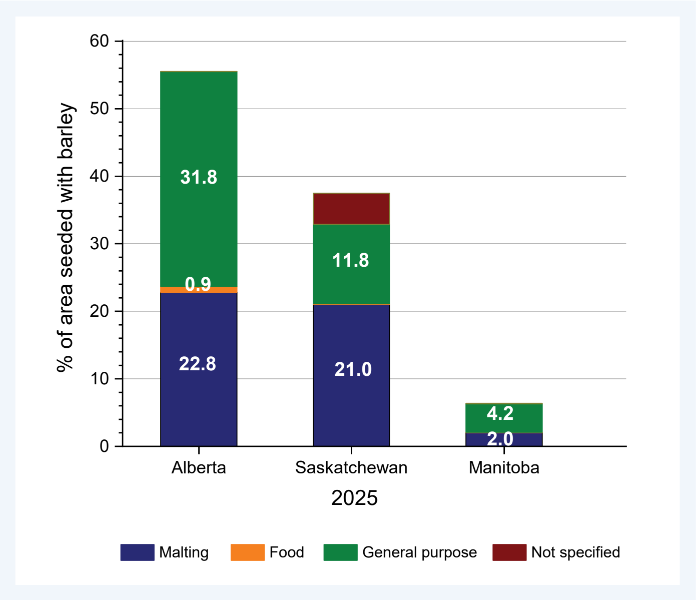


Figure 2.4 Distribution of barley classes as a percentage (%) of area seeded with barley in western Canada from 2020 to 2025. Data based on crop insurance statistics from each province.[1]

[1]Source: Saskatchewan Crop Insurance Corporation, Alberta Agricultural Financial Services Corporation, Manitoba Agricultural Services Corporation, British Columbia AgriStability and Production Insurance.



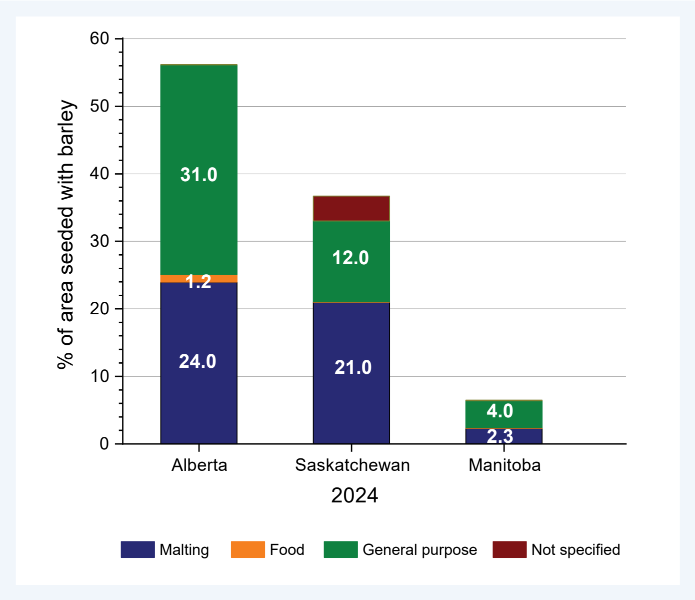


Figure 2.5 Distribution of barley classes in each province as a percentage (%) of area seeded with barley in western Canada in 2025 (left) and 2024 (right). Data based on crop insurance statistics from each province.[1]

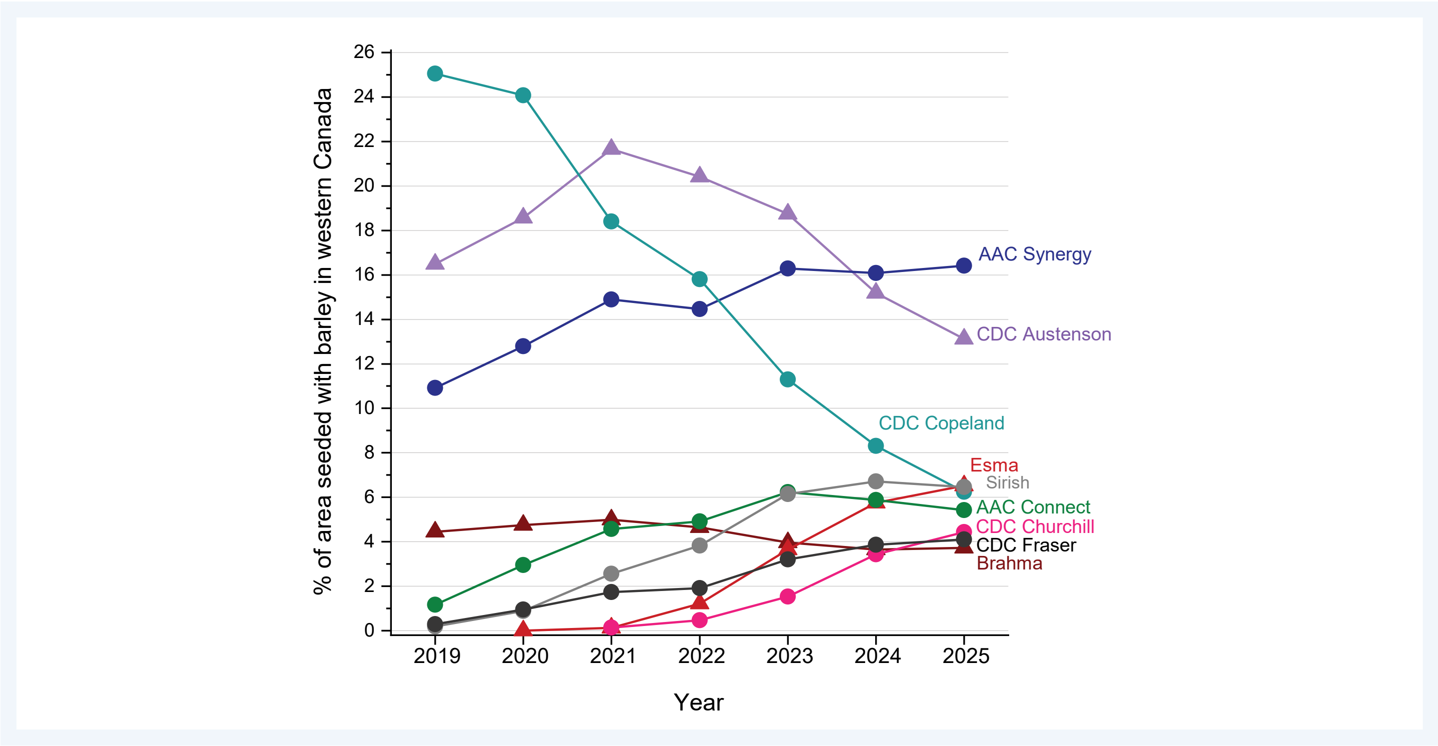


Figure 2.6a Comparison of area seeded with the top barley varieties in western Canada from 2019 to 2025.[1]

[1]Source: Saskatchewan Crop Insurance Corporation, Alberta Agricultural Financial Services Corporation, Manitoba Agricultural Services Corporation, British Columbia AgriStability and Production Insurance.

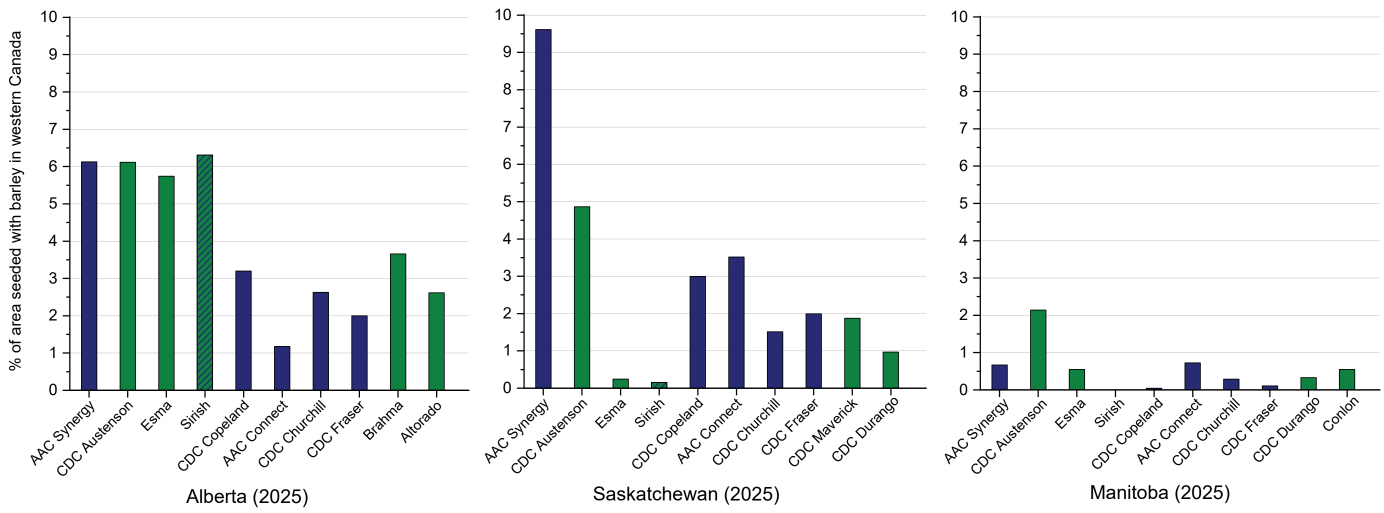


Figure 2.6b Percentage of area seeded with the most popular general purpose and malting barley varieties in the Prairie provinces in 2025. Results expressed as a percentage of the area seeded with all barley in western Canada.[1]

2.3 Distribution of malting barley varieties

In 2025, AAC Synergy was the most widely grown malting barley variety in western Canada (Figure 2.7, Table 2.4). Its seeded area increased slightly from 2024, accounting for 35.6% of the total malting barley acreage. By contrast, the area seeded with CDC Copeland declined substantially to 13.5% from 17.4% in 2024 (Figure 2.7). Based on seeded area, other popular varieties included AAC Connect (11.7%) and CDC Fraser (8.9%). CDC Churchill also gained popularity, with its seeded area rising to 9.6% in 2025 from 7.1% in 2024. The variety Sirish, registered in 2017, continued to occupy a considerable share of seeded area (14%), though it is used primarily as feed. The area seeded with AC Metcalfe continued to decline.

In 2025, areas seeded with newer varieties, such as Bill Coors 100, CDC Goldstar and SY Stanza, were still relatively small, but increased slightly compared with 2024 (Figure 2.7, Table 2.4). In contrast, area seeded with CDC Copper, CDC Bow, Newdale, and AB BrewNet declined modestly. Six-rowed cultivars represented approximately 1.9% of the total malting barley area seeded in 2025, marginally lower than the 2.0% recorded in 2024. Within this group, Legacy expanded to 1.6% from 1.4% in 2024. Legacy, Celebration, and Tradition remained the leading six-rowed varieties (Table 2.4).

The most popular barley variety seeded in Alberta in 2025 was Sirish, followed by AAC Synergy, CDC Copeland, CDC Churchill, and CDC Fraser (Figure 2.8). AAC Synergy dominated in Saskatchewan, while In Manitoba, the most popular malting varieties were AAC Connect and AAC Synergy.

[1]Source: Saskatchewan Crop Insurance Corporation, Alberta Agricultural Financial Services Corporation, Manitoba Agricultural Services Corporation, British Columbia AgriStability and Production Insurance.

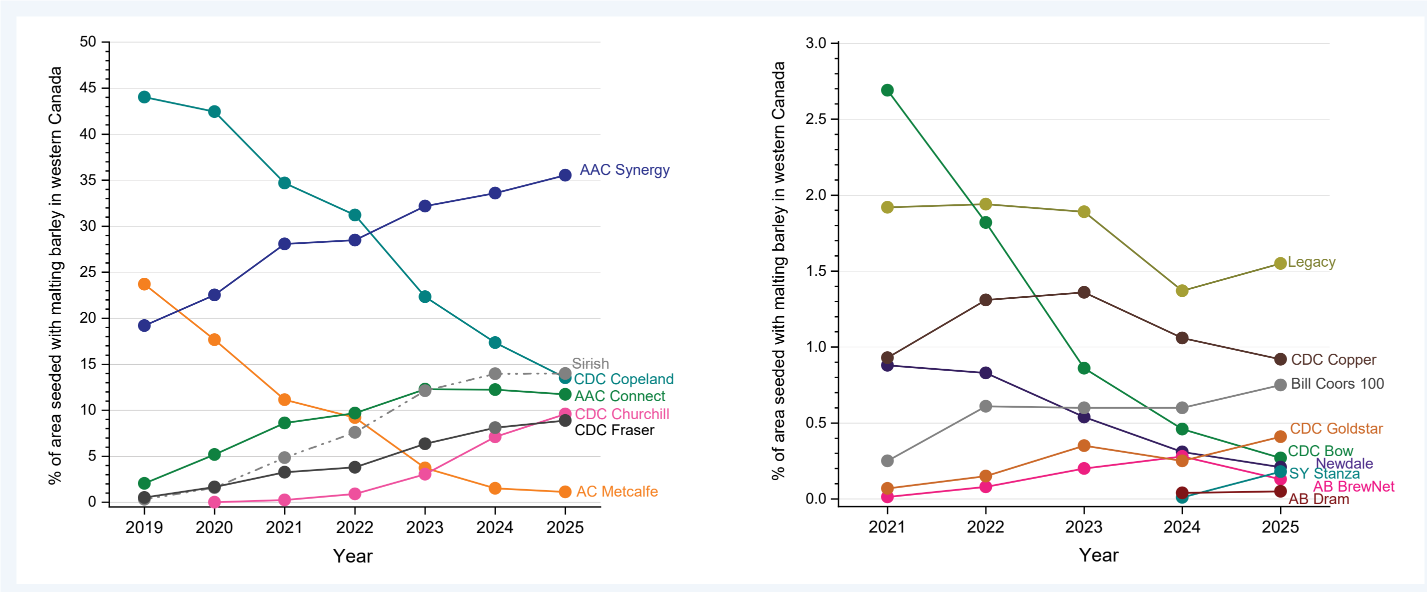


Figure 2.7 Comparison of the area seeded with the top malting barley varieties (left) and the minor malting barley varieties (right) in western Canada from 2019 to 2025. Data based on crop insurance statistics from each province.[1]

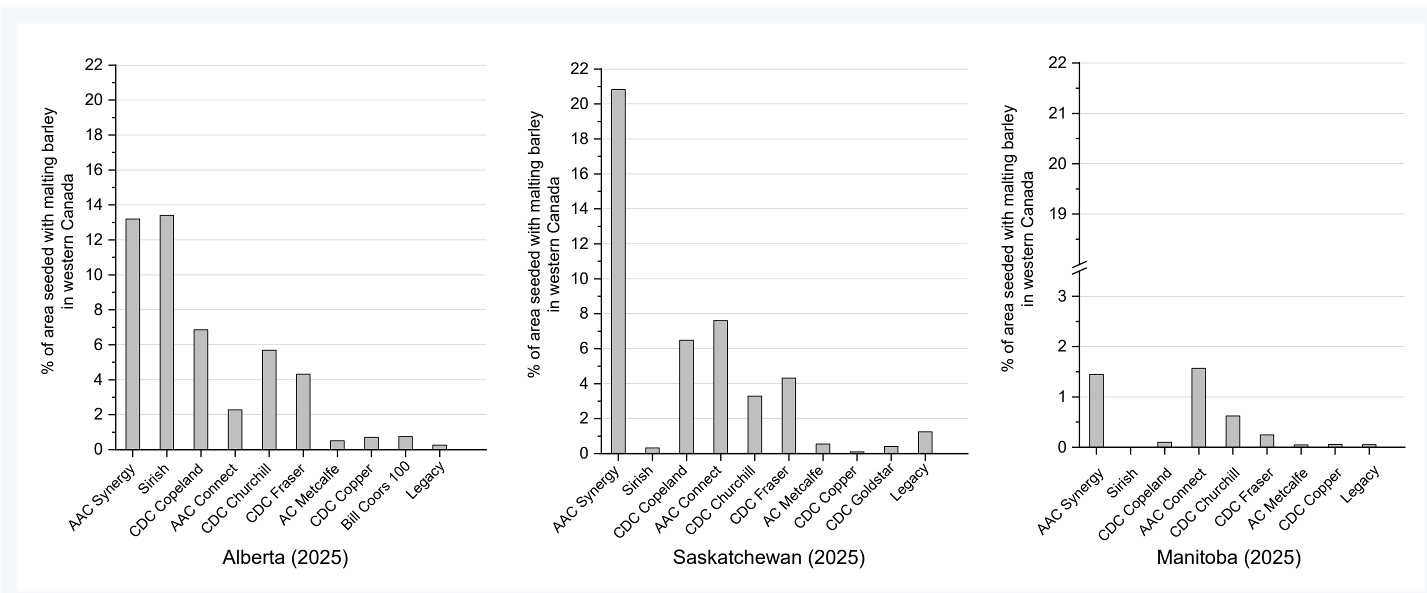


Figure 2.8 Percentage of area seeded with malting barley varieties in the Prairie provinces in 2025[1].

[1]Source: Saskatchewan Crop Insurance Corporation, Alberta Agricultural Financial Services Corporation, Manitoba Agricultural Services Corporation, British Columbia AgriStability and Production Insurance.

Table 2.4 Distribution of malting barley varieties as a percentage (%) of area seeded with malting barley in western Canada in 2025[1]

Malting barley variety	British Columbia	Alberta	Saskatchewan	Manitoba	Western Canada
2-row					
AAC Synergy	0.08	13.19	20.83	1.45	35.55
Sirish	0.25	13.41	0.33	0.00	13.99
CDC Copeland	0.08	6.86	6.49	0.10	13.52
AAC Connect	0.27	2.28	7.61	1.57	11.73
CDC Churchill	0.00	5.69	3.28	0.62	9.59
CDC Fraser	0.00	4.32	4.31	0.25	8.88
AC Metcalfe	0.04	0.51	0.55	0.05	1.14
CDC Copper	0.06	0.71	0.09	0.05	0.92
Bill Coors 100	0.00	0.75	0.00	0.00	0.75
CDC Goldstar	0.00	0.00	0.41	0.00	0.41
CDC Bow	0.00	0.27	0.00	0.00	0.27
Newdale	0.00	0.06	0.10	0.05	0.21
Bentley	0.00	0.18	0.00	0.00	0.18
SY Stanza	0.00	0.18	0.00	0.00	0.18
Cerveza	0.00	0.06	0.10	0.00	0.16
AB BrewNet	0.00	0.13	0.00	0.00	0.13
CDC Stratus	0.00	0.11	0.00	0.00	0.11
Harrington	0.00	0.02	0.07	0.00	0.09
Torbellino	0.00	0.06	0.00	0.00	0.06
AAC Prairie	0.00	0.05	0.00	0.00	0.05
AB Dram	0.00	0.05	0.00	0.00	0.05
CDC Meredith	0.00	0.04	0.00	0.00	0.04
Other	0.00	0.07	0.00	0.00	0.07
Total 2-row	**0.78**	**48.99**	**44.18**	**4.13**	**98.07**
6-row					
Legacy	0.00	0.26	1.24	0.05	1.55
Celebration	0.00	0.00	0.05	0.10	0.15
Tradition	0.00	0.00	0.00	0.08	0.08
Other	0.00	0.15	0.00	0.00	0.15
Total 6-row	**0.00**	**0.41**	**1.29**	**0.22**	**1.93**

[1]Source: Saskatchewan Crop Insurance Corporation, Alberta Agricultural Financial Services Corporation, Manitoba Agricultural Services Corporation, British Columbia AgriStability and Production Insurance.

2.4 Distribution of general purpose and food barley varieties

Based on the 2025 insured acreage in western Canada, food (F) and general purpose (GP) barley varieties accounted for approximately 49% of the total area seeded with barley (Figure 2.4). Although CDC Austenson predominated the area seeded with GP barley varieties, its acreage has continued to decrease since 2021 (Table 2.5 and Figure 2.9). The other most popular GP variety in 2025 was Esma, followed by Brahma, Altorado, and CDC Maverick. The area seeded with CDC Durango increased to 4.8% in 2025 (Figure 2.9).

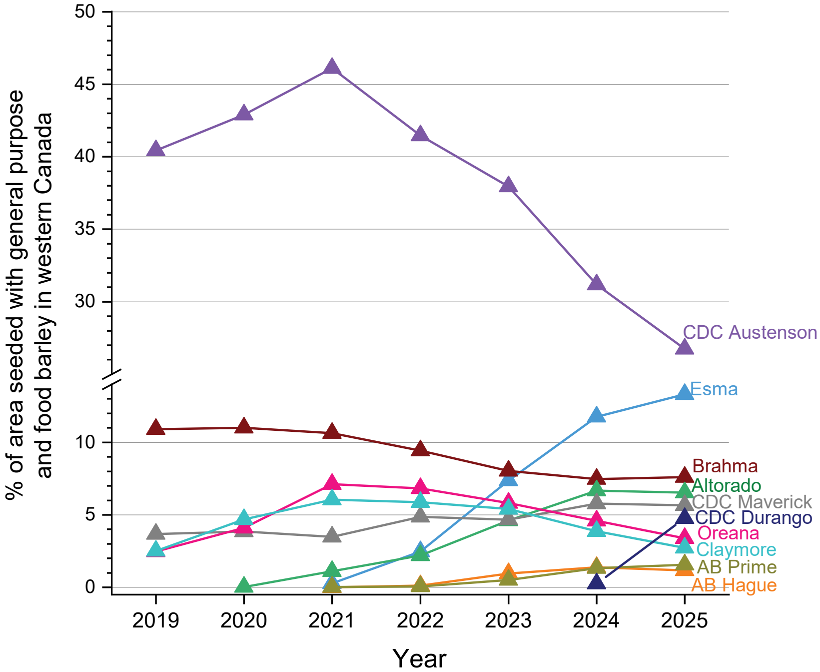


Figure 2.9 Comparison of area seeded with the top general purpose and food barley varieties in western Canada from 2019 to 2025. Data based on crop insurance statistics from each province.[1]

[1]Source: Saskatchewan Crop Insurance Corporation, Alberta Agricultural Financial Services Corporation, Manitoba Agricultural Services Corporation, British Columbia AgriStability and Production Insurance.

Table 2.5 Distribution of barley varieties as a percentage (%) of area seeded with general purpose and food barley in western Canada in 2025[1]

General purpose/food variety	British Columbia	Alberta	Saskatchewan	Manitoba	Western Canada
2-row					
CDC Austenson	0.23	12.23	9.92	4.36	26.74
Esma	0.01	11.70	0.49	1.12	13.32
Brahma	0.08	7.38	0.14	0.00	7.60
Altorado	0.00	5.33	1.11	0.09	6.53
CDC Maverick	0.05	1.63	3.83	0.10	5.60
CDC Durango	0.00	2.12	1.98	0.67	4.77
Conlon	0.00	2.62	0.31	1.12	4.04
Oreana	0.00	3.12	0.27	0.00	3.39
Champion	0.00	2.30	0.44	0.03	2.76
Claymore	0.00	1.18	1.22	0.33	2.73
KWS Kellie	0.05	2.48	0.00	0.00	2.54
CDC Renegade	0.02	1.01	1.11	0.05	2.19
Xena	0.00	1.80	0.14	0.00	1.94
Canmore (F)	0.00	1.68	0.00	0.11	1.79
AB Prime	0.00	1.56	0.00	0.00	1.56
CDC Cowboy	0.04	0.80	0.70	0.00	1.54
CDC Coalition	0.00	1.24	0.00	0.00	1.24
AB Hague	0.00	0.83	0.36	0.00	1.18
AB Wrangler	0.01	0.70	0.15	0.00	0.86
AC Sirius	0.00	0.52	0.00	0.00	0.52
AAC Lariat	0.00	0.41	0.00	0.00	0.41
Other	0.00	0.58	0.09	0.00	0.74
Total 2-row	**0.49**	**63.45**	**22.30**	**7.97**	**94.21**
6-row					
AB Advantage	0.01	1.09	1.43	0.22	2.75
AB Cattlelac	0.00	0.86	0.28	0.20	1.34
AB Tofield	0.00	0.29	0.07	0.00	0.35
Richer	0.00	0.00	0.00	0.30	0.30
Alston	0.00	0.19	0.00	0.00	0.19
Seebe	0.00	0.18	0.00	0.00	0.18
AB Standswell	0.00	0.11	0.00	0.00	0.11
AC Albright	0.05	0.01	0.04	0.00	0.09
Amisk	0.00	0.07	0.00	0.00	0.07
AC Rosser	0.00	0.00	0.06	0.00	0.06
Other	0.00	0.32	0.04	0.00	0.36
Total 6-row	**0.06**	**3.11**	**1.92**	**0.71**	**5.79**

[1]Source: Saskatchewan Crop Insurance Corporation, Alberta Agricultural Financial Services Corporation, Manitoba Agricultural Services Corporation, British Columbia AgriStability and Production Insurance. F=Food

Annual harvest survey of malting barley

3.1 Sampling and survey methodology

The 2025 malting barley survey is based on varietal composites that represent approximately 1,400,000 tonnes of malting barley selected for domestic processing or export. The grain handling and malting companies involved in the selection process were Cargill Ltd., Canada Malting Co. Ltd., Boortmalt, Rahr Malting Canada Ltd., Richardson International Ltd., Viterra Inc. and Malteurop Canada Ltd. The tonnage included in this survey represents only a portion of the total volume of malting barley selected in western Canada. Some additional samples included in this report came from the Canadian Grain Commission's Harvest Sample Program. Samples were received from the beginning of harvest until November 15, 2025.

3.2 Quality of barley selected for malting in 2025

- In 2025, the average protein content in barley selected for malting was 11.8%, which was lower than the 2024 average (12.2%) and slightly below the 10-year average (12.0%) (Figure 3.1). The protein content by variety is given in Figure 3.2.

- The average test weight was 67.9 kg/hL, which was significantly higher than the 2024 average (64.6 kg/hL) and above the 10-year average (66.6 kg/hL) (Figure 3.3). Test weight comparisons by variety are in Figure 3.4.

- The average 1000-kernel weight was 48.1 g, exceeding both the 2024 average (44.1 g) and the 10-year average (45.6 g) (Figure 3.5). All varieties had higher 1000-kernel weights in 2025 compared to 2024 (Figure 3.6).

- The average kernel plumpness, measured as kernels retained on a 6/64" slotted screen, was 96%. This was much higher than the 2024 average (87.3%) and above the 10-year average (93.4%) (Figure 3.7). The kernel plumpness value was higher across all varieties in 2025 compared to 2024 (Figure 3.8).

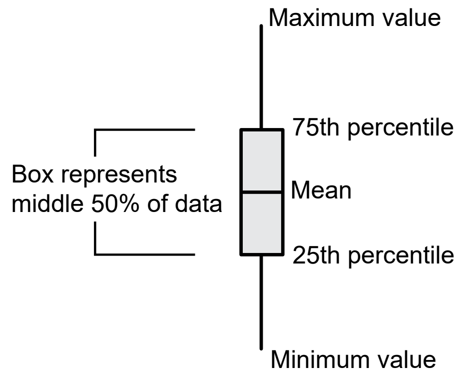
- The content of β-glucans, arabinoxylans and starch in selected malting varieties grown in western Canada in 2023, 2024, and 2025 is shown in Figure 3.9, Figure 3.10 and Figure 3.11. Average starch content in 2025 barley was 2 to 3% higher than in 2024, while gelatinization temperature was 2 to 3°C lower (Figure 3.12).

- The average hardness index of barley grain in 2025 ranged from 45 to 54, slightly lower than in 2024 for most varieties (Figure 3.15).

- Kernel length in 2025 barley was slightly lower than in 2024 (Figure 3.13), whereas kernel thickness and width were much higher (Figure 3.14). Kernel lightness was also slightly lower than in 2024 (Figure 3.16).

- 2025 barley exhibited excellent average germination energy at 4 mL (99%) (Figure 3.17). In 2025, the average germination energy at 8 mL was 90%, which was only slightly lower than the 2024 average (95%) (Figure 3.19).

Box plot explanation



Quartiles and means are represented by boxes and horizontal lines, respectively. Whiskers extend to the maximum and minimum values.

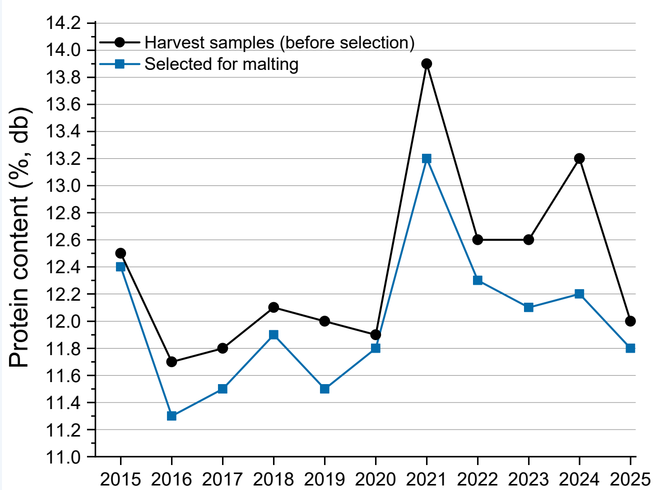


Figure 3.1 Average protein content of barley selected for malting from 2015 to 2025. Values indicate weighted averages based on the tonnage represented by samples.

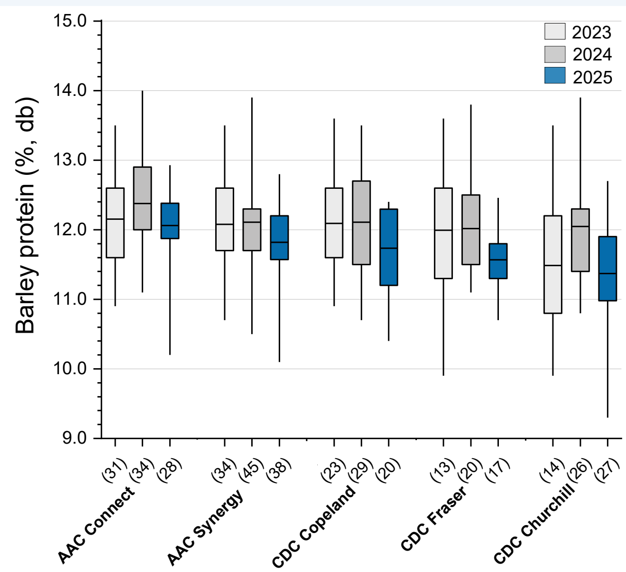


Figure 3.2 Comparison of protein content in selected barley varieties in 2023, 2024 and 2025. Sample numbers are in parentheses.

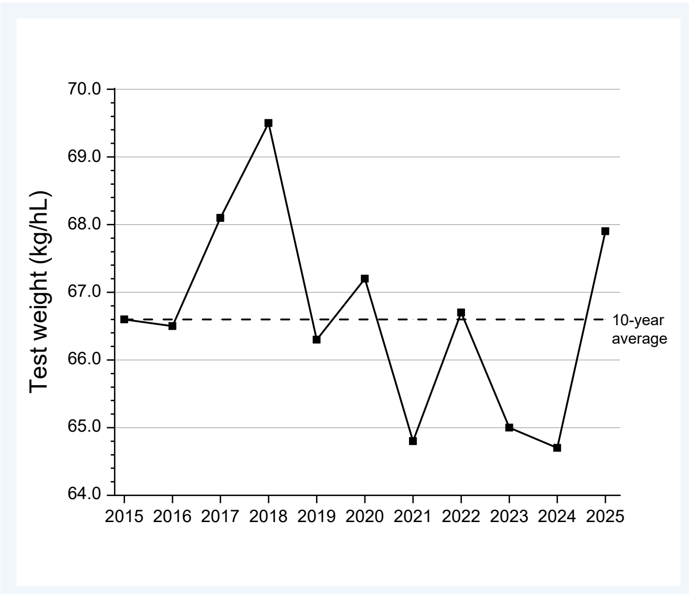


Figure 3.3 Average test weight of barley selected for malting from 2015 to 2025. Values indicate weighted averages based on the tonnage represented by samples.

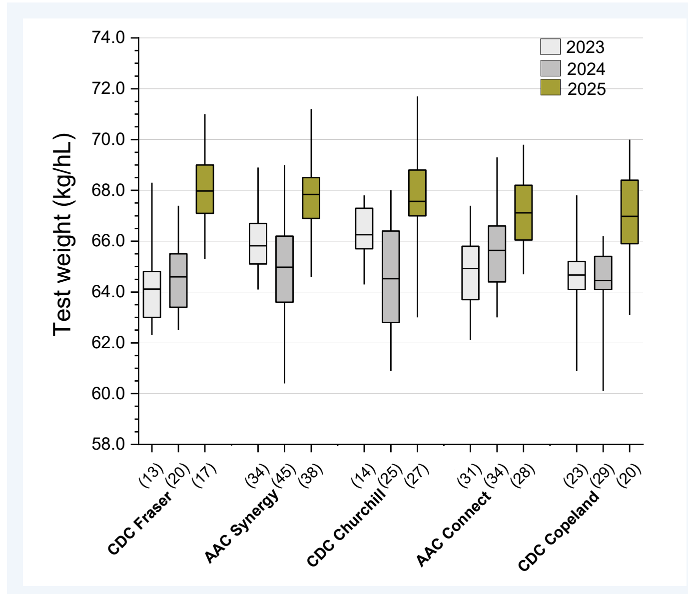


Figure 3.4 Comparison of test weight of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

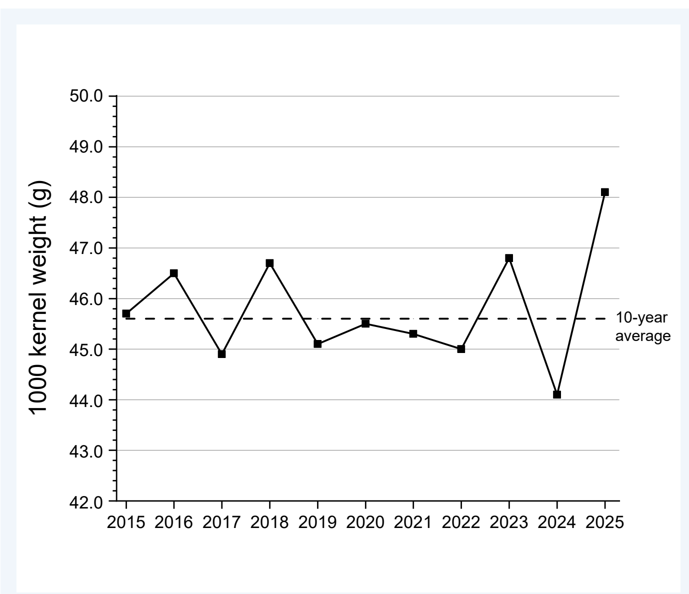


Figure 3.5 Average 1000 kernel weight of barley selected for malting from 2015 to 2025. Values indicate weighted averages based on the tonnage represented by samples.

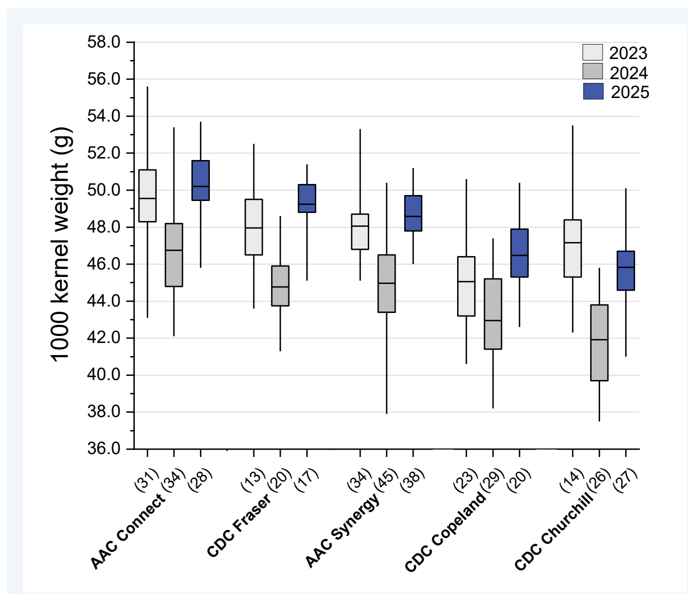


Figure 3.6 Comparison of 1000 kernel weight of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

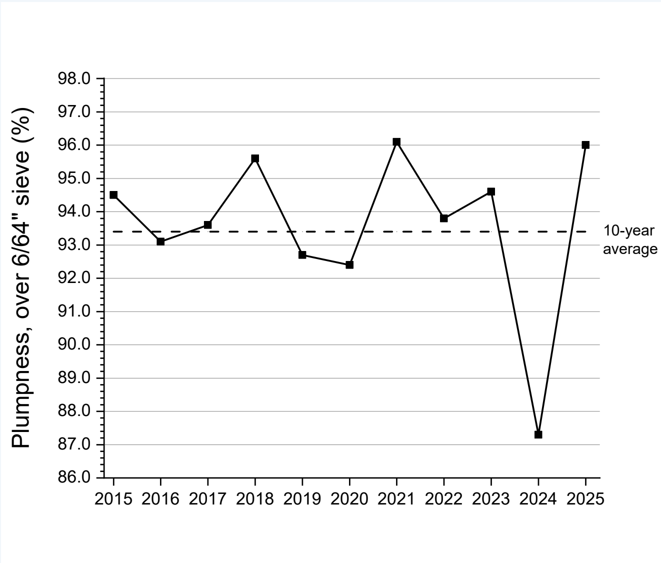


Figure 3.7 Average plumpness of barley selected for malting from 2015 to 2025. Values indicate weighted averages based on the tonnage represented by samples.

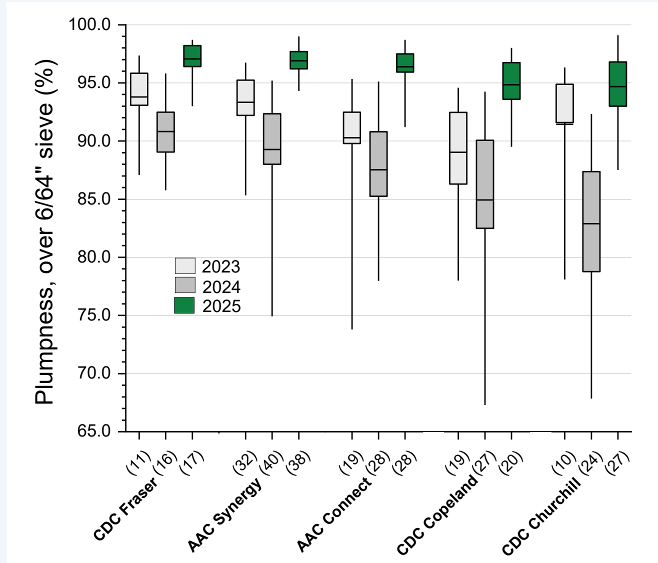


Figure 3.8 Comparison of plumpness of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

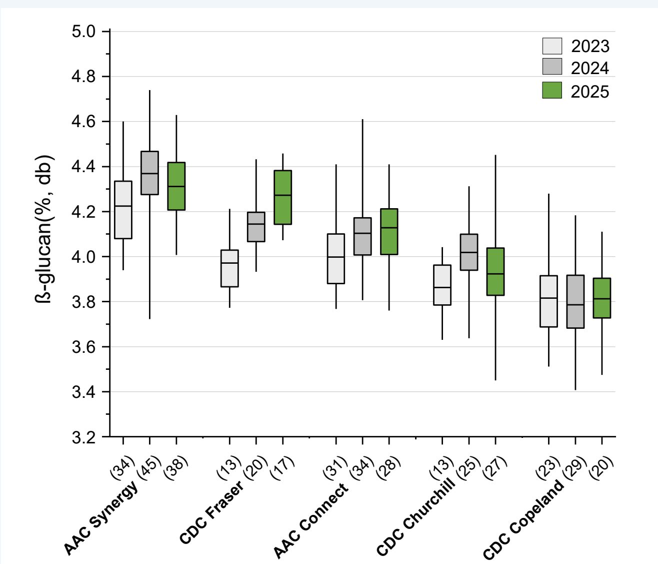


Figure 3.9 Comparison of beta-glucan content in barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

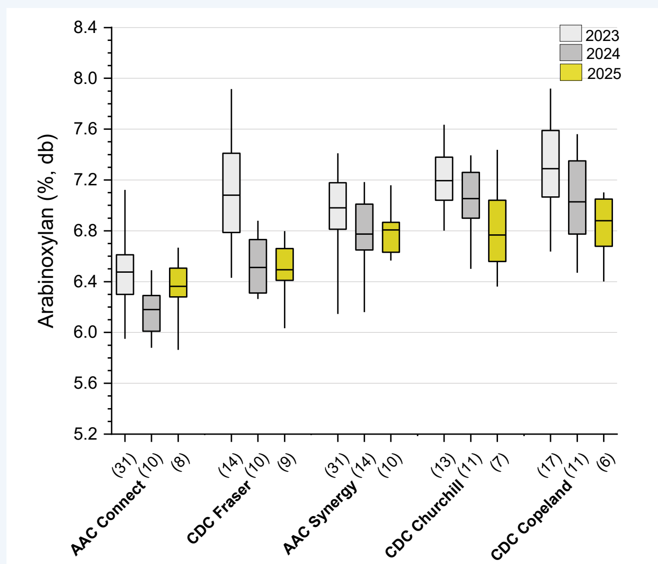


Figure 3.10 Comparison of arabinoxylan content in barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

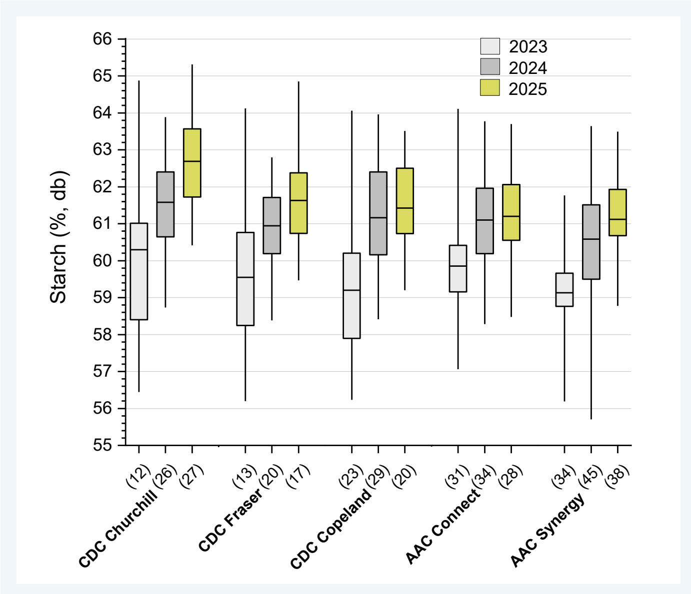


Figure 3.11 Comparison of starch content in barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

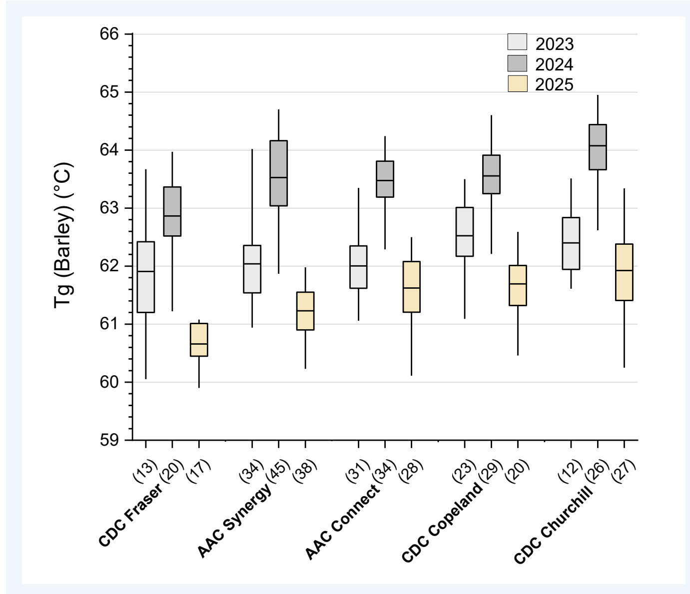


Figure 3.12 Comparison of gelatinization temperature (Tg) of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

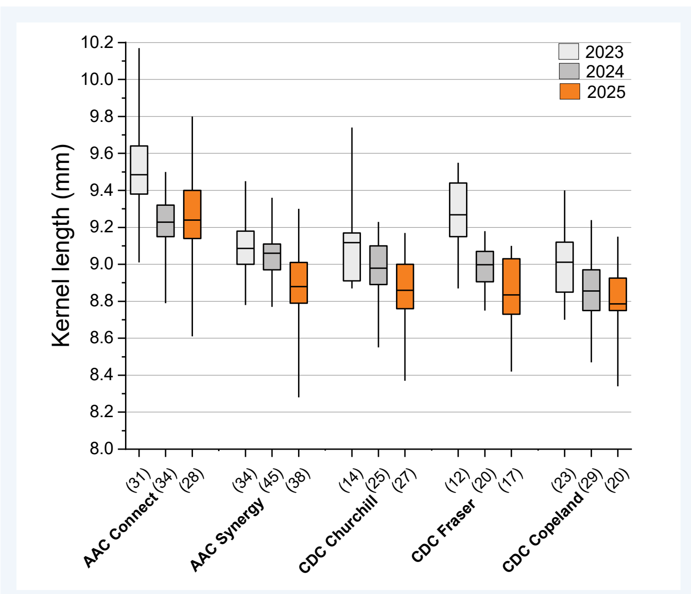


Figure 3.13 Comparison of kernel length of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

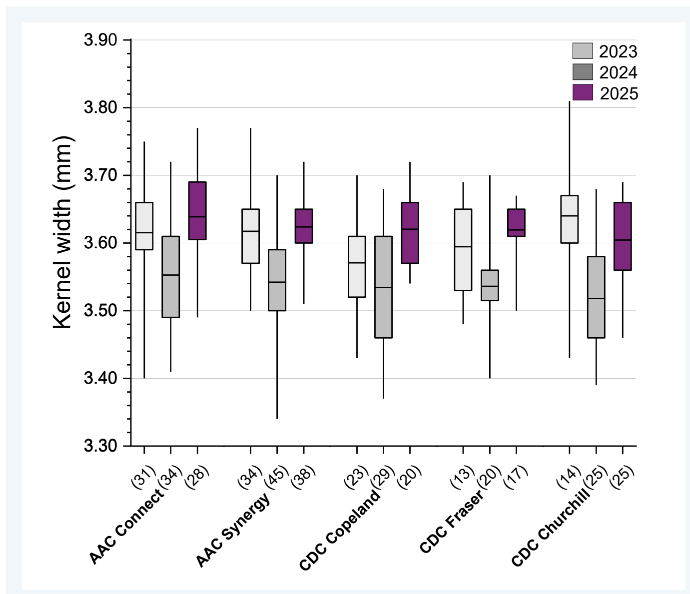


Figure 3.14 Comparison of kernel width of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

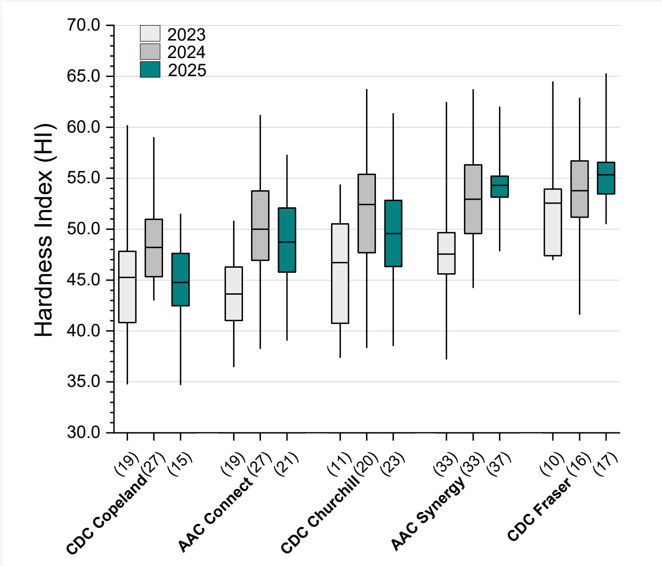


Figure 3.15 Comparison of the kernel hardness index of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

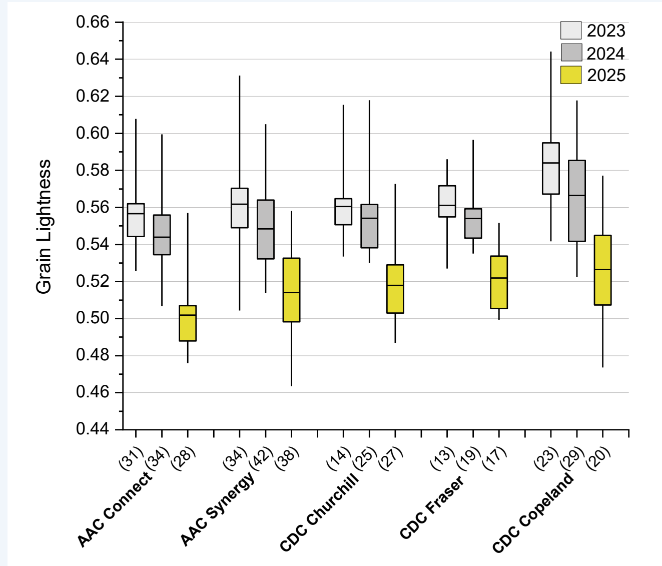


Figure 3.16 Comparison of kernel colour (lightness scale: 0-black, 1-white) of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

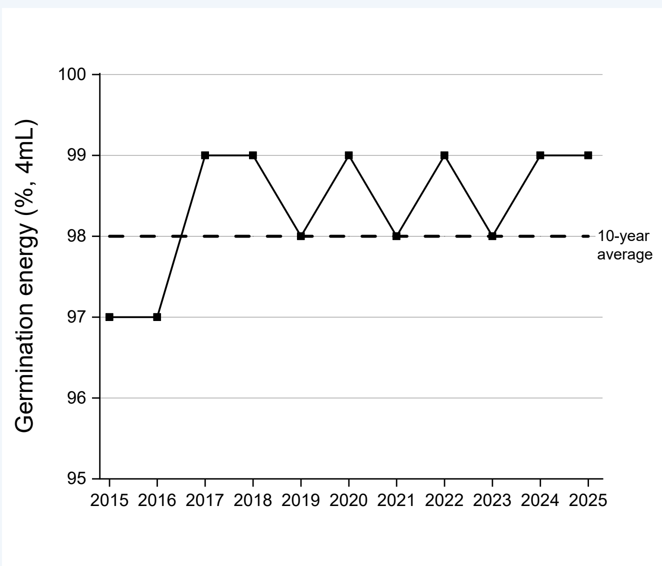


Figure 3.17 Average germination energy (4 mL) of barley selected for malting from 2015 to 2025. Values indicate weighted averages based on the tonnage represented by samples.

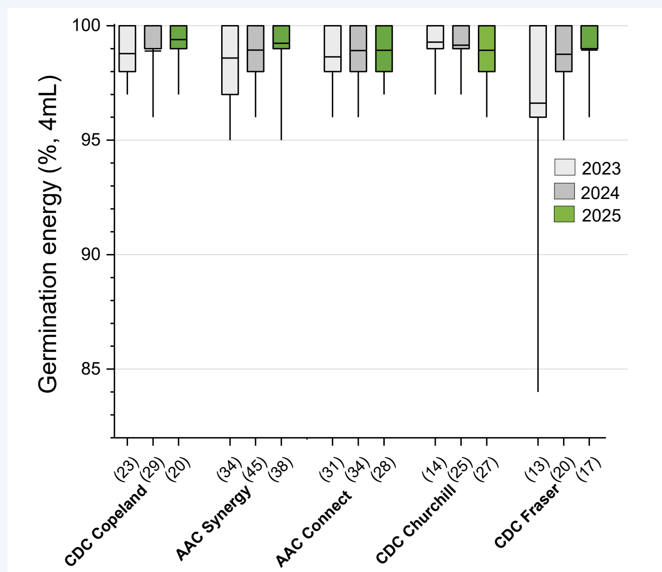


Figure 3.18 Comparison of germination energy (4 mL) of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

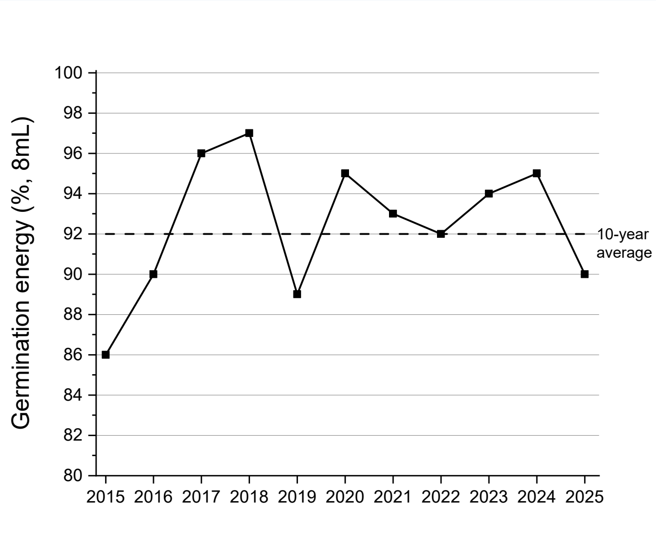


Figure 3.19 Average germination energy (8 mL) of barley selected for malting from 2015 to 2025. Values indicate weighted averages based on the tonnage represented by samples.

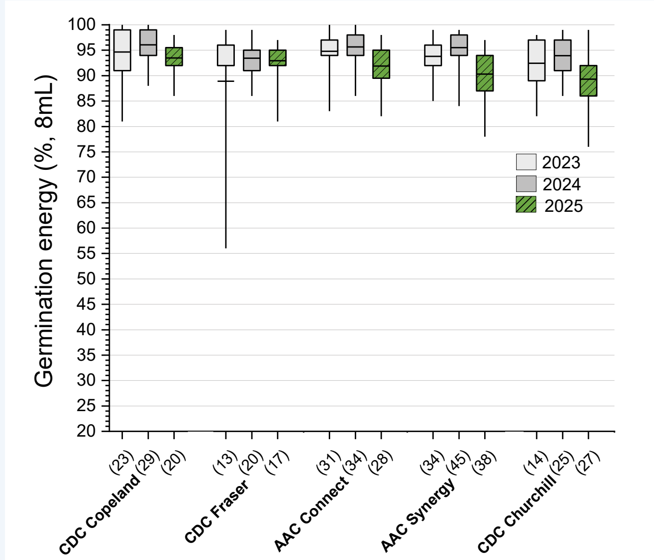


Figure 3.20 Comparison of germination energy (8 mL) of barley selected for malting in 2023, 2024 and 2025. Sample numbers are in parentheses.

3.3 Pre-harvest sprouting

Pre-harvest sprouting can occur when mature grain remains unharvested in the field during prolonged periods of wet weather. One of the enzymes produced very early during germination is α-amylase. Since the level of α-amylase in sound grain is very low compared to that in germinating grain, the content of α-amylase in grain can be used as a marker of germination. Rapid visco analysis (RVA) indirectly estimates the amount of α-amylase in barley by measuring the viscosity of ground barley in water. The viscosity results are expressed in Rapid Visco Units (RVU) which then can be converted to centipoise (cP) (1 RVU = 12 cP).

Barley selectors use RVA to identify sound, moderately and strongly pre-germinated barley, and to manage their supply accordingly. Samples with final viscosity values greater than 120 RVU are considered sound, and the probability that they will retain germination energy after storage is very high. Samples with RVA values of 50 to 120 RVU are moderately pre-germinated, while samples with RVA values less than 50 RVU are substantially pre-germinated and have a high probability of losing germination energy during storage. They should be malted as soon as possible. To more accurately predict safe storage time, storage conditions (temperature and relative humidity) and the initial moisture content of the grain must be considered in addition to the RVA values.

This year's crop was challenged by occasional rainy conditions during harvest in August. The RVA results show that barley was moderately affected by pre-harvest sprouting (Figure 3.21). The RVA results were higher for barley grown in Alberta and Saskatchewan than in Manitoba. Figure 3.22 compares the RVA results for individual varieties grown in 2023, 2024 and 2025. The RVA results stress the need to identify barley with low RVU that should be malted promptly, especially if the moisture content of grain is relatively high. As indicated in the next section of this report, pre-germinated barley malted soon after harvest can produce good quality malt.

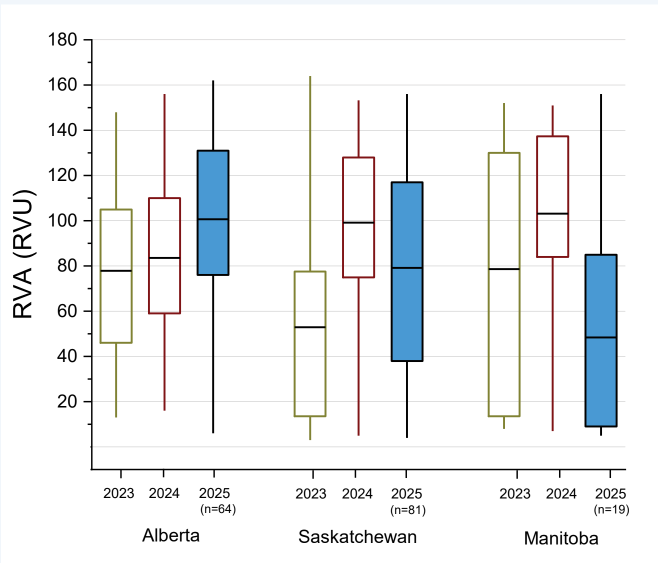


Figure 3.21 Rapid visco analysis (RVA) results for barley selected for malting in 2025 compared to 2024 and 2023 for the Prairie provinces. Sample numbers for 2025 are in parentheses.

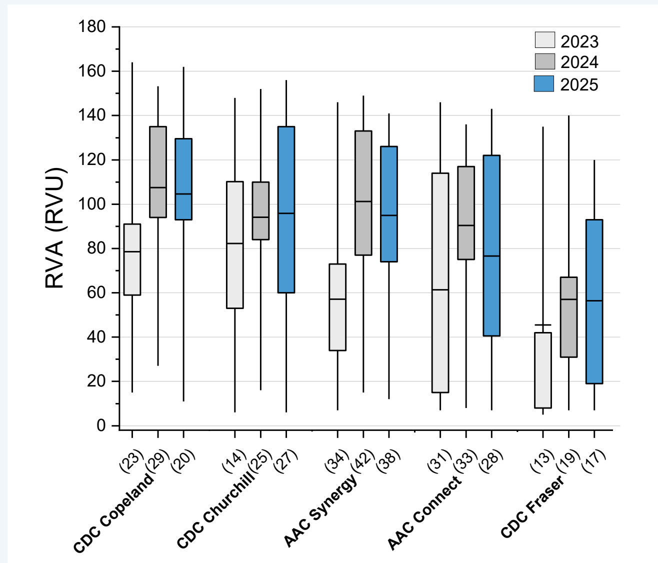


Figure 3.22 Comparison of rapid visco analysis (RVA) results for selected barley varieties in 2023, 2024 and 2025. Sample numbers are in parentheses.

Risk of germination loss in storage	RVA viscosity (RVU)
Low	≥120
Intermediate	50-120
High	<50

3.4 Malting conditions and methodologies

Initial malting trials indicated that barley grown in 2025 absorbed water slightly slower during steeping than 2024 barley. The reduced absorption was influenced by the higher test weight, greater plumpness, and larger kernel size of 2025 barley. As a result, the second wet steeping cycle was extended to 7 hours, compared with 6 hours in 2024. Additional water was also applied during germination to samples with steep-out moisture below 45.5%. The germination and kilning steps followed the same schedule as in 2024 (Table 3.1).

Different steeping, germination, and kilning conditions were applied to the malting of SY Stanza and the hulless varieties (CDC Armstrong and CDC Pristine) to account for SY Stanza's water sensitivity and the distinct grain characteristics of the hulless grains (absence of hulls) (Table 3.2). It should be noted, however, that the malting conditions used in this survey are not necessarily optimized for either type of barley.

All the analytical methods used to evaluate barley, malt, and wort quality in this survey are detailed in the Appendix.

Table 3.1 Comparison of malting conditions (Phoenix Micromalting System) used for covered malting barley varieties in 2024 and 2025.

	2024	2025
1st steep	8 h	8 h
1st air rest	15 h	15 h
2nd steep	6 h	7 h
2nd air rest	14 h	14 h
Temperature of steeping	14°C	14°C
Additional spraying during germination	No	Yes, water added to sample with steep-out moisture < 45.5%
Germination	96 h at 15°C	96 h at 15°C
Kilning	12 h at 60-65°C, 6 h at 65°C, 2 h at 75°C, 5 h at 83-85°C, 2 h at 60°C, 2 h at 40°C	12 h at 60-65°C, 6 h at 65°C, 2 h at 75°C, 5 h at 83-85°C, 2 h at 60°C, 2 h at 40°C

Table 3.2 Steeping, germination, and kilning conditions (Phoenix Micromalting System) used for malting of SY Stanza and the hulless barley varieties, CDC Armstrong and CDC Pristine.

	Malting conditions for SY Stanza	Malting conditions for hulless barley
1st steep	4 h	6 h
1st air rest	12 h	8 h
2nd steep	6 h	6 h
2nd air rest	10 h	8 h
3rd steep	6 h	6 h
3rd air rest	8 h	8 h
Temperature of steeping	15°C	15°C
Germination	96 h at 16°C	96 h at 16°C
Kilning	12 h at 50-55°C, 6 h at 60-65°C, 2 h at 75°C, 5 h at 80-85°C, 2 h at 60°C, 2 h at 40°C	6 h at 30-55°C, 16 h at 55°C, 8 h at 55-65°C, 10 h at 65°C, 2 h at 65-80°C, 6 h at 80-82°C, 2 h at 60°C, 2 h at 40°C

3.5 Malting quality in 2025: varietal and yearly comparisons

Figure 3.23, Figure 3.25, Figure 3.27, Figure 3.29, Figure 3.31 and Figure 3.33 compare the average values of fine extract, malt α-amylase, malt diastatic power, wort free amino nitrogen (FAN), malt proteins and wort β-glucans for established malting varieties evaluated annually in our survey since 2019. The line graphs present arithmetic averages, with the number of samples evaluated in 2025 shown in parentheses after each variety name. The corresponding box plots (Figure 3.24, Figure 3.26, Figure 3.28, Figure 3.30, Figure 3.32 and Figure 3.34) illustrate the distribution of results for fine extract, malt α-amylase, malt diastatic power, wort FAN, malt proteins and wort β-glucans for established malting varieties and new varieties (CDC Goldstar, Bill Coors 100, and SY Stanza) evaluated for the first time in 2025.

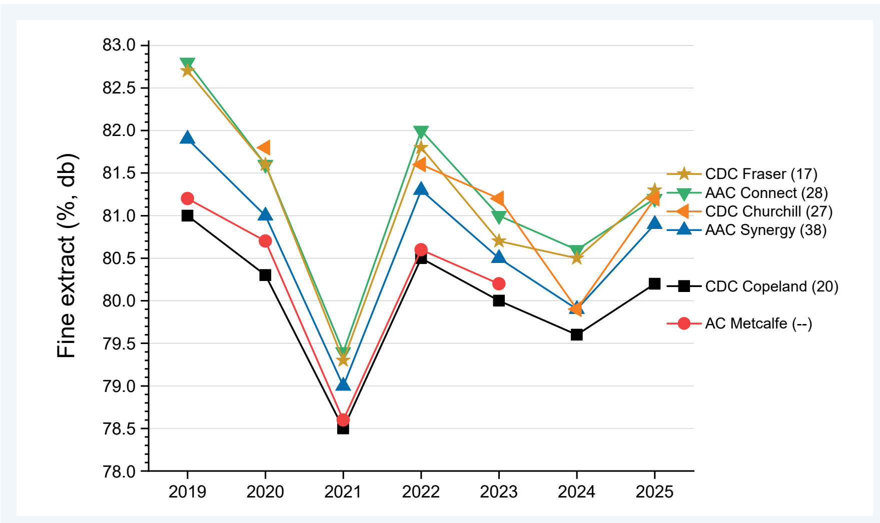


Figure 3.23 Comparison of the average fine extract level from the malt of selected barley varieties from 2019 to 2025.

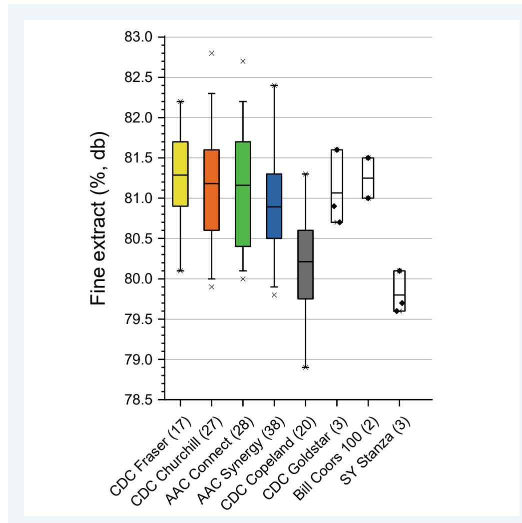


Figure 3.24 Comparison of fine extract levels from the malt of selected barley varieties grown in 2025.

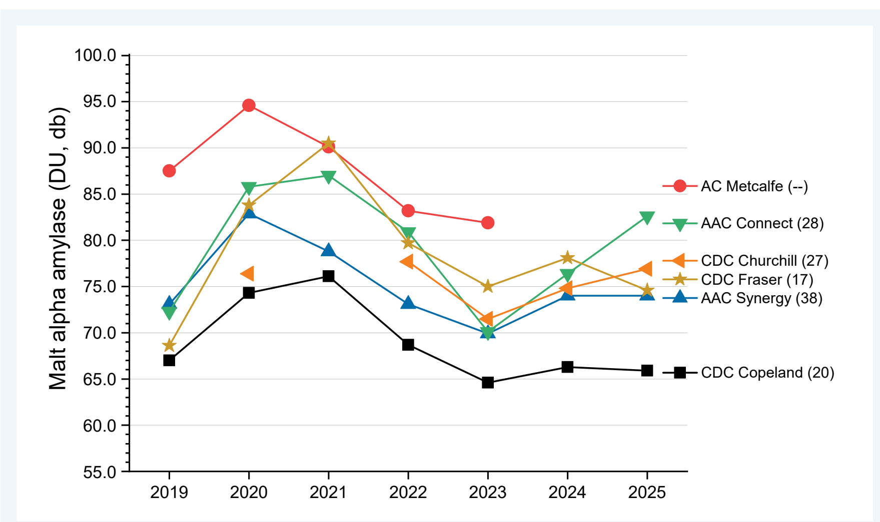


Figure 3.25 Comparison of the average α-amylase activity in the malt of selected barley varieties from 2019 to 2025.

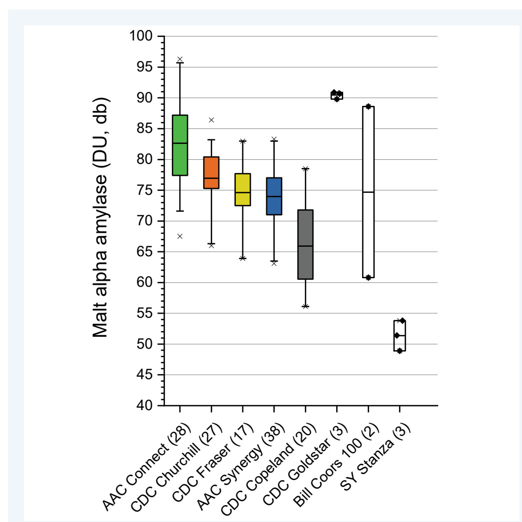


Figure 3.26 Comparison of α-amylase activity in the malt of selected barley varieties grown in 2025.

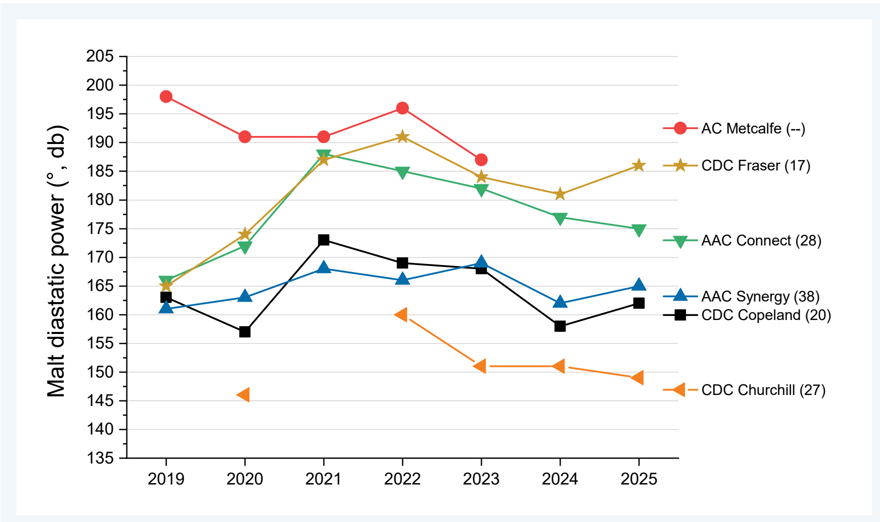


Figure 3.27 Comparison of the average diastatic power in the malt of selected barley varieties from 2019 to 2025.

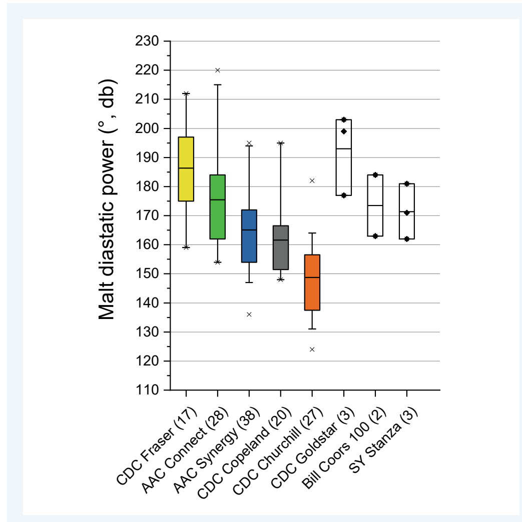


Figure 3.28 Comparison of diastatic power in the malt of selected barley varieties grown in 2025.

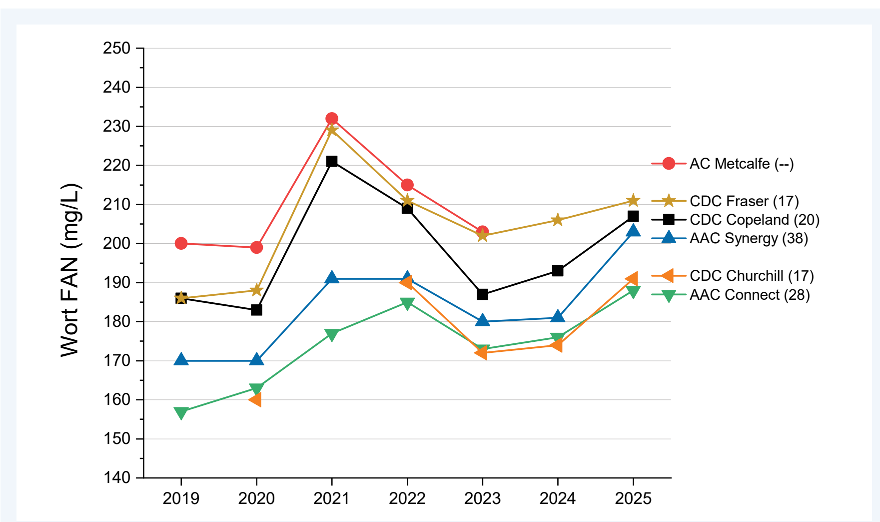


Figure 3.29 Comparison of the average FAN level in wort produced from the malt of selected barley varieties from 2019 to 2025.

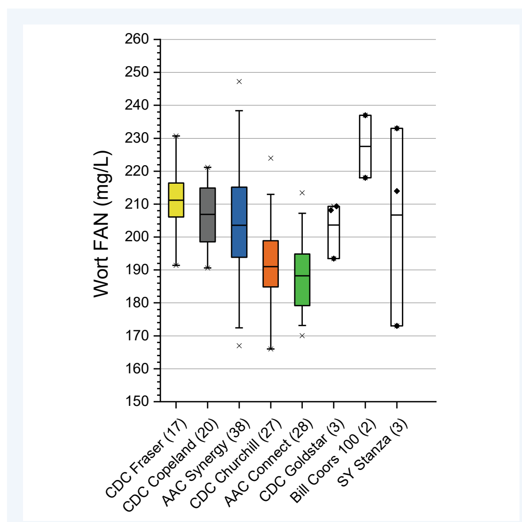


Figure 3.30 Comparison of FAN levels in wort produced by the malt of selected barley varieties grown in 2025.

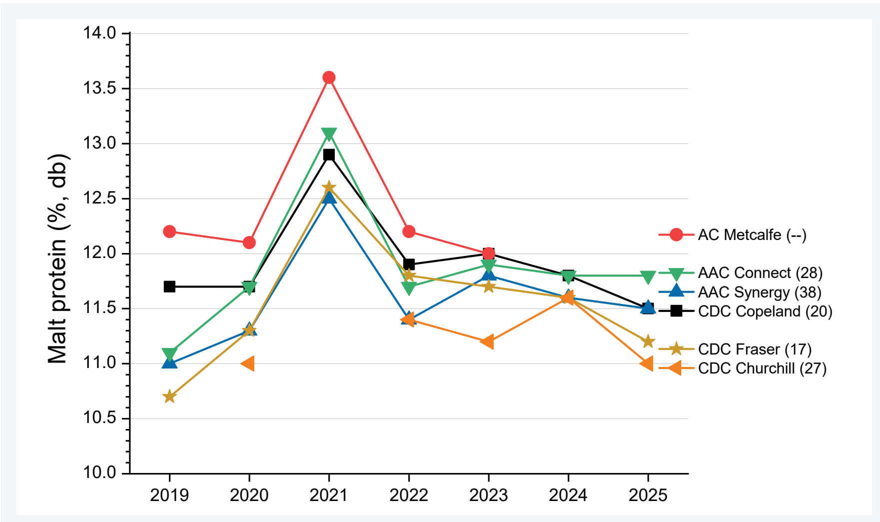


Figure 3.31 Comparison of the average protein concentration in the malt of selected barley varieties from 2019 to 2025.

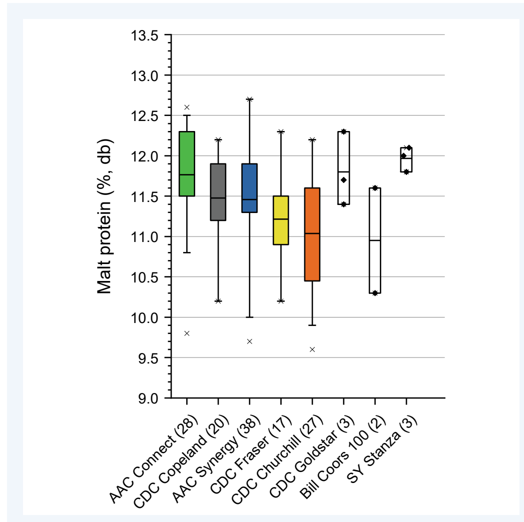


Figure 3.32 Comparison of protein concentration in the malt of selected barley varieties grown in 2025.

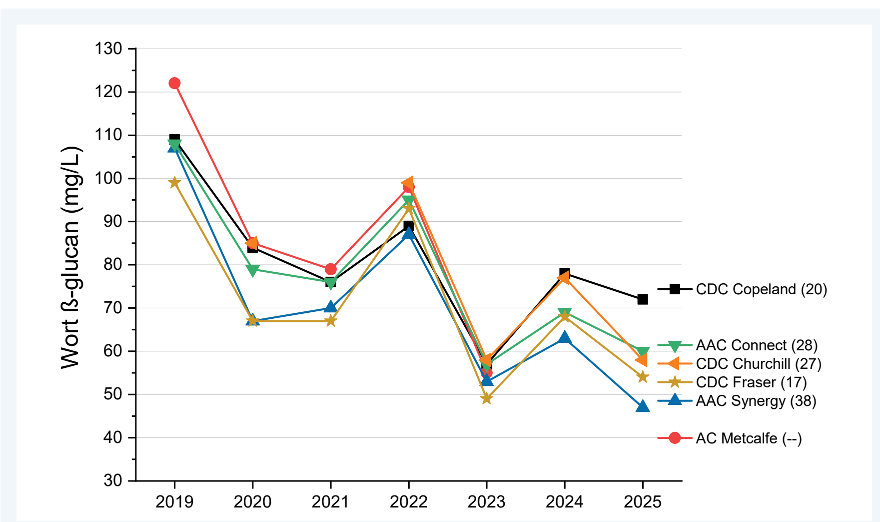


Figure 3.33 Comparison of the average β-glucan concentration in wort produced from the malt of selected barley varieties from 2019 to 2025.

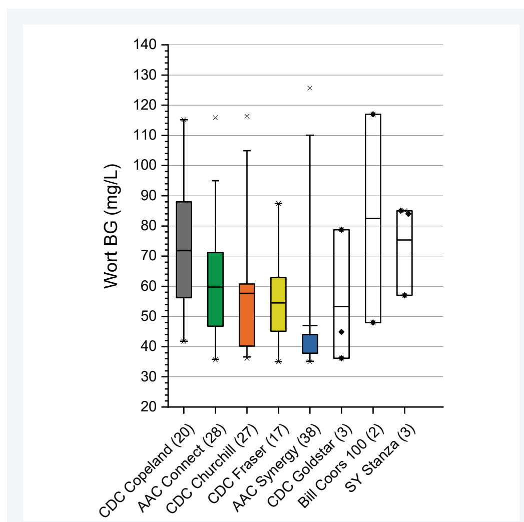


Figure 3.34 Comparison of β-glucan concentration in wort produced from the malt of selected barley varieties grown in 2025.

3.6 Highlights of malting barley quality in 2025

- Warm and dry conditions early in the 2025 growing season, followed by timely rainfall in late May and early June, allowed for rapid seeding of barley and gave the crop an excellent start. Cooler than normal temperatures combined with near-average to above-average precipitation in July created ideal conditions during heading and grain filling, ultimately enhancing both the yield and quality of barley harvested this year.
- In 2025, barley grain quality indicators were notably strong. The average test weight was 67.9 kg/hL, well above the 2024 average of 64.7 kg/hL and the 10-year average of 66.6 kg/hL. Similarly, the average 1000-kernel weight of 48.1 g, was substantially higher than the 10-year average of 45.6 g. Exceptional kernel plumpness in 2025 was associated with increased starch content, contributing to improved grain quality. In contrast, the average protein level was 11.8%, lower than both the 2024 average of 12.2% and the 10-year average of 12.0%. This reflected a shift toward starch accumulation rather than protein concentration.
- Occasional rainfall in August across parts of the Prairies led to some pre-harvest sprouting in the 2025 barley crop. Despite this, fall assessments showed excellent seed quality, with an average germination energy of 99% and a high germination index. The average germination energy for the 8 mL test was 90%, only slightly below the 2024 value of 95%. This highlights the crop’s strong viability and limited sensitivity to excess moisture.
- The combination of higher test weight, greater plumpness, and heavier kernels in the 2025 barley crop required slightly longer steeping to achieve full grain modification. This adjustment, however, produced well-modified malt characterized by high friability and robust enzyme activity (diastatic power and α-amylase), along with ample levels of soluble proteins and free amino nitrogen (FAN). In addition, wort derived from 2025 barley showed low β-glucan concentrations and excellent viscosity values, demonstrating the superior malting quality of the crop.
- The larger, heavier and thicker kernels of the 2025 barley crop had a positive impact on malt extract levels. Malt produced from this barley delivered very high extract values, further confirming the outstanding malting quality of Canadian malting barley varieties in 2025.

Quality data for individual varieties

AAC Synergy

In 2025, AAC Synergy continued to be the most popular malting barley variety seeded in western Canada. AAC Synergy is a high-yielding variety that is characterized by relatively high kernel weight and plumpness, and relatively low grain protein content. AAC Synergy has shorter and stronger straw than AC Metcalfe and CDC Copeland. It is resistant to spotted net blotch, netted net blotch and spot blotch. AAC Synergy has a desirable malting quality profile with high malt extract, good protein modification, low levels of wort β-glucans, and intermediate levels of starch-degrading enzymes.

CDC Copeland

The area seeded with CDC Copeland continued to decrease in 2025, but CDC Copeland remained the second most popular malting variety seeded in 2025. Its excellent brewing characteristics, combined with protein and enzyme levels that are lower than AC Metcalfe, provide an excellent balance among malting barley varieties.

AAC Connect

The area seeded with AAC Connect in 2025 was similar to last year. AAC Connect, registered in 2016, has excellent agronomic traits and disease resistance. AAC Connect has a very good yield potential, typically 11% higher than AC Metcalfe and 5% higher than CDC Copeland. Compared to AC Metcalfe and CDC Copeland, it has shorter, stronger straw and heavier, plumper kernels. Its maturity date is similar to that of AC Metcalfe. It is resistant to spotted net blotch, surface-borne smuts and stem rust, and moderately resistant to Fusarium head blight (FHB). This variety offers high extract, moderate to high enzymes and relatively low FAN levels, as well as good brewhouse performance and fermentability.

CDC Churchill

CDC Churchill is a recently registered variety (2019), whose seeded area has increased drastically since 2023. It is a high yielding variety (3% higher than AAC Synergy). Its maturity date is comparable to that of CDC Copeland. It has shorter, stronger straw with good lodging resistance. It is a variety with low grain protein, low to moderate levels of malt enzymes and high extract potential. CDC Churchill is moderately resistant to spot form net blotch and net form net blotch. It is moderately susceptible to Fusarium head blight (FHB).

CDC Fraser

CDC Fraser, registered in 2016, is a high yielding variety with shorter, stronger straw and excellent lodging resistance. Its yields are 14% higher than AC Metcalfe and 8% higher than CDC Copeland. Its maturity date is similar to that of CDC Copeland. High kernel weight and plumpness and good resistance to spot blotch and spotted net blotch characterize CDC Fraser. This variety offers high extract, high enzyme activity and high FAN levels.

CDC Goldstar

CDC Goldstar is a lipoxygenase (LOX)-less malting variety, developed by the Crop Development Centre at the University of Saskatchewan, in collaboration with Sapporo Breweries, Japan. The absence of the LOX-1 trait contributes to improved flavor stability in beer. In addition to high lodging resistance, CDC Goldstar has 6% higher yield than CDC Copeland. The malt quality of CDC Goldstar has higher diastatic power and lower wort β-glucan content than CDC Copeland and controllable proteolytic modification. This variety, currently offered under identity preserved contracts, is valued in the brewing industry for its ability to produce malts and beer with better flavor characteristics.

Bill Coors 100

Bill Coors 100, registered in Canada in 2020, is a 2-row malting variety bred by Molson Coors. Bill Coors 100 is a high yielding, semi-dwarf variety with a very high yield potential. Under irrigation, it demonstrates exceptional yield potential, making it a strong choice for both growers and maltsters. Its short and sturdy straw provides outstanding lodging resistance, while early maturity supports stable yields across diverse growing conditions. Bill Coors 100 produces malt with high extract values and low wort β-glucan levels, ensuring superior brewing efficiency.

SY Stanza

SY Stanza is a European-style, dual-purpose 2-row barley variety developed for both malting and feed. It combines strong agronomic performance with excellent malting quality. Registered in Canada in 2023, SY Stanza delivers yields approximately 10% higher than CDC Copeland and 1% higher than AAC Synergy. It features shorter, stronger straw with notable resistance to lodging and shows moderate resistance to scald and surface smut. Importantly, SY Stanza is a glycosidic nitrile (GN)-free barley variety, making it well suited for distilling. GN can lead to the formation of carcinogenic compounds during distillation. The non-GN trait makes SY Stanza particularly valuable to the craft brewing and distilling industry.

CDC Armstrong

CDC Armstrong is a newly registered (2024) 2-row hulless malting barley variety developed by the Crop Development Centre at the University of Saskatchewan. It was developed to replace CDC Clear, offering higher yields across all soil zones, shorter plant height, and similar lodging resistance. The variety shows excellent grain plumpness, few thin kernels and good threshability, making it attractive for growers. CDC Armstrong demonstrates lower grain protein, reduced wort β-glucan and viscosity, and higher wort extract and free amino nitrogen (FAN) compared with CDC Clear, supporting its strong potential for brewing and distilling applications.

CDC Pristine

CDC Pristine is 2-row hulless malting barley variety developed by the Crop Development Centre at the University of Saskatchewan. Registered in Canada in 2024, it was bred to deliver both strong agronomic performance and excellent malting quality. CDC Pristine offers high yield potential, improved kernel plumpness, and good lodging resistance. It is characterized by low grain protein, high extract values, high enzymes, and low wort β-glucan content, making it well suited for brewing and distilling applications.

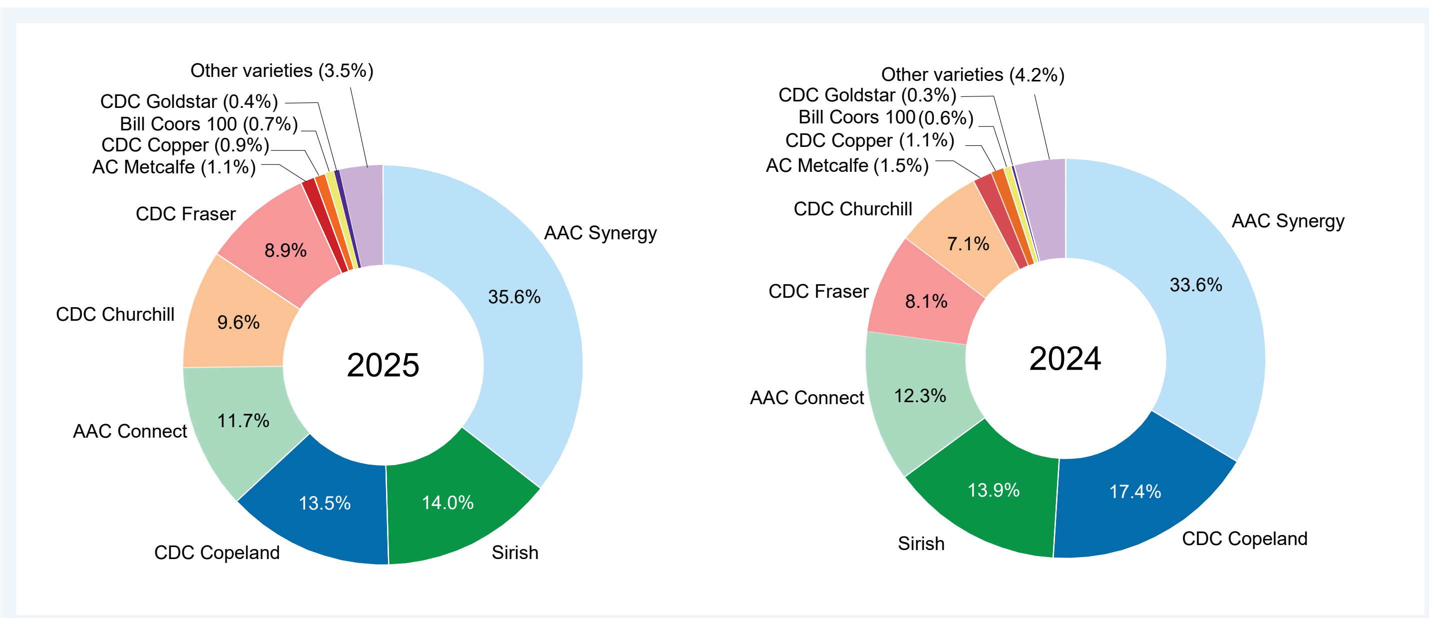


Figure 4.1 Distribution of malting barley varieties as a percentage (%) of area seeded with malting barley in western Canada in 2025 and 2024.

AAC Synergy

Table 4.1 Quality data for AAC Synergy malting barley

Quality parameter	Alberta	Saskatchewan	Manitoba	Western Canada		
Year	**2025**	**2025**	**2025**	**2025**		**2020-2024**
Number of samples	22	15	1	38		-
Tonnage represented by samples (thousands of tonnes)[a]	343	371	17	731		-
Barley	**Avg_w[b]**	**Avg_w**	**Avg_w**	**Avg_w**	**Range**	**5-year avg**
Test weight (kg/hL)	68.2	68.1	68.5	**68.2**	64.6-71.2	66.2
1000 kernel weight (g)	48.3	49.0	48.9	**48.7**	46.0-51.2	46.8
Plump, over 7/64" sieve (%)	78.2	80.3	79.7	**79.3**	71.3-88.8	62.4[d]
Plump, over 6/64" sieve (%)	96.7	97.0	97.0	**96.9**	94.3-99.0	91.0[d]
Moisture[c] (%)	11.7	12.3	12.1	**12.0**	10.4-13.4	12.2
Protein (%, db)	11.7	12.1	11.5	**11.9**	10.1-12.8	12.0
β-Glucan (%, db)	4.28	4.36	4.46	**4.32**	4.01-4.63	4.30[d]
Germination, 4 mL (%)	99	99	95	**99**	95-100	98
Germination Index, 4 mL	0.80	0.80	0.71	**0.80**	0.71-0.91	0.84[d]
Germination, 8 mL (%)	91	88	82	**89**	78-97	93
Malt						
Yield (%)	90.7	90.8	91.9	**90.8**	88.8-91.9	90.3
Steep-out moisture (%)	45.8	45.9	45.9	**45.9**	45.1-47.7	46.1
Friability (%)	78.8	76.0	78.8	**77.4**	63.1-91.6	75.3
Moisture (%)	4.4	4.6	4.4	**4.5**	3.9-4.9	4.8
Protein (%, db)	11.3	11.7	11.1	**11.5**	9.7-12.7	11.8
Diastatic power (°, db)	166	162	153	**163**	136-195	164
α-Amylase (DU, db)	74.4	75.4	74.8	**74.9**	63.1-83.3	77.6
Wort						
Fine grind extract (%, db)	81.0	80.7	80.8	**80.8**	79.8-82.4	80.4
ß-Glucan (mg/L)	41	65	65	**54**	35-126	68
Viscosity (cP)	1.44	1.44	1.44	**1.44**	1.42-1.47	1.41
Soluble protein (%, db)	4.92	4.84	4.56	**4.87**	4.24-5.39	4.92
Ratio S/T (%)	43.4	41.1	40.9	**42.3**	36.7-48.5	41.7
FAN (mg/L)	207	203	187	**205**	137-247	183
Colour (º)	2.1	2.0	1.8	**2.0**	1.7-2.5	1.9

[a] Indicates weight of selected barley represented in this survey and does not represent weight of commercially selected barley.
[b] Values are weighted averages (Avg_w) based on tonnage represented by samples received.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.
[d] Indicates the 2023-2024 average.

db = dry basis; DU = dextrinizing units; S/T = soluble protein/total protein; cP = centipoise.

CDC Copeland

Table 4.2 Quality data for CDC Copeland malting barley

Quality parameter	Alberta	Saskatchewan	Manitoba	Western Canada		
Year	**2025**	**2025**	**2025**	**2025**		**2020-2024**
Number of samples	6	14	0	20		
Tonnage represented by samples (thousands of tonnes)[a]	65	136	--	201		
Barley	**Avg_w[b]**	**Avg_w**	**Avg_w**	**Avg_w**	**Range**	**5-year avg**
Test weight (kg/hL)	68.0	66.8	--	**67.2**	63.1-70.0	65.1
1000 kernel weight (g)	45.8	46.2	--	**46.1**	42.6-50.4	43.6
Plump, over 7/64" sieve (%)	62.1	68.2	--	**66.3**	53.6-81.4	46.6[d]
Plump, over 6/64" sieve (%)	93.0	94.7	--	**94.2**	89.5-98.0	86.3[d]
Moisture[c] (%)	11.3	12.2	--	**11.9**	9.6-13.5	11.9
Protein (%, db)	11.5	11.9	--	**11.8**	10.4-12.4	12.4
β-Glucan (%, db)	3.86	3.83	--	**3.84**	3.47-4.11	3.78[d]
Germination, 4 mL (%)	99	99	--	**99**	97-100	99
Germination Index, 4 mL	0.79	0.81	--	**0.80**	0.73-0.88	0.82[d]
Germination, 8 mL (%)	92	94	--	**94**	86-98	94
Malt						
Yield (%)	90.9	91.1	--	**91.1**	89.1-91.9	90.4
Steep-out moisture (%)	46.0	45.9	--	**45.9**	45.4-47.7	45.8
Friability (%)	82.8	80.1	--	**81.0**	73.5-91.1	78.6
Moisture (%)	4.5	4.4	--	**4.4**	3.9-5.0	4.5
Protein (%, db)	11.0	11.7	--	**11.5**	10.2-12.2	12.3
Diastatic power (°, db)	160	164	--	**163**	148-195	167
α-Amylase (DU, db)	66.8	66.7	--	**66.7**	56.1-78.5	71.6
Wort						
Fine grind extract (%, db)	80.5	80.1	--	**80.2**	78.9-81.3	79.8
ß-Glucan (mg/L)	73	81	--	**78**	42-115	80
Viscosity (cP)	1.46	1.45	--	**1.45**	1.42-1.47	1.43
Soluble protein (%, db)	4.72	4.84	--	**4.80**	4.59-5.11	5.13
Ratio S/T (%)	42.7	41.5	--	**41.9**	39.3-48.7	42.0
FAN (mg/L)	207	203	--	**204**	191-221	195
Colour (º)	1.8	1.9	--	**1.9**	1.6-2.5	2.0

[a] Indicates weight of selected barley represented in this survey and does not represent weight of commercially selected barley.
[b] Values are weighted averages (Avg_w) based on tonnage represented by samples received.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.
[d] Indicates the 2023-2024 average.

db = dry basis; DU = dextrinizing units; S/T = soluble protein/total protein; cP = centipoise.

AAC Connect

Table 4.3 Quality data for AAC Connect malting barley

Quality parameter	Alberta	Saskatchewan	Manitoba	Western Canada		
Year	**2025**	**2025**	**2025**	**2025**		**2020-2024**
Number of samples	5	15	8	28		
Tonnage represented by samples (thousands of tonnes)[a]	49	123	32	204		
Barley	**Avg_w[b]**	**Avg_w**	**Avg_w**	**Avg_w**	**Range**	**5-year avg**
Test weight (kg/hL)	67.9	67.8	66.5	**67.6**	64.7-69.8	66.0
1000 kernel weight (g)	49.6	49.6	51.1	**49.8**	45.8-53.7	47.6
Plump, over 7/64" sieve (%)	66.0	67.2	75.5	**68.2**	45.7-88.5	43.8[d]
Plump, over 6/64" sieve (%)	96.6	95.9	97.5	**96.3**	91.2-98.7	88.2[d]
Moisture[c] (%)	11.3	12.2	13.0	**12.1**	9.4-13.6	12.2
Protein (%, db)	11.4	12.2	12.1	**12.0**	10.2-12.9	12.5
β-Glucan (%, db)	4.03	4.10	4.09	**4.08**	3.76-4.41	4.05[d]
Germination, 4 mL (%)	99	98	98	**98**	97-100	98
Germination Index, 4 mL	0.82	0.82	0.87	**0.83**	0.73-0.93	0.86[d]
Germination, 8 mL (%)	92	91	92	**92**	82-98	94
Malt						
Yield (%)	91.1	90.7	90.5	**90.7**	89.6-92.2	90.0
Steep-out moisture (%)	46.0	46.2	46.5	**46.1**	45.2-47.1	45.8
Friability (%)	83.6	80.2	83.2	**81.5**	73.4-92.9	79.6
Moisture (%)	4.7	4.6	4.2	**4.6**	4.0-5.4	4.8
Protein (%, db)	11.1	12.0	12.1	**11.8**	9.8-12.6	12.2
Diastatic power (°, db)	180	176	167	**176**	154-220	185
α-Amylase (DU, db)	78.2	82.6	77.8	**80.8**	67.5-96.3	83.3
Wort						
Fine grind extract (%, db)	81.4	81.1	81.5	**81.2**	80.0-82.7	80.9
ß-Glucan (mg/L)	53	63	52	**59**	36-116	75
Viscosity (cP)	1.43	1.43	1.45	**1.44**	1.41-1.46	1.41
Soluble protein (%, db)	4.78	4.89	5.06	**4.89**	4.56-5.30	5.03
Ratio S/T (%)	43.2	40.4	41.8	**41.4**	38.8-47.5	41.3
FAN (mg/L)	187	184	194	**187**	170-213	180
Colour (°)	1.8	1.9	2.3	**2.0**	1.6-2.4	2.0

[a] Indicates weight of selected barley represented in this survey and does not represent weight of commercially selected barley.
[b] Values are weighted averages (Avg_w) based on tonnage represented by samples received.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.
[d] Indicates the 2023-2024 average.

db = dry basis; DU = dextrinizing units; S/T = soluble protein/total protein; cP = centipoise.

CDC Churchill

Table 4.4 Quality data for CDC Churchill malting barley

Quality parameter	Alberta	Saskatchewan	Manitoba	Western Canada		
Year	**2025**	**2025**	**2025**	**2025**		**2020-2024**
Number of samples	13	10	4	27		-
Tonnage represented by samples (thousands of tonnes)[a]	107	88	3	198		-
Barley	**Avg_w[b]**	**Avg_w**	**Avg_w**	**Avg_w**	**Range**	**5-year avg**
Test weight (kg/hL)	68.4	67.2	66.8	**67.9**	63.0-71.7	66.6
1000 kernel weight (g)	46.6	44.5	46.6	**45.8**	41.0-50.1	45.1
Plump, over 7/64" sieve (%)	66.1	56.3	69.5	**62.3**	47.5-82.5	44.1[d]
Plump, over 6/64" sieve (%)	95.1	92.0	96.3	**93.9**	87.5-99.1	86.9[d]
Moisture[c] (%)	11.0	11.5	12.3	**11.2**	9.3-13.2	12.0
Protein (%, db)	11.2	11.8	12.2	**11.5**	9.3-12.7	12.0
β-Glucan (%, db)	3.88	3.93	4.03	**3.91**	3.45-4.45	3.93[d]
Germination, 4 mL (%)	99	99	97	**99**	96-100	98
Germination Index, 4 mL	0.79	0.82	0.84	**0.80**	0.67-0.89	0.82[d]
Germination, 8 mL (%)	89	87	92	**88**	76-99	90
Malt						
Yield (%)	90.7	91.4	90.6	**91.0**	89.7-92.8	90.7
Steep-out moisture (%)	46.2	46.3	47.2	**46.1**	45.4-47.7	45.6
Friability (%)	87.0	79.1	84.9	**83.4**	75.9-96.6	79.8
Moisture (%)	4.5	4.4	4.5	**4.5**	3.4-5.0	4.8
Protein (%, db)	10.5	11.4	11.8	**10.9**	9.6-12.2	11.9
Diastatic power (°, db)	152	156	146	**154**	124-182	160
α-Amylase (DU, db)	75.1	77.6	78.7	**76.2**	66.0-86.4	78.5
Wort						
Fine grind extract (%, db)	81.6	80.5	80.7	**81.0**	79.9-82.8	80.7
ß-Glucan (mg/L)	48	76	45	**60**	36-116	84
Viscosity (cP)	1.44	1.44	1.44	**1.44**	1.41-1.46	1.42
Soluble protein (%, db)	4.72	4.58	4.90	**4.66**	4.34-5.34	4.77
Ratio S/T (%)	44.7	40.4	41.6	**43.0**	38.7-55.7	40.4
FAN (mg/L)	198	183	199	**191**	166-224	175
Colour (º)	1.9	1.8	2.3	**1.8**	1.6-2.4	1.9

[a] Indicates weight of selected barley represented in this survey and does not represent weight of commercially selected barley.
[b] Values are weighted averages (Avg_w) based on tonnage represented by samples received.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.
[d] Indicates the 2023-2024 average.

db = dry basis; DU = dextrinizing units; S/T = soluble protein/total protein; cP = centipoise.

CDC Fraser

Table 4.5 Quality data for CDC Fraser malting barley

Quality parameter	Alberta	Saskatchewan	Manitoba	Western Canada		
Year	**2025**	**2025**	**2025**	**2025**		**2020-2024**
Number of samples	9	8	0	17		-
Tonnage represented by samples (thousands of tonnes)[a]	65	66	--	131		-
Barley	**Avg_w[b]**	**Avg_w**	**Avg_w**	**Avg_w**	**Range**	**5-year avg**
Test weight (kg/hL)	68.5	66.7	--	**67.6**	65.3-71.0	65.3
1000 kernel weight (g)	49.6	48.7	--	**49.2**	45.1-51.4	46.4
Plump, over 7/64" sieve (%)	80.4	79.6	--	**80.0**	67.3-86.7	59.9[d]
Plump, over 6/64" sieve (%)	96.9	97.1	--	**97.0**	93.0-98.7	90.8[d]
Moisture[c] (%)	11.3	11.9	--	**11.6**	9.9-12.7	12.1
Protein (%, db)	11.3	11.6	--	**11.5**	10.7-12.5	12.2
β-Glucan (%, db)	4.26	4.23	--	**4.25**	4.07-4.46	4.07[d]
Germination, 4 mL (%)	98	98	--	**98**	96-100	98
Germination Index, 4 mL	0.86	0.86	--	**0.86**	0.76-0.92	0.86[d]
Germination, 8 mL (%)	91	92	--	**92**	81-97	89
Malt						
Yield (%)	90.4	90.2	--	**90.3**	89.5-91.1	89.2
Steep-out moisture (%)	46.1	46.2	--	**46.1**	45.8-46.9	46.8
Friability (%)	87.7	87.5	--	**87.6**	83.2-91.6	85.1
Moisture (%)	4.4	4.5	--	**4.5**	4.2-4.9	4.8
Protein (%, db)	10.9	11.4	--	**11.1**	10.2-12.3	12.0
Diastatic power (°, db)	186	190	--	**188**	159-212	185
α-Amylase (DU, db)	71.2	76.2	--	**73.8**	63.9-83.0	82.3
Wort						
Fine grind extract (%, db)	81.7	81.0	--	**81.4**	80.1-82.2	80.7
ß-Glucan (mg/L)	58	50	--	**54**	35-87	70
Viscosity (cP)	1.45	1.43	--	**1.44**	1.42-1.48	1.41
Soluble protein (%, db)	4.98	4.91	--	**4.95**	4.50-5.43	5.26
Ratio S/T (%)	45.4	43.2	--	**44.3**	41.0-47.2	43.9
FAN (mg/L)	215	212	--	**213**	191-231	207
Colour (º)	2.2	2.2	--	**2.2**	1.9-2.6	2.3

[a] Indicates weight of selected barley represented in this survey and does not represent weight of commercially selected barley.
[b] Values are weighted averages (Avg_w) based on tonnage represented by samples received.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.
[d] Indicates the 2023-2024 average.

db = dry basis; DU = dextrinizing units; S/T = soluble protein/total protein; cP = centipoise.

CDC Goldstar

Table 4.6 Quality data for CDC Goldstar[a] malting barley

Quality parameter	**Western Canada**	
Year	**2025**	
Number of samples	3	
Barley	**Avg[b]**	**Range**
Test weight (kg/hL)	**68.8**	68.8-68.9
1000 kernel weight (g)	**47.2**	46.0-49.0
Plump, over 7/64" sieve (%)	**78.6**	74.8-85.9
Plump, over 6/64" sieve (%)	**96.4**	95.4-97.9
Moisture[c] (%)	**12.3**	11.8-12.6
Protein (%, db)	**12.2**	12.0-12.5
β-Glucan (%, db)	**4.50**	4.30-4.76
Germination, 4 mL (%)	**99**	98-100
Germination Index, 4 mL	**0.90**	0.85-0.94
Germination, 8 mL (%)	**85**	72-93
Malt		
Yield (%)	**90.4**	90.2-90.6
Steep-out moisture (%)	**46.3**	45.8-47.0
Friability (%)	**75.8**	71.0-79.3
Moisture (%)	**4.4**	4.0-4.6
Protein (%, db)	**11.8**	11.4-12.3
Diastatic power (°, db)	**193**	177-203
α-Amylase (DU, db)	**90.5**	89.8-90.9
Wort		
Fine grind extract (%, db)	**81.1**	80.7-81.6
ß-Glucan (mg/L)	**53**	36-79
Viscosity (cP)	**1.44**	1.44-1.45
Soluble protein (%, db)	**4.77**	4.64-4.90
Ratio S/T (%)	**40.4**	39.7-41.7
FAN (mg/L)	**204**	193-209
Colour (º)	**2.2**	2.1-2.2

[a] CDC Goldstar is a LOX-less malting variety currently offered under identity preserved contracts. It was evaluated in this survey for the first time, but due to the limited number of samples, the results may not fully reflect its grain characteristics or overall malting potential.
[b] Values represent the arithmetic averages (Avg) of samples analysed.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.

db = dry basis; DU = dextrinizing units; S/T = soluble/total protein; cP = centipoise

Bill Coors 100

Table 4.7 Quality data for Bill Coors 100[a] malting barley

Quality parameter	Western Canada	
Year	**2025**	
Number of samples	2	
Barley	**Avg[b]**	**Range**
Test weight (kg/hL)	**66.2**	65.7-66.7
1000 kernel weight (g)	**50.3**	46.9-53.7
Plump, over 7/64" sieve (%)	**83.5**	73.8-93.2
Plump, over 6/64" sieve (%)	**97.9**	96.4-99.3
Moisture[c] (%)	**11.6**	10.6-12.5
Protein (%, db)	**11.5**	10.8-12.2
β-Glucan (%, db)	**4.38**	4.34-4.41
Germination, 4 mL (%)	**98**	96-100
Germination Index, 4 mL	**0.84**	0.79-0.88
Germination, 8 mL (%)	**86**	86-87
Malt		
Yield (%)	**91.4**	90.5-92.2
Steep-out moisture (%)	**46.6**	46.4-46.7
Friability (%)	**86.8**	82.8-90.8
Moisture (%)	**4.7**	4.2-5.2
Protein (%, db)	**11.0**	10.3-11.6
Diastatic power (°, db)	**174**	163-184
α-Amylase (DU, db)	**74.7**	60.8-88.6
Wort		
Fine grind extract (%, db)	**81.4**	81.0-81.7
ß-Glucan (mg/L)	**82**	48-117
Viscosity (cP)	**1.46**	1.46-1.46
Soluble protein (%, db)	**4.94**	4.92-4.95
Ratio S/T (%)	**45.1**	42.6-47.5
FAN (mg/L)	**228**	218-237
Colour (º)	**2.3**	2.1-2.5

[a] Bill Coors 100 is a recently registered malting barley. It was evaluated in this survey for the first time, but due to the limited number of samples, the results may not fully reflect its grain characteristics or overall malting potential.
[b] Values represent arithmetic averages (Avg) of samples analysed.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.

db = dry basis; DU = dextrinizing units; S/T = soluble/total protein; cP = centipoise

SY Stanza

Table 4.8 Quality data for SY Stanza[a] malting barley

Quality parameter	Western Canada	
Year	**2025**	
Number of samples	3	
Barley	**Avg[b]**	**Range**
Test weight (kg/hL)	**63.2**	60.7-68.0
1000 kernel weight (g)	**50.8**	48.0-56.2
Plump, over 7/64" sieve (%)	**82.7**	76.1-95.1
Plump, over 6/64" sieve (%)	**97.6**	96.5-99.5
Moisture[c] (%)	**11.0**	10.7-11.6
Protein (%, db)	**12.2**	11.9-12.6
β-Glucan (%, db)	**4.11**	3.90-4.52
Germination, 4 mL (%)	**91**	90-94
Germination Index, 4 mL	**0.54**	0.45-0.68
Germination, 8 mL (%)	**36**	23-57
Malt		
Yield (%)	**91.3**	90.7-92.1
Steep-out moisture (%)	**48.3**	48.2-48.5
Friability (%)	**82.8**	80.1-85.8
Moisture (%)	**4.9**	4.7-5.2
Protein (%, db)	**12.0**	11.8-12.1
Diastatic power (°, db)	**171**	162-181
α-Amylase (DU, db)	**51.4**	48.9-53.8
Wort		
Fine grind extract (%, db)	**79.8**	79.6-80.1
ß-Glucan (mg/L)	**75**	57-84
Viscosity (cP)	**1.45**	1.44-1.46
Soluble protein (%, db)	**4.67**	4.24-4.97
Ratio S/T (%)	**39.0**	36.0-41.0
FAN (mg/L)	**207**	173-233
Colour (º)	**2.0**	1.8-2.1

[a] SY Stanza is a recently registered non-GN (glycosidic nitrile) malting barley currently being introduced to the market. It was evaluated in this survey for the first time, but due to the limited number of samples, the results may not fully reflect its grain characteristics or overall malting potential.
[b] Values represent arithmetic averages (Avg) of samples analysed.
[c] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.

db = dry basis; DU = dextrinizing units; S/T = soluble/total protein; cP = centipoise

CDC Armstrong

Table 4.9 Quality data for CDC Armstrong[a] hulless malting barley

Quality parameter	Western Canada
Year	**2025**
Number of samples	1
Barley	
1000 kernel weight (g)	**48.6**
Plump, over 7/64" sieve (%)	**46.8**
Plump, over 6/64" sieve (%)	**94.8**
Plump, over 5/64" sieve (%)	**99.6**
Moisture[b] (%)	**12.2**
Protein (%, db)	**13.2**
β-Glucan (%, db)	**4.48**
Germination, 4 mL (%)	**98**
Germination, 8 mL (%)	**98**
Malt	
Yield (%)	**88.0**
Steep-out moisture (%)	**50.3**
Friability (%)	**42.7**
Moisture (%)	**3.9**
Protein (%, db)	**13.0**
Diastatic power (°, db)	**140**
α-Amylase (DU, db)	**54.7**
Wort	
Fine grind extract (%, db)	**86.8**
ß-Glucan (mg/L)	**91**
Viscosity (cP)	**1.53**
Soluble protein (%, db)	**6.25**
Ratio S/T (%)	**48.1**
FAN (mg/L)	**258**

[a] CDC Armstrong is a newly registered hulless malting barley variety currently being introduced to the market. It was evaluated in this survey for the first time, but due to the limited number of samples, the results may not fully reflect its grain characteristics or overall malting potential.
[b] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.
db = dry basis; DU = dextrinizing units; S/T = soluble/total protein; cP = centipoise

CDC Pristine

Table 4.10 Quality data for CDC Pristine[a] hulless malting barley

Quality parameter	Western Canada
Year	**2025**
Number of samples	1
Barley	
1000 kernel weight (g)	**45.4**
Plump, over 7/64" sieve (%)	**37.8**
Plump, over 6/64" sieve (%)	**91.1**
Plump, over 5/64" sieve (%)	**98.9**
Moisture[b] (%)	**13.9**
Protein (%, db)	**13.4**
β-Glucan (%, db)	**4.41**
Germination, 4 mL (%)	**98**
Germination, 8 mL (%)	**96**
Malt	
Yield (%)	**87.0**
Steep-out moisture (%)	**50.5**
Friability (%)	**60.3**
Moisture (%)	**3.6**
Protein (%, db)	**13.1**
Diastatic power (°, db)	**167**
α-Amylase (DU, db)	**83.1**
Wort	
Fine grind extract (%, db)	**86.6**
ß-Glucan (mg/L)	**121**
Viscosity (cP)	**1.52**
Soluble protein (%, db)	**6.02**
Ratio S/T (%)	**46.1**
FAN (mg/L)	**241**
Colour (°)	**3.1**

[a] CDC Pristine is a newly registered hulless malting barley variety currently being introduced to the market. It was evaluated in this survey for the first time, but due to the limited number of samples, the results may not fully reflect its grain characteristics or overall malting potential.
[b] Moisture values are not representative of new crop moisture levels as samples were not collected or stored in moisture-proof containers.
db = dry basis; DU = dextrinizing units; S/T = soluble/total protein; cP = centipoise

Appendix - Methods

This section describes the analytical methods used at the Grain Research Laboratory. Unless otherwise specified, results for barley and malt are reported on a dry weight basis (db).

α-Amylase activity

α-Amylase activity was determined according to American Society of Brewing Chemists (ASBC) method MALT 7C by segmented flow analysis, using ASBC dextrinized starch as the substrate, and calibrated with standards that have been determined by method ASBC Malt 7A.

Arabinoxylans

Total arabinoxylan content in grain was determined after acid hydrolysis by gas-chromatographic (GC) analysis of alditol acetates using a flame ionization detector.

Assortment

Grain was passed through a Carter Dockage tester equipped with a No. 6 riddle to remove foreign material. Sorting of grain was conducted using the Pfeuffer Sortimat equipped with two slotted sieves: 7/64 inches (2.78 mm) and 6/64 inches (2.38 mm) x 3/4 inches.

β-Glucan content in wort

β-Glucan content was determined in malt extract by segmented flow analysis using Calcofluor staining of soluble, high molecular weight ß-glucan (ASBC Wort-18B).

β-Glucan content in grain

β-Glucan content was determined in ground barley using the Megazyme Streamlined Method – assay procedure for determination of mixed linkage β-glucan content in oat and barley flour (Association of Official Analytical Chemists (AOAC) Method 995.16, American Association for Cereal Chemistry (AACC) International Method 32-23, International Association for Cereal Chemistry (ICC) Standard Method No 168).

Diastatic power

Diastatic power was determined by segmented flow analysis, using an automated neocuproin assay for reducing sugars that is calibrated using malt standards analyzed following the official ferricyanide reducing sugar method (ASBC Malt 6A).

Fine-grind and coarse-grind extracts

Extracts were prepared using an Industrial Equipment Corporation (IEC) mash bath and the Congress mashing procedure from 45°C to 70°C. Specific gravities were determined at 20°C with an Anton Paar DMA 5000M digital density meter (ASBC Malt-4).

Free amino nitrogen (FAN)

Free amino nitrogen (FAN) was determined in fine extract by segmented flow analysis using the official ASBC method Wort-12.

Germination energy and index

Germination energy was determined by placing 100 kernels of barley on two layers of Whatman No.1 filter paper in a 9.0 cm diameter petri dish and adding 4.0 ml of purified water. Samples were germinated at 20ºC and 90% relative humidity in a germination chamber. Germinated kernels were removed after 24 h and 48 h and a final count was made at 72 h (ASBC Barley 3C). Germination index was calculated according to the formula: GI = [(3 x n1) + (2 x n2) + (1 x n3)] / (3 x 100). Maximum weight is given to the number of seeds germinated on the first day (n1) and less to those germinated on the second (n2) and third day (n3). GI can range from 0 to 1 and emphasizes both the percentage of germination and its speed. A higher GI value denotes a higher percentage and rate of germination.

Kolbach index (S/T)

Kolbach index was calculated using: (% soluble protein / % malt protein) x 100.

Micromalting

Malts were prepared using an Automated Phoenix Micromalting System designed to handle 24 barley samples of 500 g or 48 barley samples of 250 g per batch.

Malt mills

Fine grind malt was prepared using a Bühler-Miag disc mill set to fine grind. Coarse grind malt was prepared with the same mill set to coarse grind. The settings for fine and coarse grinds are calibrated quarterly, based on the screening of a ground ASBC standard check malt sample (ASBC Malt-4).

Moisture content of barley

Moisture content of barley was predicted on dockage-free barley using the Foss Infratec™ 1241 whole grain near-infrared analyzer.

Moisture content of malt

Moisture content of malt was determined on a ground sample by oven drying at 104ºC for 3 h (ASBC Malt-3).

Protein content (nitrogen x 6.25)

Barley protein content was predicted on dockage-free barley using the Foss Infratec™ 1241 whole grain near-infrared analyzer. The Infratec™ 1241 performance is checked annually against the reference combustion nitrogen analysis (CNA) method. Annual reference checks for barley protein and malt protein were measured by CNA using a LECO Model FP-628 CNA analyzer calibrated by ethylenediamine tetraacetic acid (EDTA). Samples were ground on a UDY Cyclone Sample Mill fitted with a 1.0 mm screen. A moisture analysis was also performed with results reported on a dry matter basis (ASBC Barley 7C).

Rapid Viscosity Analysis

The degree of pre-germination in barley was determined as described by Izydorczyk (2005) Using RVA to measure pre-germination in barley and predict germination energy after storage. Samples were analyzed using the AACRVA 4500 Visco Analyzer using the Stirring Number Program. Final viscosity values are reported in Rapid Visco Units (RVU).

Viscosity

Viscosity was measured on fine grind Congress Mash wort using an Anton Paar Lovis 2000 automated rolling ball viscometer (ASBC Wort-13B).

Water sensitivity

Water sensitivity was determined as described for germination energy, except that 8.0 ml of purified water was added to each petri dish (ASBC 3C, IOB and EBC procedure). The water sensitivity value is the numerical difference between the 4 ml and 8 ml tests.

Weight per thousand kernels

A 500 g sample of dockage-free barley was divided several times in a mechanical divider to obtain one representative sub-sample that weighed 40 g. All foreign material and broken kernels were removed from the 40 g portion and the net weight determined. Kernels were counted with a mechanical counter and the thousand kernel weight was calculated (as is basis) (Institute of Brewing's Recommended Methods of Analysis, Barley 1.3 (1997)).

Wort-soluble protein

Wort-soluble protein was determined spectrophotometrically using ASBC method Wort-17.

Wort colour

Wort color was determined spectrophotometrically using ASBC methods Wort-9 and Beer-10.

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