

CWRS Canada Western Red Spring

The most widely grown wheat class in Western Canada, CWRS is regarded for its superior milling and baking quality. This hard wheat has high protein content and high protein quality which means it can improve the quality of a blend if milled with lower-quality wheat.

Top Five CWRS Varieties Grown in 2024

- 1 AAC Brandon
- 2 AAC Wheatland
- 3 AAC Starbuck
- 4 AAC Viewfield
- 5 AAC Hodge

2024 EXECUTIVE SUMMARY

PRODUCTION

(5-year average, 2019-2023)

20.1 million tonnes

% of TOTAL WHEAT GROWN IN CANADA

63%



Advice from an Expert

CWRS from the 2024 crop year continues to provide high protein content with good gluten strength and extensibility. It remains an excellent choice as an improver wheat in blending situations.



Grading Factors

A very high proportion of the 2024 CWRS crop graded No. 1 or No. 2.



Protein

High protein content that is similar to the 5-year average.



Milling Quality

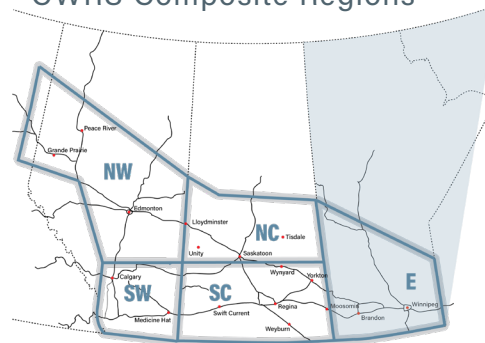
CWRS from the 2024 crop year has high test weight and good milling yield.



Application Performance

CWRS from the 2024 crop produced pan bread with good loaf volume, crumb colour and crumb structure, and noodles with good colour retention and texture.

FIGURE 1
2024 Western Canada
CWRS Composite Regions



WESTERN COMPOSITE

No. 1 CWRS Canada Western Red Spring

Quality Parameter ^a	Western Composite ^b		
	2024	2023	5 yr avg.
Wheat			
Test Weight, kg/hL	83	82	83
Weight Per 1000 Kernels, g	33.2	34.0	34.3
Protein Content, %	14.0	14.3	14.1
Protein Content, % (dry matter basis)	16.2	16.5	16.3
Wet Gluten Content, %	33.4	32.2	34.5
Gluten Index, %	88	88	81
Ash Content, %	1.50	1.36	1.46
Falling Number, s	409	399	395
Particle Size Index ^c , %	54	54	-
Milling Flour Yield Bühler Laboratory Mill			
Total Products Basis, %	75.5	75.1	75.1
0.50% Ash Basis, %	77.5	78.6	78.1

EASTERN COMPOSITE

No. 1 CWRS Canada Western Red Spring

Quality Parameter ^a	Eastern Composite ^b		
	2024	2023	5 yr avg.
Wheat			
Test Weight, kg/hL	84	83	83
Weight Per 1000 Kernels, g	33.8	37.2	34.6
Protein Content, %	14.1	14.1	14.3
Protein Content, % (dry matter basis)	16.3	16.3	16.6
Wet Gluten Content, %	34.2	32.9	34.6
Gluten Index, %	83	90	82
Ash Content, %	1.59	1.41	1.52
Falling Number, s	392	384	384
Particle Size Index ^c , %	54	53	-
Milling Flour Yield Bühler Laboratory Mill			
Total Products Basis, %	75.7	75.1	75.8
0.50% Ash Basis, %	77.2	77.6	77.6

PRAIRIE COMPOSITE

No. 2 CWRS Canada Western Red Spring

Quality Parameter ^a	Prairie Composite ^b		
	2024	2023	5 yr avg.
Wheat			
Test Weight, kg/hL	81	82	81
Weight Per 1000 Kernels, g	33.0	36.1	35.0
Protein Content, %	14.0	13.5	13.9
Protein Content, % (dry matter basis)	16.2	15.6	16.0
Wet Gluten Content, %	32.8	29.5	32.7
Gluten Index, %	90	94	84
Ash Content, %	1.58	1.36	1.50
Falling Number, s	384	372	357
Particle Size Index ^c , %	56	52	-
Milling Flour Yield Bühler Laboratory Mill			
Total Products Basis, %	75.2	75.8	75.5
0.50% Ash Basis, %	77.7	79.8	78.0

^a Data are reported on a 13.5% moisture basis.

^b Refer to crop region map (Figure 1). Western composite = NW, SW, NC, SC regions (non-shaded area); Eastern composite = E region (shaded area); Prairie composite = all regions.

^c Unable to calculate 5-year average for particle size index due to change in method.

Harvest assessment composites represent grain available for export and were prepared from samples received up to October 15, 2024. Composites were graded according to Export Grade Determinant Tables in the Official Grain Grading Guide (<https://www.grainscanada.gc.ca/en/grain-quality/official-grain-grading-guide/>). Milling, analytical and end-product analysis was conducted by Cereals Canada following the Methods of Analysis on Cereals Canada's website (<https://cerealscanada.ca/analytical-methods/>).

Flour ^a	2024			2023			5-Year Average		
	Straight Grade 75.5%	74%	60%	Straight Grade 75.1%	74%	60%	Straight Grade 75.1%	74%	60%
Extraction									
Protein Content, %	13.3	13.2	12.6	13.6	13.5	13.1	13.5	13.3	12.9
Protein Loss, %	0.7	0.8	1.4	0.7	0.8	1.2	0.6	0.8	1.2
Wet Gluten Content, %	35.0	35.0	33.9	36.8	36.9	35.5	36.4	36.5	34.9
Gluten Index, %	98	97	99	95	95	97	94	94	96
Ash Content, %	0.46	0.44	0.39	0.43	0.43	0.38	0.44	0.43	0.39
Colour, L*	84.7	85.1	85.5	84.6	85.1	85.4	84.8	85.0	85.6
Starch Damage, UCD	24.0	24.5	24.5	24.2	24.2	23.5	24.7	24.8	24.6
Amylograph Peak Viscosity, BU	690	689	728	584	597	693	622	644	687
Farinograph									
Absorption, %	61.8	62.0	61.8	62.4	62.2	61.8	64.4	64.5	64.0
Dough Development Time, min	8.5	7.7	9.6	8.4	7.9	10.9	8.3	8.2	9.8
Stability, min	24.0	24.7	47.7	16.7	22.5	48.1	23.4	25.4	39.4
Mixing Tolerance Index, BU	12	14	6	21	14	9	16	14	8
Extensograph (135 min)									
Max. Resistance (Rmax), BU	725	780	818	695	801	880	654	696	764
Extensibility (length), cm	21.4	21.2	18.7	21.6	21.0	18.1	21.2	20.8	18.8
Area, cm ²	195	210	183	187	205	190	172	179	174
Alveograph									
P (height x 1), mm	100	102	122	108	114	121	114	119	128
L (length), mm	209	214	169	181	169	160	150	151	136
P/L	0.48	0.48	0.72	0.60	0.67	0.76	0.85	0.87	1.02
W, 10 ⁻⁴ J	616	643	648	594	607	611	553	583	586
Ie, %	64.7	65.7	65.6	64.7	66.1	65.7	67.7	67.7	67.7
Baking (No Time Dough)									
Absorption, %	65	-	-	64	-	-	67	-	-
Mixing Time, min	7.6	-	-	6.4	-	-	7.1	-	-
Specific Volume, cm ³ /g	7.3	-	-	7.7	-	-	7.5	-	-
Total Bread Score (out of 10)	9.5	-	-	9.3	-	-	9.3	-	-
Crumb Colour, L*	80.5	-	-	80.9	-	-	80.3	-	-
Baking (Sponge & Dough)									
Absorption, %	64	-	65	63	-	64	67	-	66
Mixing Time, min	7.9	-	8.5	7.6	-	8.5	8.2	-	8.5
Specific Volume, cm ³ /g	7.1	-	6.9	7.1	-	6.9	7.1	-	7.0
Total Bread Score (out of 10)	9.4	-	9.5	9.2	-	9.6	9.5	-	9.8
Crumb Colour, L*	82.4	-	82.7	80.9	-	82.4	81.8	-	82.7
Noodles (Fresh Yellow Alkaline)									
Colour (3h / 24h) L*	-	75.2 / 70.4	75.7 / 71.6	-	72.8 / 68.6	74.6 / 70.2	-	74.2 / 69.4	74.5 / 70.0
a*	-	0.06 / 0.61	-0.09 / 0.32	-	0.09 / 0.69	-0.14 / 0.39	-	0.10 / 0.67	0.04 / 0.55
b*	-	25.3 / 25.2	26.2 / 25.3	-	25.9 / 24.9	26.0 / 25.0	-	25.8 / 24.8	25.9 / 24.7
MCS (3.5 min.) ^c , g/mm ²	-	39.8	35.6	-	38.5	38.7	-	39.0	37.0
Noodles (Fresh White Salted)									
Colour (3h / 24h) L*	-	75.7 / 72.8	76.9 / 74.4	-	74.9 / 71.8	75.2 / 72.9	-	75.2 / 72.0	76.3 / 73.5
a*	-	1.59 / 2.00	1.28 / 1.53	-	1.66 / 2.16	1.36 / 1.63	-	1.72 / 2.16	1.39 / 1.67
b*	-	25.5 / 24.8	25.1 / 24.8	-	25.2 / 24.7	25.4 / 24.9	-	25.0 / 24.4	25.0 / 24.6
MCS (3.5 min.) ^c , g/mm ²	-	29.0	26.3	-	28.3	28.0	-	27.8	26.0

^a Data are reported on a 14.0% moisture basis for flour except Alveograph which is reported on a 15.0% moisture basis and starch damage which is on as is basis.

^b Refer to crop region map (Figure 1, non-shaded area).

^c Maximum cutting stress of noodles cooked to 3.5 min.

Flour ^a	2024		2023		5-Year Average	
	Straight Grade 75.7%	74%	Straight Grade 75.1%	74%	Straight Grade 75.8%	74%
Extraction						
Protein Content, %	13.1	13.0	13.3	13.3	13.4	13.3
Protein Loss, %	1.0	1.1	0.8	0.8	0.9	1.0
Wet Gluten Content, %	34.9	34.6	33.6	34.7	36.0	35.8
Gluten Index, %	95	99	96	99	95	97
Ash Content, %	0.47	0.44	0.45	0.45	0.46	0.43
Colour, L*	84.6	85.0	84.5	84.7	84.6	85.1
Starch Damage, UCD	23.3	23.6	23.8	23.3	24.1	24.0
Amylograph Peak Viscosity, BU	644	691	562	540	601	608
Farinograph						
Absorption, %	61.8	62.1	62.0	61.9	63.7	63.6
Dough Development Time, min	6.9	8.1	8.5	7.7	7.9	7.9
Stability, min	18.0	18.2	17.5	17.3	20.9	22.9
Mixing Tolerance Index, BU	9	16	20	15	18	18
Extensograph (135 min)						
Max. Resistance (Rmax), BU	608	715	746	790	602	685
Extensibility (length), cm	21.5	20.5	20.6	20.3	22.2	21.3
Area, cm ²	164	182	190	196	168	180
Alveograph						
P (height x 1), mm	91	95	101	111	102	108
L (length), mm	218	197	183	157	167	156
P/L	0.42	0.48	0.55	0.71	0.65	0.73
W, 10 ⁻⁴ J	577	575	555	554	547	554
Ie, %	64.7	65.6	63.8	65.3	67.3	68.4
Baking (No Time Dough)						
Absorption, %	65	-	65	-	67	-
Mixing Time, min	6.9	-	6.6	-	6.8	-
Specific Volume, cm ³ /g	7.8	-	7.5	-	7.7	-
Total Bread Score (out of 10)	9.8	-	9.2	-	9.6	-
Crumb Colour, L*	80.4	-	79.1	-	79.8	-
Baking (Sponge & Dough)						
Absorption, %	64	-	64	-	66	-
Mixing Time, min	7.8	-	7.1	-	8.0	-
Specific Volume, cm ³ /g	7.1	-	7.2	-	7.3	-
Total Bread Score (out of 10)	9.4	-	9.4	-	9.6	-
Crumb Colour, L*	80.8	-	80.6	-	81.2	-
Noodles (Fresh Yellow Alkaline)						
Colour (3h / 24h) L*	-	74.2 / 70.4	-	72.0 / 68.0	-	73.3 / 69.1
a*	-	0.35 / 0.68	-	0.21 / 0.67	-	0.31 / 0.71
b*	-	25.3 / 24.8	-	25.7 / 24.8	-	25.6 / 24.6
MCS (3.5 min.) ^c , g/mm ²	-	34.6	-	35.0	-	36.7
Noodles (Fresh White Salted)						
Colour (3h / 24h) L*	-	76.7 / 73.3	-	74.3 / 71.6	-	75.2 / 72.0
a*	-	1.66 / 2.15	-	1.72 / 2.15	-	1.89 / 2.29
b*	-	25.0 / 24.4	-	24.7 / 24.2	-	24.7 / 24.1
MCS (3.5 min.) ^c , g/mm ²	-	25.9	-	25.1	-	26.2

^a Data are reported on a 14.0% moisture basis for flour except Alveograph which is reported on a 15.0% moisture basis and starch damage which is on as is basis.

^b Refer to crop region map (Figure 1, shaded area).

^c Maximum cutting stress of noodles cooked to 3.5 min.

No. 2 CWRS Prairie Composite^b

Flour ^a	2024		2023		5-Year Average	
Extraction	Straight Grade 75.2%	74%	Straight Grade 75.8%	74%	Straight Grade 75.5%	74% ^d
Protein Content, %	13.0	13.1	12.8	12.7	13.0	13.0
Protein Loss, %	1.0	0.9	0.7	0.8	0.9	0.9
Wet Gluten Content, %	34.1	34.2	32.7	34.0	34.7	35.2
Gluten Index, %	100	100	98	98	96	95
Ash Content, %	0.45	0.43	0.42	0.41	0.45	0.42
Colour, L*	84.9	84.6	84.5	84.8	84.7	84.9
Starch Damage, UCD	23.4	23.4	23.5	23.3	24.2	23.8
Amylograph Peak Viscosity, BU	675	676	475	497	472	493
Farinograph						
Absorption, %	61.3	61.5	61.3	61.0	63.3	63.1
Dough Development Time, min	9.4	8.7	6.5	8.6	7.3	8.2
Stability, min	35.8	41.7	14.6	171	18.4	22.7
Mixing Tolerance Index, BU	14	6	18	21	17	17
Extensograph (135 min)						
Max. Resistance (Rmax), BU	782	826	626	879	611	728
Extensibility (length), cm	19.3	19.2	23.4	19.9	22.2	20.4
Area, cm ²	185	201	187	215	169	183
Alveograph						
P (height x 1), mm	95	97	102	111	105	109
L (length), mm	184	188	176	161	147	148
P/L	0.52	0.52	0.58	0.69	0.77	0.79
W, 10 ⁻⁴ J	554	575	550	570	507	538
Ie, %	66.1	65.9	64.3	66.0	67.3	67.5
Baking (No Time Dough)						
Absorption, %	65	-	65	-	67	-
Mixing Time, min	7.6	-	6.7	-	6.8	-
Specific Volume, cm ³ /g	7.4	-	7.9	-	7.6	-
Total Bread Score (out of 10)	9.1	-	9.2	-	9.3	-
Crumb Colour, L*	80.6	-	80.0	-	80.3	-
Baking (Sponge & Dough)						
Absorption, %	64	-	64	-	66	-
Mixing Time, min	7.8	-	6.5	-	7.8	-
Specific Volume, cm ³ /g	7.2	-	7.2	-	7.3	-
Total Bread Score (out of 10)	9.5	-	9.5	-	9.7	-
Crumb Colour, L*	81.7	-	80.9	-	81.5	-
Noodles (Fresh Yellow Alkaline)						
Colour (3h / 24h) L*	-	74.1 / 70.1	-	73.3 / 69.4	-	73.3 / 69.1
a*	-	0.17 / 0.59	-	-0.05 / 0.56	-	0.21 / 0.76
b*	-	25.4 / 24.5	-	24.9 / 24.4	-	25.1 / 24.2
MCS (3.5 min.) ^c , g/mm ²	-	37.9	-	36.4	-	37.4
Noodles (Fresh White Salted)						
Colour (3h / 24h) L*	-	76.7 / 73.8	-	74.4 / 71.7	-	75.2 / 72.2
a*	-	1.58 / 2.00	-	1.45 / 1.81	-	1.63 / 1.99
b*	-	24.8 / 24.4	-	24.2 / 23.3	-	23.9 / 23.4
MCS (3.5 min.) ^c , g/mm ²	-	28.7	-	26.7	-	26.9

^a Data are reported on a 14.0% moisture basis for flour except Alveograph which is reported on a 15.0% moisture basis and starch damage which is on as is basis.

^b Refer to crop region map (Figure 1, all regions).

^c Maximum cutting stress of noodles cooked to 3.5 min.

^d Values represent 4-year average for No. 2 CWRS 74% extraction.