Quality of western Canadian wheat exports

Cargo shipments • February 1 to July 31, 2000

Introduction

This bulletin reports quality data for cargoes of all classes of western Canadian wheat exported by ship from February 1 to July 31, 2000. Two types of information are presented:

- Distribution tables for moisture content, test weight and other grade determining factors assessed during grading of individual cargoes by Industry Services, Canadian Grain Commission, at time of vessel loading.
- Quality data (wheat and flour characteristics, milling, end-use quality) for weighted composite samples that represent all cargoes of a given grade (and protein segregate where appropriate) exported during the six-month period. For Canada Western Red Spring wheat and No. 1 and 2 Canada Western Amber Durum wheat, composites representing Atlantic and Pacific shipments are prepared and tested. For the other wheat classes and No. 3 Canada Western Amber Durum wheat, only one series of composites represents all cargoes (Atlantic and Pacific) exported from Canada during the period.

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Canada Western Red Spring wheat

Canada Western Red Spring (CWRS) wheat is well known for its excellent milling and baking quality. Three milling grades are available, the top two of which are further segregated according to protein content. Guaranteed minimum protein content is reported on a 13.5% moisture basis.

Higher protein CWRS wheat is highly suitable for blending and for the production of high volume pan breads. It is also commonly used alone or in blends with softer wheats for the production of hearth breads, steamed breads, noodles, flat breads and common wheat pasta.

To qualify for the milling grades in this class, wheat must be a registered variety—a variety equal in quality to the statutory standard, Neepawa. Varietal standards and registration ensure that a high degree of uniformity in quality is maintained in export shipments.

Table 1 • Moisture content, test weight and other grade determining factors*
Atlantic export cargoes of Canada Western Red Spring wheat
Third and fourth quarters 1999-2000

	No. 1 CWRS			No. 2 CWRS			No. 3 CWRS
	Guaranteed minimum protein content						
	14.5	13.5	12.5	14.5	14.0	13.5	
Number of cargoes	5	17	3	6	37	28	5
Thousands of tonnes	55	98	37	48	341	304	84
Moisture content, %							
Weighted mean	13.0	13.1	13.1	13.5	13.5	13.6	13.7
Standard deviation	0.25	0.29	0.21	0.21	0.31	0.26	0.26
Minimum	12.9	12.6	13.0	13.2	12.6	12.6	13.3
Maximum	13.4	13.7	13.4	13.7	14.1	14.0	13.9
Test weight, kg/hl							
Weighted mean	82.1	82.2	83.0	80.0	80.7	81.3	81.6
Standard deviation	0.73	0.53	0.12	0.98	0.68	0.75	0.34
Minimum	80.6	81.3	82.9	78.9	79.4	79.9	81.1
Maximum	82.4	83.2	83.1	81.7	82.1	82.6	81.8
Wheats of other classes, %							
Weighted mean	0.25	0.29	0.49	0.91	0.52	0.46	0.75
Cereal grains other than wheat, %							
Weighted mean	0.16	0.10	0.12	0.19	0.19	0.17	0.20

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 2 • No. 1 Canada Western Red Spring wheat
Atlantic export cargo composites
Third and fourth quarters 1999-2000

	No. 1 CWRS		
	Guaranteed minimum protein content		
Quality parameter*	14.5	13.5	12.5
Wheat			
Weight per 1000 kernels, g	30.6	32.7	31.8
Protein content, %	14.7	13.7	12.6
Protein content, % (dry matter basis)	17.0	15.8	14.6
Ash content, %	1.68	1.62	1.59
Alpha-amylase activity, units/g	5.0	3.0	4.0
Falling number, s	405	410	415
PSI	56	54	53
Milling			
Flour yield			
Clean wheat basis, %	75.6	76.5	75.7
0.50% ash basis, %	73.6	75.5	75.2
Flour			
Protein content, %	13.9	13.1	12.1
Wet gluten content, %	38.4	35.5	31.9
Ash content, %	0.54	0.52	0.51
Grade colour	-1.1	-1.5	-1.8
AGTRON colour, %	71	76	79
Starch damage, %	6.6	6.9	7.2
Alpha-amylase activity, units/g	1.5	1.5	1.0
Amylograph peak viscosity, BU	680	625	660
Maltose value, g/100 g	2.2	2.3	2.4
Farinogram			
Absorption, %	65.1	64.7	64.5
Development time, min	6.00	5.50	4.50
Mixing tolerance index, BU	30	30	30
Stability, min	8.00	8.00	7.00
Extensogram			
Length, cm	22	22	21
Height at 5 cm, BU	310	320	330
Maximum height, BU	565	605	580
Area, cm^2	165	175	165
Alveogram			
Length, mm	134	114	90
P (height x 1.1), mm	97	99	120
W, x 10^{-4} joules	413	386	383
Baking (Canadian short process baking test)			
Absorption, %	68	68	67
Mixing energy, W–h/kg	16.2	14.8	12.9
Mixing time, min	11.0	10.2	9.2
Loaf volume, cm^3/100 g flour	1160	1075	1120

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Table 3 • No. 2 Canada Western Red Spring wheat
Atlantic export cargo composites
Third and fourth quarters 1999-2000

	No. 2 CWRS		
	Guaranteed minimum protein content		
Quality parameter*	14.5	14.0	13.5
Wheat			
Weight per 1000 kernels, g	30.9	31.7	31.0
Protein content, %	14.7	14.2	13.8
Protein content, % (dry matter basis)	17.0	16.4	16.0
Ash content, %	1.69	1.69	1.65
Alpha-amylase activity, units/g	7.5	8.0	9.0
Falling number, s	390	370	375
PSI	56	56	54
Milling			
Flour yield			
Clean wheat basis, %	75.6	76.2	75.7
0.50% ash basis, %	74.6	74.7	75.2
Flour			
Protein content, %	14.2	13.5	13.1
Wet gluten content, %	38.5	36.1	35.0
Ash content, %	0.52	0.53	0.51
Grade colour	-0.7	-0.9	-1.3
AGTRON colour, %	69	69	73
Starch damage, %	6.3	6.4	6.6
Alpha-amylase activity, units/g	4.0	4.5	4.5
Amylograph peak viscosity, BU	440	390	380
Maltose value, g/100 g	2.3	2.4	2.4
Farinogram			
Absorption, %	64.9	64.1	63.7
Development time, min	6.50	5.75	5.50
Mixing tolerance index, BU	30	40	35
Stability, min	9.00	8.00	8.00
Extensogram			
Length, cm	22	22	22
Height at 5 cm, BU	300	310	300
Maximum height, BU	585	570	590
Area, cm^2	170	170	170
Alveogram			
Length, mm	134	133	128
P (height x 1.1), mm	90	90	88
W, x 10^{-4} joules	405	403	386
Baking (Canadian short process baking test)			
Absorption, %	69	68	67
Mixing energy, W–h/kg	14.0	15.7	13.5
Mixing time, min	10.5	10.9	10.0
Loaf volume, cm^3/100 g flour	1130	1070	1090

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Table 4 • No. 3 Canada Western Red Spring wheat
Atlantic export cargo composite
Third and fourth quarters 1999-2000

Quality parameter*	No. 3 CWRS Not segregated by protein content
Wheat	
Weight per 1000 kernels, g	31.2
Protein content, %	13.1
Protein content, % (dry matter basis)	15.1
Ash content, %	1.63
Alpha-amylase activity, units/g	9.0
Falling number, s	355
PSI	54
Milling	
Flour yield	
Clean wheat basis, %	75.6
0.50% ash basis, %	75.1
Flour	
Protein content, %	12.6
Wet gluten content, %	33.5
Ash content, %	0.51
Grade colour	-1.1
AGTRON colour, %	72
Starch damage, %	7.1
Alpha-amylase activity, units/g	3.0
Amylograph peak viscosity, BU	460
Maltose value, g/100 g	2.5
Farinogram	
Absorption, %	64.5
Development time, min	4.75
Mixing tolerance index, BU	35
Stability, min	8.00
Extensogram	
Length, cm	22
Height at 5 cm, BU	290
Maximum height, BU	530
Area, cm^2	155
Alveogram	
Length, mm	102
P (height x 1.1), mm	99
W, x 10^{-4} joules	350
Baking (Canadian short process baking test)	
Absorption, %	68
Mixing energy, W–h/kg	13.1
Mixing time, min	9.8
Loaf volume, cm^3/100 g flour	1030

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Table 5 • Moisture content, test weight and other grade determining factors*
Pacific export cargoes of Canada Western Red Spring wheat
Third and fourth quarters 1999-2000

	No. 1 CWRS			No. 2 CWRS					No. 3 CWRS
	Guaranteed minimum protein content								
	14.0	13.0	12.0	14.5	14.0	13.5	12.5	11.5	
Number of cargoes	4	4	3	5	20	46	39	9	10
Thousands of tonnes	55	64	72	24	239	570	768	45	86
Moisture content, %									
Weighted mean	12.7	13.0	12.8	13.1	13.2	13.5	13.2	12.9	13.5
Standard deviation	0.15	0.38	0.12	0.32	0.35	0.32	0.36	0.40	0.36
Minimum	12.6	12.8	12.6	12.6	12.6	12.8	12.5	12.6	13.0
Maximum	12.9	13.6	12.8	13.5	13.7	14.0	14.3	13.7	14.0
Test weight, kg/hl									
Weighted mean	82.2	83.0	82.3	81.7	82.2	82.5	82.8	82.0	81.6
Standard deviation	0.56	0.69	0.95	0.74	0.51	0.69	0.53	3.44	0.57
Minimum	81.5	81.8	81.6	80.4	80.9	80.9	81.3	73.1	80.5
Maximum	82.8	83.3	83.5	82.3	83.1	83.4	83.6	84.1	82.5
Wheats of other classes, %									
Weighted mean	0.40	0.31	0.48	0.25	0.43	0.36	0.47	0.35	0.56
Cereal grains other than wheat, %									
Weighted mean	0.13	0.14	0.12	0.26	0.17	0.19	0.18	0.15	0.33

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 6 • No. 1 Canada Western Red Spring wheat
Pacific export cargo composites
Third and fourth quarters 1999-2000

	No. 1 CWRS		
	Guaranteed minimum protein content		
Quality parameter*	14.0	13.0	12.0
Wheat			
Weight per 1000 kernels, g	34.1	34.5	34.3
Protein content, %	14.6	13.6	12.8
Protein content, % (dry matter basis)	16.9	15.7	14.8
Ash content, %	1.47	1.52	1.49
Alpha-amylase activity, units/g	3.5	3.0	3.5
Falling number, s	390	390	405
PSI	54	53	51
Milling			
Flour yield			
Clean wheat basis, %	75.5	75.4	75.7
0.50% ash basis, %	76.5	76.4	76.2
Flour			
Protein content, %	14.0	13.2	12.2
Wet gluten content, %	38.3	35.7	32.2
Ash content, %	0.48	0.48	0.49
Grade colour	-1.5	-1.6	-1.9
AGTRON colour, %	74	77	80
Starch damage, %	6.4	6.8	7.2
Alpha-amylase activity, units/g	1.0	1.0	1.0
Amylograph peak viscosity, BU	635	605	660
Maltose value, g/100 g	2.2	2.4	2.6
Farinogram			
Absorption, %	66.8	65.8	65.5
Development time, min	6.50	5.50	5.00
Mixing tolerance index, BU	30	30	30
Stability, min	10.00	9.50	9.00
Extensogram			
Length, cm	23	21	20
Height at 5 cm, BU	310	320	330
Maximum height, BU	595	595	590
Area, cm^2	190	165	155
Alveogram			
Length, mm	128	108	94
P (height x 1.1), mm	108	112	120
W, x 10^{-4} joules	448	409	392
Baking (Canadian short process baking test)			
Absorption, %	71	70	69
Mixing energy, W–h/kg	15.7	11.2	13.0
Mixing time, min	11.2	8.6	9.7
Loaf volume, cm^3/100 g flour	1125	1100	1115

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Table 7 • No. 2 Canada Western Red Spring wheat
Pacific export cargo composites
Third and fourth quarters 1999-2000

	No. 2 CWRS				
	Guaranteed minimum protein content				
Quality parameter*	14.5	14.0	13.5	12.5	11.5
Wheat					
Weight per 1000 kernels, g	34.5	33.8	35.1	33.8	33.8
Protein content, %	14.6	14.0	13.6	12.8	11.6
Protein content, % (dry matter basis)	16.9	16.2	15.7	14.8	13.4
Ash content, %	1.56	1.57	1.62	1.55	1.56
Alpha-amylase activity, units/g	2.5	3.5	4.0	2.5	3.5
Falling number, s	410	380	390	405	390
PSI	54	54	54	52	50
Milling					
Flour yield					
Clean wheat basis, %	75.9	75.4	75.4	75.7	75.7
0.50% ash basis, %	76.4	75.4	75.4	76.7	74.7
Flour					
Protein content, %	14.1	13.5	13.0	12.0	11.1
Wet gluten content, %	38.5	37.1	36.0	32.2	29.4
Ash content, %	0.49	0.50	0.50	0.48	0.52
Grade colour	-1.3	-1.5	-1.7	-1.9	-2.2
AGTRON colour, %	75	76	76	78	81
Starch damage, %	6.6	6.7	6.8	7.4	7.7
Alpha-amylase activity, units/g	1.0	1.5	1.5	1.0	1.5
Amylograph peak viscosity, BU	640	605	600	625	605
Maltose value, g/100 g	2.1	2.2	2.2	2.5	2.7
Farinogram					
Absorption, %	66.5	65.9	65.5	65.1	64.8
Development time, min	6.25	5.75	6.00	4.50	4.25
Mixing tolerance index, BU	25	30	35	30	25
Stability, min	12.00	10.50	9.00	8.00	7.50
Extensogram					
Length, cm	22	21	22	22	20
Height at 5 cm, BU	315	310	310	300	300
Maximum height, BU	595	600	575	550	500
Area, cm^2	175	170	165	160	135
Alveogram					
Length, mm	129	121	114	93	81
P (height x 1.1), mm	99	104	109	117	130
W, x 10^{-4} joules	412	419	405	373	373
Baking (Canadian short process baking test)					
Absorption, %	71	70	70	69	67
Mixing energy, W–h/kg	15.2	14.8	14.7	12.7	11.6
Mixing time, min	10.8	10.4	10.5	9.4	8.3
Loaf volume, cm^3/100 g flour	1125	1120	1090	1030	985

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Table 8 • No. 3 Canada Western Red Spring wheat
Pacific export cargo composites
Third and fourth quarters 1999-2000

Quality parameter*	No. 3 CWRS Not segregated by protein content
Wheat	
Weight per 1000 kernels, g	34.1
Protein content, %	13.1
Protein content, % (dry matter basis)	15.1
Ash content, %	1.65
Alpha-amylase activity, units/g	4.0
Falling number, s	385
PSI	52
Milling	
Flour yield	
Clean wheat basis, %	75.4
0.50% ash basis, %	72.9
Flour	
Protein content, %	12.3
Wet gluten content, %	33.4
Ash content, %	0.55
Grade colour	-1.3
AGTRON colour, %	73
Starch damage, %	7.6
Alpha-amylase activity, units/g	2.0
Amylograph peak viscosity, BU	515
Maltose value, g/100 g	2.6
Farinogram	
Absorption, %	66.5
Development time, min	5.50
Mixing tolerance index, BU	35
Stability, min	8.00
Extensogram	
Length, cm	22
Height at 5 cm, BU	295
Maximum height, BU	530
Area, cm^2	155
Alveogram	
Length, mm	104
P (height x 1.1), mm	126
W, x 10^{-4} joules	441
Baking (Canadian short process baking test)	
Absorption, %	70
Mixing energy, W–h/kg	12.2
Mixing time, min	8.8
Loaf volume, cm^3/100 g flour	1070

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Canada Western Amber Durum wheat

Canada has an international reputation as a reliable supplier of high quality durum wheat, furnishing about two thirds of the world's exports in recent years. The attributes of Canadian durum that attract demand are reliability of supply, cleanliness, uniformity and consistency within and between shipments, and excellent end-product quality.

Canada has a strong commitment to quality throughout its grain system. This extends to strict varietal control to protect the inherent quality of all grades of amber durum wheat and to strict adherence to wheat grade standards. The requirement that only durum varieties of high intrinsic quality are registered is a cornerstone of the Canadian grading system.

Currently, the predominant variety of Canada Western Amber Durum wheat is Kyle.

Table 9 • Moisture content, test weight and other grade determining factors*
Export cargoes of Canada Western Amber Durum wheat
Third and fourth quarters 1999-2000

	No. 1 CWAD		No. 2 CWAD		No. 3 CWAD	
	Atlantic	Pacific	Atlantic	Pacific	Atlantic	Pacific
Number of cargoes	21	7	53	28	29	6
Thousands of tonnes	216	135	487	212	426	44
Moisture content, %						
Weighted mean	12.6	12.3	13.0	12.3	13.3	12.5
Standard deviation	0.55	0.20	0.26	0.29	0.60	0.50
Minimum	11.6	11.9	12.3	11.9	12.5	11.5
Maximum	13.8	12.5	13.7	13.1	13.7	12.8
Test weight, kg/hl						
Weighted mean	83.0	83.0	82.8	82.2	81.8	82.1
Standard deviation	0.49	0.30	0.46	0.39	0.30	0.50
Minimum	81.5	82.5	81.3	81.7	80.4	81.3
Maximum	83.8	83.4	83.7	83.1	83.0	82.8
Hard vitreous kernels, %						
Weighted mean	83.7	85	77.5	83	73	74
Wheats of other classes, %						
Weighted mean	0.83	0.90	1.03	0.84	1.35	1.79
Cereal grains other than wheat, %						
Weighted mean	0.14	0.25	0.17	0.27	0.23	0.31

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 10 • Canada Western Amber Durum wheat
Export cargo composites
Third and fourth quarters 1999-2000

Quality parameter*	No. 1 CWAD		No. 2 CWAD		No. 3 CWAD	
	Atlantic	Pacific	Atlantic	Pacific	Atlantic	Pacific
Wheat						
Weight per 1000 kernels, g	43.8	43.4	42.0	42.8	40.1	43.8
Protein content, %	11.7	12.0	11.8	12.4	11.9	11.6
Protein content, % (dry matter basis)	13.5	13.9	13.6	14.3	13.8	13.4
SDS sedimentation, ml	35	36	31	37	31	28
Ash content, %	1.60	1.56	1.61	1.60	1.63	1.60
Yellow pigment content, ppm	8.0	7.9	7.9	7.8	7.9	7.8
Falling number, s	415	410	415	400	380	390
Milling yield, %	74.7	75.0	75.1	74.5	73.9	74.0
Semolina yield, %	66.6	66.9	66.6	66.2	65.5	65.0
PSI	36.2	36.9	37.4	36.8	37.3	37.6
Semolina						
Protein content, %	10.7	10.8	10.8	11.4	10.7	10.5
Wet gluten content, %	26.6	27.3	27.0	29.0	26.8	25.9
Dry gluten content, %	9.2	9.6	9.4	10.2	9.3	9.1
Ash content, %	0.62	0.62	0.64	0.62	0.65	0.64
Yellow pigment content, ppm	6.9	6.7	6.9	6.9	6.9	6.6
AGTRON colour, %	87	87	85	85	81	83
Minolta colour:						
L*	88.3	88.0	87.9	87.9	88.1	87.6
a*	-2.9	-2.9	-2.9	-3.0	-3.0	-3.0
b*	30.4	30.2	30.4	30.5	29.2	29.6
Speck count per 50 cm^2	27	29	29	27	32	34
Falling number, s	520	510	510	525	475	480
Spaghetti						
Dried at 70°C						
Minolta colour:						
L*	76.9	76.7	76.3	76.5	75.8	76.1
a*	2.7	2.8	3.2	2.7	3.3	3.1
b*	59.5	59.6	59.2	60.1	58.7	57.7
Cooking quality, CQP	28	25	29	31	27	28

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for semolina.

Canada Western Extra Strong wheat

Canada Western Extra Strong (CWES) wheat is a red spring wheat. The most widely grown cultivar is Glenlea.

Flour milled from this wheat is characterized by very strong gluten. Dough made from CWES wheat flour cannot be properly developed at the normal farinograph speed of 63 rpm and must be tested at the higher speed of 90 rpm to obtain a true mixing peak.

The strong physical dough properties of CWES wheat make it ideal for blending and for specialty products in which very high gluten strength is needed.

Two milling grades have been established for this class.

Table 11 • Moisture content, test weight and other grade determining factors*
Export cargoes of Canada Western Extra Strong wheat
Third and fourth quarters 1999-2000

	No. 1 CWES	No. 2 CWES
Number of cargoes	4	4
Thousands of tonnes	15	24
Moisture content, %		
Weighted mean	14.1	13.5
Standard deviation	0.17	0.44
Minimum	14.0	13.1
Maximum	14.4	14.1
Test weight, kg/hl		
Weighted mean	80.5	80.6
Standard deviation	0.92	1.36
Minimum	79.6	78.6
Maximum	81.8	81.6
Wheats of other classes, %		
Weighted mean	0.66	1.22
Cereal grains other than wheat, %		
Weighted mean	0.22	0.34

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 12 • Canada Western Extra Strong wheat
Export cargo composites
Third and fourth quarters 1999-2000

Quality parameter*	No. 1 CWES	No. 2 CWES
Wheat		
Weight per 1000 kernels, g	40.4	42.4
Protein content, %	11.8	12.0
Protein content, % (dry matter basis)	13.6	13.9
Ash content, %	1.55	1.50
Alpha-amylase activity, units/g	7.0	8.5
Falling number, s	365	340
Flour yield, %	76.1	75.8
PSI	50	51
Flour		
Protein content, %	11.2	11.5
Wet gluten content, %	25.7	26.5
Ash content, %	0.58	0.54
Grade colour	-1.0	-0.6
AGTRON colour, %	71	68
Starch damage, %	8.3	8.2
Alpha-amylase activity, units/g	3.5	2.5
Amylograph peak viscosity, BU	395	445
Maltose value, g/100 g	3.1	3.0
Farinogram		
Absorption, %	62.6	63.4
Development time (90 rpm), min	6.00	5.75
Extensogram		
Length, cm	24	25
Height at 5 cm, BU	350	330
Maximum height, BU	695	635
Area, cm^2	220	215
Alveogram		
Length, mm	73	64
P (height x 1.1), mm	120	124
W, x 10^{-4} joules	350	330
Baking (remix-to-peak baking test)		
Absorption, %	63	62
Remix time, min	4.1	3.1
Loaf volume, cm^3/100 g flour	860	840

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Canada Prairie Spring Red wheat

Canada Prairie Spring Red (CPSR) wheat, used alone or in blends, has quality characteristics suitable for the production of various types of hearth breads, flat breads, noodles and related products.

The most commonly grown varieties eligible for milling grades of CPSR are AC Taber and Biggar.

Table 13 • Moisture content, test weight and other grade determining factors*
Export cargoes of Canada Prairie Spring Red wheat
Third and fourth quarters 1999-2000

	No. 2 CPSR
Number of cargoes	17
Thousands of tonnes	227
Moisture content, %	
Weighted mean	13.8
Standard deviation	0.40
Minimum	12.6
Maximum	14.1
Test weight, kg/hl	
Weighted mean	81.3
Standard deviation	0.72
Minimum	80.3
Maximum	83.0
Wheats of other classes, %	
Weighted mean	1.12
Cereal grains other than wheat, %	
Weighted mean	0.30

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 14 • Canada Prairie Spring Red wheat
Export cargo composite
Third and fourth quarters 1999-2000

Quality parameter*	No. 2 CPSR
Wheat	
Weight per 1000 kernels, g	39.5
Protein content, %	11.2
Protein content, % (dry matter basis)	12.9
Ash content, %	1.47
Alpha-amylase activity, units/g	4.5
Falling number, s	360
Flour yield, %	74.4
PSI	57
Flour	
Protein content, %	10.4
Wet gluten content, %	27.1
Ash content, %	0.49
Grade colour	-1.3
AGTRON colour, %	73
Starch damage, %	6.8
Alpha-amylase activity, units/g	1.5
Amylograph peak viscosity, BU	525
Maltose value, g/100 g	2.4
Farinogram	
Absorption, %	61.7
Development time, min	4.75
Mixing tolerance index, BU	50
Stability, min	6.50
Extensogram	
Length, cm	21
Height at 5 cm, BU	275
Maximum height, BU	480
Area, cm^2	140
Alveogram	
Length, mm	107
P (height x 1.1), mm	86
W, x 10^{-4} joules	271
Baking (remix-to-peak baking test)	
Absorption, %	59
Remix time, min	2.1
Loaf volume, cm^3/100 g flour	695

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Canada Western Red Winter wheat

Canada Western Red Winter (CWRW) wheat is a hard wheat exhibiting excellent milling quality. It is available in two milling grades. Flour produced from high grade CWRW wheat performs well in the production of hearth breads (such as French-style bread) and certain types of noodles, and is also suitable for the production of various types of flat bread, steamed bread and related products.

Production of CWRW wheat is concentrated in the southern region of the province of Alberta where milder winters reduce the incidence of winter kill.

The most commonly grown varieties for milling grades of CWRW are CDC Kestral and CDC Clair.

Table 15 • Moisture content, test weight and other grade determining factors*
Export cargoes of Canada Western Red Winter wheat
Third and fourth quarters 1999-2000

Number of cargoes	
Thousands of tonnes	
Moisture content, %	
Weighted mean	
Standard deviation	
Minimum	
Maximum	
Test weight, kg/hl	
Weighted mean	
Standard deviation	
Minimum	
Maximum	
Wheats of other classes, %	
Weighted mean	
Cereal grains other than wheat, %	
Weighted mean	

NO CARGOES SHIPPED

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 16 • Canada Western Red Winter wheat
Export cargo composite
Third and fourth quarters 1999-2000

Quality parameter*
Wheat
Weight per 1000 kernels, g
Protein content, %
Protein content, % (dry matter basis)
Ash content, %
Alpha-amylase activity, units/g
Falling number, s
Flour yield, %
PSI
Flour
Protein content, %
Wet gluten content, %
Ash content, %
Grade colour
AGTRON colour, %
Starch damage, %
Alpha-amylase activity, units/g
Amylograph peak viscosity, BU
Maltose value, g/100 g
Farinogram
Absorption, %
Development time, min
Mixing tolerance index, BU
Stability, min
Extensogram
Length, cm
Height at 5 cm, BU
Maximum height, BU
Area, cm^2
Alveogram
Length, mm
P (height x 1.1), mm
W, x 10^{-4} joules
Baking (remix-to-peak baking test)
Absorption, %
Remix time, min
Loaf volume, cm^3/100 g flour

NO CARGOES SHIPPED

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Canada Prairie Spring White wheat

Canada Prairie Spring White (CPSW) wheat, used alone or in blends, has the quality characteristics suitable for the production of various types of flat breads, noodles, chapatis, crackers and similar products.

The most commonly grown varieties eligible for milling grades of CPSW are AC Karma and Genesis.

Table 17 • Moisture content, test weight and other grade determining factors*
Export cargoes of Canada Prairie Spring White wheat
Third and fourth quarters 1999-2000

	No. 2 CPSW
Number of cargoes	15
Thousands of tonnes	100
Moisture content, %	
Weighted mean	13.3
Standard deviation	0.81
Minimum	10.4
Maximum	13.7
Test weight, kg/hl	
Weighted mean	81.2
Standard deviation	0.51
Minimum	80.7
Maximum	82.6
Wheats of other classes, %	
Weighted mean	2.13
Cereal grains other than wheat, %	
Weighted mean	0.25

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 18 • Canada Prairie Spring White wheat
Export cargo composites
Third and fourth quarters 1999-2000

Quality parameter*	No. 2 CPSW
Wheat	
Weight per 1000 kernels, g	35.4
Protein content, %	11.0
Protein content, % (dry matter basis)	12.7
Ash content, %	1.54
Alpha-amylase activity, units/g	5.0
Falling number, s	400
Flour yield, %	74.9
PSI	57
Flour	
Protein content, %	10.1
Wet gluten content, %	27.3
Ash content, %	0.53
Grade colour	-1.8
AGTRON colour, %	78
Starch damage, %	6.7
Alpha-amylase activity, units/g	1.5
Amylograph peak viscosity, BU	710
Maltose value, g/100 g	2.3
Farinogram	
Absorption, %	62.1
Development time, min	3.25
Mixing tolerance index, BU	60
Stability, min	4.00
Extensogram	
Length, cm	22
Height at 5 cm, BU	200
Maximum height, BU	270
Area, cm^2	85
Alveogram	
Length, mm	97
P (height x 1.1), mm	80
W, x 10^{-4} joules	213
Baking (remix-to-peak baking test)	
Absorption, %	57
Remix time, min	1.4
Loaf volume, cm^3/100 g flour	625

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.

Canada Western Soft White Spring wheat

Canada Western Soft White Spring (CWSWS) wheat is a lower protein, soft wheat with weak dough properties. Flour milled from this wheat is suitable for producing cookies, cakes, biscuits and related products. Alone or in blends with stronger wheat, CWSWS wheat can also be used to produce crackers, flat breads, steamed breads and certain types of noodles.

Most CWSWS wheat is grown under irrigation to maximize yield and minimize protein content.

Table 19 • Moisture content, test weight and other grade determining factors*
Export cargoes of Canada Western Soft White Spring wheat
Third and fourth quarters 1999-2000

	No. 2 CWSWS
Number of cargoes	4
Thousands of tonnes	17
Moisture content, %	
Weighted mean	12.6
Standard deviation	0.22
Minimum	12.3
Maximum	12.8
Test weight, kg/hl	
Weighted mean	82.1
Standard deviation	0.44
Minimum	81.8
Maximum	82.8
Wheats of other classes, %	
Weighted mean	1.43
Cereal grains other than wheat, %	
Weighted mean	0.17

* Canadian Grain Commission Industry Services data for official loading samples tested at time of loading

Table 20 • Canada Western Soft White Spring wheat
Export cargo composite
Third and fourth quarters 1999-2000

Quality parameter*	No. 2 CWSWS
Wheat	
Weight per 1000 kernels, g	35.9
Protein content, %	10.4
Protein content, % (dry matter basis)	12.0
Ash content, %	1.49
Alpha-amylase activity, units/g	4.5
Falling number, s	385
Flour yield, %	76.0
PSI	69
Flour	
Protein content, %	9.7
Wet gluten content, %	24.1
Ash content, %	0.53
Grade colour	-0.8
AGTRON colour, %	71
Starch damage, %	3.9
Alpha-amylase activity, units/g	1.0
Amylograph peak viscosity, BU	510
Maltose value, g/100 g	1.4
AWRC, %	69.5
Farinogram	
Absorption, %	54.6
Development time, min	1.25
Mixing tolerance index, BU	165
Stability, min	1.50
Alveogram	
Length, mm	70
P (height x 1.1), mm	25
W, x 10^{-4} joules	59
Cookie test	
Spread, mm	81.7
Ratio (spread/thickness)	8.2

* Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.