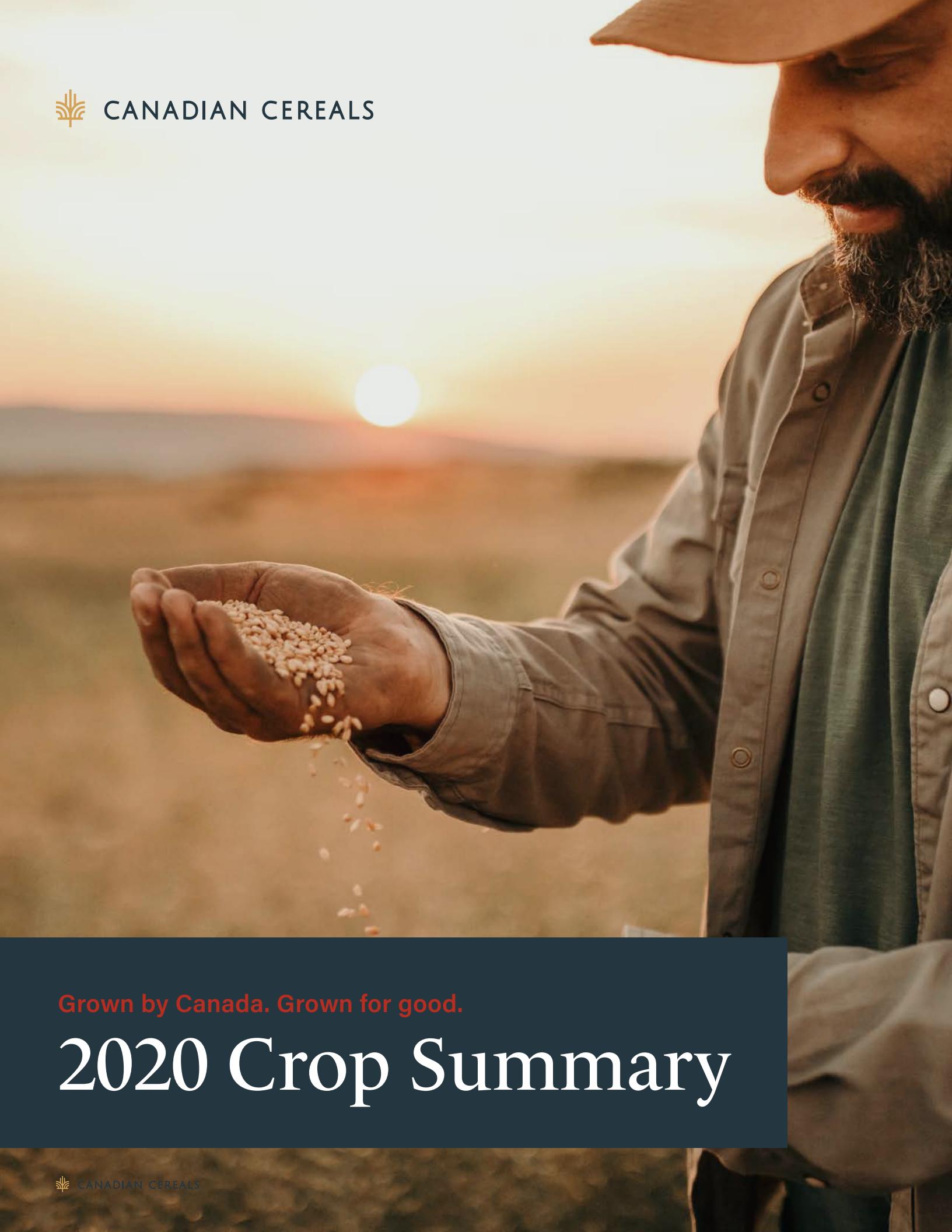


CANADIAN CEREALS

Grown by Canada. Grown for good.

2020 Crop Summary

CANADIAN CEREALS

2020-21

CWRS Canada Western Red Spring

CWRS Major Grading Factors

	No. 1	No. 2	No. 3	All Grades (other than 1&2)
Number of Samples Graded	2338	1093	306	4032
% of all grades	58.0%	27.1%	7.6%	100
Grading Factor*		% of grade		
Frost	n/a	10.4%	4.6%	17.3%
Non-HVK	n/a	10.8%	n/a	10.8%
Fusarium Damage	n/a	3.8%	0.7%	4.8%
Midge	n/a	3.2%	0.5%	3.8%
Severely Sprouted	n/a	2.3%	1.7%	6.2%

Source: Canadian Grain Commission
*A sample can be downgraded for more than one factor

Top Five CWRS Varieties Grown in 2020

1. AAC Brandon
2. AAC Viewfield
3. CDC Landmark
4. AAC Elie
5. AAC Redberry

CWRS Protein Content, %

Province	Mean	Standard Deviation
No. 1 CWRS		
Manitoba	14.0	0.9
Saskatchewan	13.4	1.3
Alberta and B.C.	13.1	1.4
Western Canada	13.4	1.3
No. 2 CWRS		
Manitoba	13.8	1.0
Saskatchewan	12.8	1.3
Alberta and B.C.	12.8	1.4
Western Canada	13.1	1.3
All Grades		
Manitoba	13.9	0.9
Saskatchewan	13.2	1.3
Alberta and B.C.	13.1	1.4
Western Canada	13.3	1.3

Grading factor and protein content analysis conducted by Canadian Grain Research Laboratory as of November 4, 2020, basis the Harvest Sample Program.

WESTERN COMPOSITE

No. 1 CWRS

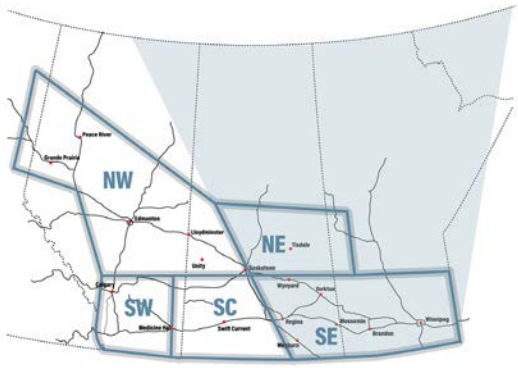
Canada Western Red Spring

Quality Parameter [a]	2020 Western Composite [b]
Wheat	
Test Weight, kg/hL	83.2
Weight Per 1000 Kernels, g	37.0
Protein Content, %	13.2
Protein Content, % (dry matter basis)	15.3
Ash Content, %	1.51
Falling Number, s	392
Particle Size Index, %	48

Milling Flour Yield Bühler Laboratory Mill	
Total Products Basis, %	74.5
0.50% Ash Basis, %	77.0

FIGURE 1

Western Canadian CWRS Composite regions



Quality Parameter [a]	2020 Western Composite [b]		
Flour [c]			
Extraction, %	Straight Grade 74.5%	74%	60%
Protein Content, %	12.5	12.4	11.9
Protein Loss, %	0.7	0.8	1.3
Wet Gluten Content, %	35.7	35.9	33.9
Gluten Index, %	87	90	92
Ash Content, %	0.45	0.46	0.40
Minolta colour - L*	85.4	85.1	85.9
Starch Damage, UCD	26.6	26.7	27.0
Amylograph Peak Viscosity, BU	659	677	716
Farinogram [c]			
Absorption, %	67.2	67.8	67.0
Dough Development Time (DDT), min	8.1	7.9	7.8
Stability, min	14.2	14.1	17.2
Mixing Tolerance Index, (MTI) BU	19	19	17
Extensogram			
Maximum Resistance (Rmax), BU	534	532	569
Extensibility (Length), cm	21.8	20.3	19.8
Area, cm^2	146	132	144
Alveogram			
P (height x 1.1), mm	133	137	144
L (length), mm	93	96	85
P/L	1.43	1.43	1.69
W, 10-4 J	462	490	466
Ie, %	66.8	67.2	66.5
Baking (No Time Dough)			
Absorption, %	71	n/a	n/a
Mixing Time, min	6.3	n/a	n/a
Specific Volume, cm^3/g	7.0	n/a	n/a
Total Bread Score (out of 10)	9.4	n/a	n/a
Baking (Sponge & Dough)			
Absorption, %	70	n/a	68
Mixing Time, min	8.2	n/a	7.5
Specific Volume, cm^3/g	6.6	n/a	6.7
Total Bread Score (out of 10)	9.9	n/a	10.0
Noodles (Fresh Yellow Alkaline)			
Colour (3h / 24h) L*	n/a	73.5 / 68.2	75.8 / 70.6
a*	n/a	0.20 / 0.96	-0.13 / 0.58
b*	n/a	26.5 / 25.3	26.2 / 25.3
Cooked Noodle Max. Cutting Stress g/mm^2			
Cook Time - 3.5 min	n/a	41.8	39.0
Noodles (Fresh White Salted)			
Colour (3h / 24h) L*	n/a	75.5 / 72.2	76.7 / 74.0
a*	n/a	1.60 / 2.07	1.18 / 1.56
b*	n/a	25.2 / 24.5	25.1 / 24.6
Cooked Noodle Max. Cutting Stress g/mm^2			
Cook Time - 3.5 min	n/a	26.2	24.6

[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

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

n/a = Not available (testing will not be conducted).

Grading factor and protein content analysis conducted by Canadian Grain Research Laboratory as of November 4, 2020, basis the Harvest Sample Program.

EASTERN COMPOSITE

No. 1 CWRS

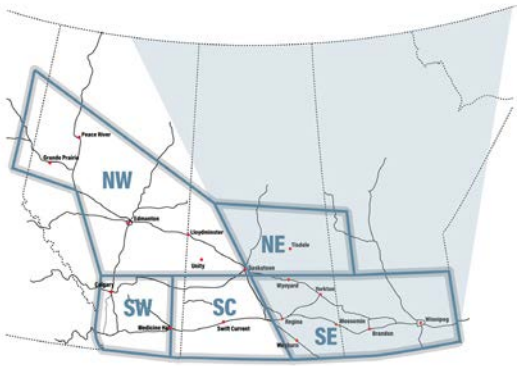
Canada Western Red Spring

Quality Parameter [a]	2020 Eastern Composite [b]
Wheat	
Test Weight, kg/hL	81.8
Weight Per 1000 Kernels, g	36.3
Protein Content, %	13.7
Protein Content, % (dry matter basis)	15.9
Ash Content, %	1.55
Falling Number, s	413
Particle Size Index, %	50

Milling Flour Yield Bühler Laboratory Mill	
Total Products Basis, %	76.0
0.50% Ash Basis, %	77.0

FIGURE 1

Western Canadian CWRS Composite regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

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

n/a = Not available (testing will not be conducted).

Milling, analytical, and end product analysis conducted by Cigi, the Technical Division of Cereals Canada, based on Cereals Canada Harvest Assessment samples representing grain available for export.

Quality Parameter [a]	2020 Eastern Composite [b]	
Flour [c]		
Extraction, %	Straight Grade 76%	74%
Protein Content, %	13.0	12.8
Protein Loss, %	0.7	0.9
Wet Gluten Content, %	37.1	35.9
Gluten Index, %	92	93
Ash Content, %	0.48	0.42
Minolta colour - L*	84.8	85.4
Starch Damage, UCD	25.7	26.3
Amylograph Peak Viscosity, BU	682	660
Farinogram		
Absorption, %	66.3	66.0
Dough Development Time (DDT), min	7.7	8.0
Stability, min	13.5	15.4
Mixing Tolerance Index, (MTI) BU	18	19
Extensogram		
Maximum Resistance (Rmax), BU	527	615
Extensibility (Length), cm	21.6	20.6
Area, cm^2	145	159
Alveogram		
P (height x 1.1), mm	117	125
L (length), mm	123	112
P/L	0.95	1.12
W, 10-4 J	516	519
Ie, %	68.1	69.7
Baking (No Time Dough)		
Absorption, %	69	n/a
Mixing Time, min	6.3	n/a
Specific Volume, cm^3/g	7.3	n/a
Total Bread Score (out of 10)	9.9	n/a
Baking (Sponge & Dough)		
Absorption, %	68	n/a
Mixing Time, min	7.7	n/a
Specific Volume, cm^3/g	6.9	n/a
Total Bread Score (out of 10)	9.8	n/a
Noodles (Fresh Yellow Alkaline)		
Colour (3h / 24h) L*	n/a	73.4 / 68.9
a*	n/a	0.25 / 0.78
b*	n/a	25.9 / 24.8
Cooked Noodle Max. Cutting Stress g/mm^2		
Cook Time - 3.5 min	n/a	42.0
Noodles (Fresh White Salted)		
Colour (3h / 24h) L*	n/a	75.1 / 71.3
a*	n/a	1.88 / 2.32
b*	n/a	24.9 / 24.5
Cooked Noodle Max. Cutting Stress g/mm^2		
Cook Time - 3.5 min	n/a	27.2

PRAIRIE COMPOSITE

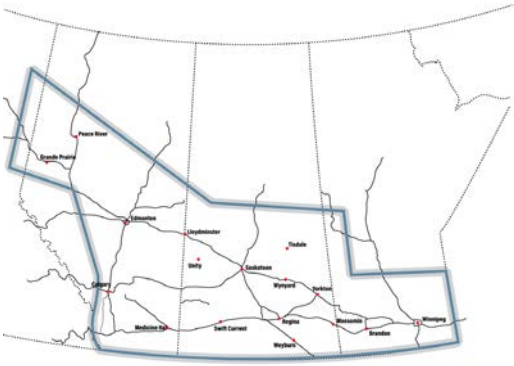
No. 2 CWRS

Canada Western Red Spring

Quality Parameter [a]	2020 Prairie Composite [b]
Wheat	
Test Weight, kg/hL	82.4
Weight Per 1000 Kernels, g	37.8
Protein Content, %	13.2
Protein Content, % (dry matter basis)	15.3
Ash Content, %	1.56
Falling Number, s	368
Particle Size Index, %	51
Milling Flour Yield Bühler Laboratory Mill	
Total Products Basis, %	75.5
0.50% Ash Basis, %	76.0

FIGURE 2

Western Canadian Prairie Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

[b] Refer to crop region map (Figure 2).

n/a = Not available (testing will not be conducted).

Milling, analytical, and end product analysis conducted by Cigi, the Technical Division of Cereals Canada, based on Cereals Canada Harvest Assessment samples representing grain available for export.

Quality Parameter [a]	2020 Prairie Composite [b]	
Flour		
Extraction, %	Straight Grade 76%	74%
Protein Content, %	12.5	12.3
Protein Loss, %	0.6	0.9
Wet Gluten Content, %	35.1	35.3
Gluten Index, %	89	85
Ash Content, %	0.49	0.46
Minolta colour - L*	85.0	85.3
Starch Damage, UCD	26.1	26.0
Amylograph Peak Viscosity, BU	451	464
Farinogram		
Absorption, %	66.4	66.2
Dough Development Time (DDT), min	7.2	8.2
Stability, min	12.0	12.8
Mixing Tolerance Index, (MTI) BU	20	24
Extensogram		
Maximum Resistance (Rmax), BU	448	517
Extensibility (Length), cm	23.0	21.2
Area, cm^2	131	136
Alveogram		
P (height x 1.1), mm	121	125
L (length), mm	108	106
P/L	1.12	1.18
W, 10-4 J	464	478
Ie, %	65.7	66.4
Baking (No Time Dough)		
Absorption, %	70	n/a
Mixing Time, min	5.8	n/a
Specific Volume, cm^3/g	6.8	n/a
Total Bread Score (out of 10)	9.4	n/a
Baking (Sponge & Dough)		
Absorption, %	69	n/a
Mixing Time, min	7.7	n/a
Specific Volume, cm^3/g	7.0	n/a
Total Bread Score (out of 10)	10.0	n/a
Noodles (Fresh Yellow Alkaline)		
Colour (3h / 24h) L*	n/a	72.8 / 68.0
a*	n/a	0.38 / 1.12
b*	n/a	25.6 / 24.6
Cooked Noodle Max. Cutting Stress g/mm^2		
Cook Time - 3.5 min	n/a	39.6
Noodles (Fresh White Salted)		
Colour (3h / 24h) L*	n/a	75.6 / 71.6
a*	n/a	1.61 / 2.08
b*	n/a	23.7 / 23.0
Cooked Noodle Max. Cutting Stress g/mm^2		
Cook Time - 3.5 min	n/a	27.4

2020-21

CWAD Canada Western Amber Durum

CWAD Major Grading Factors

	No. 1	No. 2	No. 3	No. 4	No. 5	All Grades
Number of Samples Graded	623	240	125	19	32	1039
% of all grades	60.0%	23.0%	12.0%	1.8%	3.1%	100%
Grading Factor*	% of grade					
Test weight	n/a	9.1%	4.6%	0.1%	0.0%	11.6%
Midge	n/a	7.7%	0.0%	0.0%	4,0%	7.7%
Non-HVK	n/a	3.0%	0.8%	0.3%	0.0%	4.0%
Frost	n/a	2.4%	1.6%	0.7%	0.3%	4.8%
Fusarium damage	n/a	n/a	2.4%	n/a	0.2%	2.7%

Source: Canadian Grain Commission
*A sample can be downgraded for more than one factor

Top Five CWAD Varieties Grown in 2020

1. Transcend
2. CDC Precision
3. Brigade
4. AAC Spitfire
5. Strongfield

CWAD Protein Content, %

Province	Mean	Standard Deviation
No. 1 CWAD		
Saskatchewan	13.7	1.6
Alberta and B.C.	13.4	1.4
Western Canada	13.6	1.6
No. 2 CWAD		
Saskatchewan	14.0	2.1
Alberta and B.C.	14.2	1.9
Western Canada	14.0	2.1
No. 3 CWAD		
Saskatchewan	14.1	2.0
Alberta and B.C.	14.9	1.9
Western Canada	14.1	2.0
All Grades		
Saskatchewan	13.8	1.9
Alberta and B.C.	13.7	1.7
Western Canada	13.8	1.8

Grading factor and protein content analysis conducted by Canadian Grain Research Laboratory as of November 4, 2020, basis the Harvest Sample Program.

PRAIRIE COMPOSITE

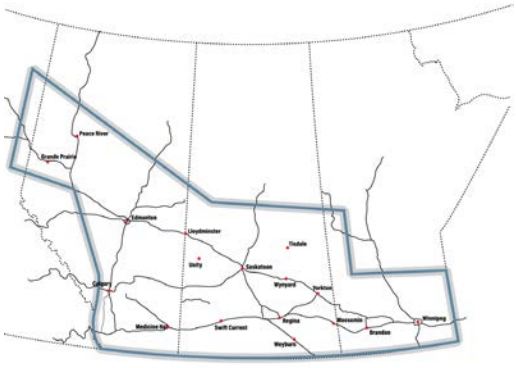
No. 1 CWAD

Canada Western Amber Durum

Quality Parameter [a]	2020 Prairie Composite [b]
Wheat	
Test Weight, kg/hL	81.6
Weight Per 1000 Kernels, g	41.1
Vitreous Kernels, %	96
Protein Content, %	14.1
Protein Content, % (dry matter basis)	16.3
Ash Content, %	1.61
Falling Number, s	470
Particle Size Index, %	35
Milling Semolina Yield Bühler Laboratory Mill	
Total Milling Yield, %	68.3
Semolina Yield, %	64.1
Semolina	
Protein Content, %	13.1
Protein Loss, %	1.0
Wet Gluten Content, %	36.5
Gluten Index, %	63
Ash Content, %	0.71
Yellow Pigment Content, ppm	11.5
Minolta Colour - b* (yellowness)	31.4
Granulation	
> 425 µm, %	0.7
> 250 µm, %	47.5
> 180 µm, %	32.6
> 150 µm, %	8.1
< 150 µm, %	11.0
Semolina Speck Count per 50 cm²	
Total Specks	7
Dark Specks	1
Large Specks (≥0.06 mm²)	5
Alveogram	
P (height x 1.1), mm	86
L (length), mm	95
P/L	0.91
W, 10-4 J	264
Ie, %	54.7
Spaghetti	
Firmness @ 9 min cook time, g	803
Cooking Loss, %	4.50
Colour L*	73.3
a*	4.88
b*	67.4

FIGURE 2

Western Canadian Prairie Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis semolina.

[b] Refer to crop region map (Figure 2).

Milling, analytical, and end product analysis conducted by Cigi, the Technical Division of Cereals Canada, based on Cereals Canada Harvest Assessment samples representing grain available for export.

PRAIRIE COMPOSITE

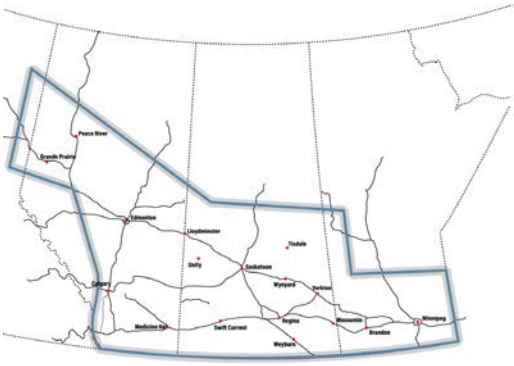
No. 2 CWAD

Canada Western Amber Durum

Quality Parameter [a]	2020 Prairie Composite [b]
Wheat	
Test Weight, kg/hL	80.5
Weight Per 1000 Kernels, g	38.5
Vitreous Kernels, %	94
Protein Content, %	13.8
Protein Content, % (dry matter basis)	15.9
Ash Content, %	1.66
Falling Number, s	450
Particle Size Index, %	35
Milling Semolina Yield Bühler Laboratory Mill	
Total Milling Yield, %	66.6
Semolina Yield, %	62.4
Semolina	
Protein Content, %	12.9
Protein Loss, %	0.9
Wet Gluten Content, %	33.7
Gluten Index, %	64
Ash Content, %	0.75
Yellow Pigment Content, ppm	11.5
Minolta Colour - b* (yellowness)	31.3
Yellow Pigment Content, ppm	
> 425 µm, %	0.6
> 250 µm, %	47.2
> 180 µm, %	33.1
> 150 µm, %	8.0
< 150 µm, %	11.1
Semolina Speck Count per 50 cm²	
Total Specks	7
Dark Specks	1
Large Specks (≥0.06 mm²)	4
Alveogram	
P (height x 1.1), mm	86
L (length), mm	97
P/L	0.89
W, 10-4 J	266
Ie, %	55.2
Spaghetti	
Firmness @ 9 min cook time, g	814
Cooking Loss, %	4.84
Colour L*	73.4
a*	4.66
b*	68.0

FIGURE 2

Western Canadian Prairie Composite Regions



[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for semolina.

[b] Refer to crop region map (Figure 2).

Milling, analytical, and end product analysis conducted by Cigi, the Technical Division of Cereals Canada, based on Cereals Canada Harvest Assessment samples representing grain available for export.

2020-21

CPSR Canada Prairie Spring Red

CPSR Major Grading Factors

	No. 1	No. 2	All Grades
Number of Samples Graded	86	14	120
% of all grades	71.7%	11.7%	100%

Grading Factor*		% of grade	
Frost	n/a	7.5%	13.3%
Midge	n/a	3.3%	3.3%

Source: Canadian Grain Commission
*A sample can be downgraded for more than one factor

Top Five CPSR Varieties Grown in 2020

1. AAC Penhold
2. AAC Foray
3. AAC Goodwin
4. SY Rowyn
5. 5700PR

CPSR Protein Content, %

Province	Mean	Standard Deviation
No. 1 CPSR		
Manitoba	13.6	0.5
Saskatchewan	12.2	10.6
Alberta and B.C.	11.8	1.0
Western Canada	12.1	1.1
No. 2 CPSR		
Manitoba	—	—
Saskatchewan	12.5	2.6
Alberta and B.C.	12.3	0.9
Western Canada	12.4	1.5
All Grades		
Manitoba	13.6	0.5
Saskatchewan	12.4	1.5
Alberta and B.C.	12.0	1.0
Western Canada	12.2	1.1

Grading factor and protein content analysis conducted by Canadian Grain Research Laboratory as of November 4, 2020, basis the Harvest Sample Program.

PRAIRIE COMPOSITE

No. 1 CPSR

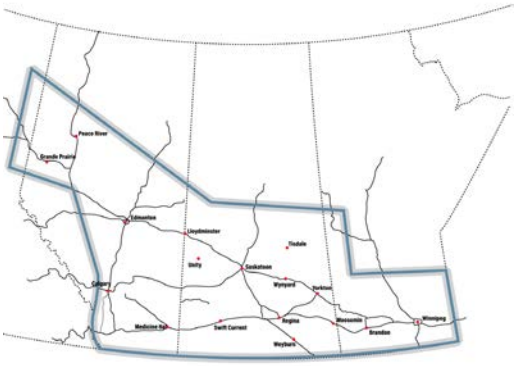
Canada Prairie Spring Red

Quality Parameter [a]	2020 Prairie Composite [b]
Wheat	
Test Weight, kg/hL	81.8
Weight Per 1000 Kernels, g	42.7
Protein Content, %	12.1
Protein Content, % (dry matter basis)	14.0
Ash Content, %	1.55
Falling Number, s	391
Particle Size Index, %	51

Milling Flour Yield Bühler Laboratory Mill	
Total Products Basis, %	76.3
0.50% Ash Basis, %	77.3

FIGURE 2

Western Canadian Prairie Composite Regions



Quality Parameter [a]	2020 Prairie Composite [b]	
Flour [c]		
Extraction, %	Straight Grade 76.3%	74%
Protein Content, %	11.2	11.0
Protein Loss, %	0.9	1.1
Wet Gluten Content, %	31.0	30.8
Gluten Index, %	95	94
Ash Content, %	0.48	0.46
Minolta Colour - L*	84.7	85.1
Starch Damage, UCD	25.8	26.0
Amylograph Peak Viscosity, BU	549	577
Farinogram		
Absorption, %	63.8	64.1
Dough Development Time (DDT), min	6.8	6.7
Stability, min	13.6	13.7
Mixing Tolerance Index, (MTI) BU	19	18
Extensogram		
Maximum Resistance (Rmax), BU	541	540
Extensibility (Length), cm	20.4	20.8
Area, cm^2	140	141
Alveogram		
P (height x 1.1), mm	129	132
L (length), mm	105	98
P/L	1.23	1.35
W, 10-4 J	480	471
Ie, %	65.3	65.5
Baking (No Time Dough)		
Absorption, %	69	n/a
Mixing Time, min	6.4	n/a
Specific Volume, cm^3/g	6.9	n/a
Total Bread Score (out of 10)	9.4	n/a
Baking (Sponge & Dough)		
Absorption, %	68	n/a
Mixing Time, min	7.8	n/a
Specific Volume, cm^3/g	6.8	n/a
Total Bread Score (out of 10)	9.8	n/a
Noodles (Fresh White Salted)		
Colour (3h / 24h) L*	n/a	75.2 / 69.6
a*	n/a	1.29 / 1.76
b*	n/a	24.2 / 22.4
Cooked Noodle Max. Cutting Stress g/mm^2		
Cook Time - 3.5 min	n/a	26.8

[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

[b] Refer to crop region map (Figure 2).

Milling, analytical, and end product analysis conducted by Cigi, the Technical Division of Cereals Canada, based on Cereals Canada Harvest Assessment samples representing grain available for export.

2020-21

CESRW Canada Eastern Soft Red Winter

No. 2 or better
Canada Eastern Soft Red Winter

Quality Parameter [a]	2019 Ontario	2020 Ontario
Wheat[b]		
Test Weight, kg/hL	78.0	78.0
Weight Per 1000 Kernels, g	32.3	34.4
Protein Content, %	9.5	9.7
Protein Content, % (dry matter basis)	11.0	11.2
Ash Content, %	1.40	1.44
Falling Number, s	362	380
Particle Size Index, %	80.6	n/a

Milling Flour Yield Bühler Laboratory Mill		
Total Products Basis, %	72.5	75.3
0.50% Ash Basis, %	78.1	77.8

Quality Parameter [a]	2019 Ontario	2020 Ontario
Flour		
Extraction, %	Straight Grade 72.5%	Straight Grade 75.3%
Protein Content, %	8.3	8.6
Protein Loss, %	1.2	1.1
Ash Content, %	0.40	0.45
Starch Damage, %	16.1	16.3
Amylograph Peak Viscosity, BU	807	692
Farinogram		
Absorption, %	50.6	51.3
Dough Development Time (DDT), min	1.1	1.1
Stability, min	2.1	2.2
Mixing Tolerance Index, (MTI)BU	83	95
Alveogram		
P (height x 1.1), mm	28	25
L (length), mm	96	93
P/L	0.30	0.27
W, 10-4 J	77	61
Solvent Retention Capacity		
Distilled Water, %	52	53
Sucrose, %	99.2	99.1
Lactic Acid, %	111	103
Sodium Carbonate, &	73.2	76.2
Bake (Sugar Snap Cookie Method)		
Cookie Width (w), mm	85.4	82.1
Cookie Thickness (t), mm	10.0	9.3
w/t Ratio	8.5	8.8
Cookie Spread Factor	85.4	88.3

[a] Data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

[b] Analysis carried out by the SGS Grains Analytical Testing Laboratory, methods used at SGS are available upon request.