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Quality of 1998 Quebec Canada Eastern Red Wheat

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Composite samples representing the two top grades of 1998 new crop Canada Eastern Red (CER) wheat for Quebec were provided by Industry Services, Montréal. The Grain Research Laboratory in Winnipeg provided the quality analysis. Due to the limited number of samples available this year, the composites may be less representative of the crop than in previous years. Results are shown in Table 1, with data from the 1997 Quebec crop survey for comparison.

Both the No. 1 and No. 2 1998 composites show high protein content. The No. 1 grade composite has a lower value than this year's No. 2 grade and last year's No. 1 grade.

The 1998 No. 1 grade composite shows similar test weight and higher kernel weight compared to last year. High wheat falling number and flour amylograph peak viscosity values, as well as low wheat and flour α -amylase activities, indicate sound kernel characteristics. Similar PSI and flour starch damage values for both years indicate similar kernel texture. This year's top grade composite exhibits superior milling quality as indicated by higher flour yield compared to 1997.

Physical dough properties of the No. 1 grade 1998 composite are weaker than last year as shown by Farinograph, Extensograph and Alveograph results. Remix-to-peak baking quality is inferior to last year due to reduced baking absorption and lower loaf volume.

The 1998 No. 2 grade composite shows higher test weight and lower kernel weight compared to last year's No. 2 grade composite. Wheat falling number and flour amylograph peak viscosity values indicate an acceptable degree of kernel soundness for most applications. The similar PSI and flour starch damage values for both years suggest similar kernel texture. The milling quality for this year's No. 2 grade composite is comparable to last year.

Physical dough properties of the No. 2 grade are weaker than last year. Remix-to-peak baking quality is inferior to last year due to reduced baking absorption and lower loaf volume.

The varietal distribution of the 1998 No. 1 CER composite is very different from the varietal distribution of the 1997 composite sample. Electrophoretic analyses by the Grain Research Laboratory identified seven varieties, including Aquino, SS Blomidon, 2375, AC Domain, Algot, AC Voyageur and SS Maestro which accounted for 80% of the total. Celtic, the predominant variety in the 1997 composite, was not identified in significant quantity in the 1998 composite.

Table 1 • Quality data for 1998 and 1997 composite samples representing red wheat grown in Quebec

Quality parameter ¹	No. 1 CE Red wheat		No. 2 CE Red wheat	
	1998	1997	1998	1997
Wheat				
Test weight, kg/hl	79.6	79.6	79.2	78.5
Weight per 1000 kernels, g	33.7	31.0	33.8	35.5
Protein content, %	13.5	14.5	15.1	14.7
Protein content, % (dry matter basis)	15.6	16.8	17.5	17.0
Ash content, %	1.70	1.86	1.77	1.81
α-amylase activity, units/g	14.5	7.5	21.5	80.5
Falling number, s	355	380	320	205
Flour yield, %	75.1	73.7	75.4	75.3
PSI	55	53	52	54
Flour				
Protein content, %	12.8	13.4	14.1	13.5
Wet gluten content, %	31.8	36.9	38.9	36.3
Ash content, %	0.55	0.55	0.58	0.57
Grade colour	0.3	0.5	1.3	1.5
AGTRON colour, %	54	52	46	47
Starch damage, %	6.5	6.8	6.8	7.2
α-amylase activity, units/g	3.0	3.0	6.5	33.5
Amylograph peak viscosity, BU	595	650	340	120
Farinogram				
Absorption, %	63.0	63.5	65.5	63.7
Development time, min	4.25	7.25	4.75	5.25
Mixing tolerance index, BU	30	30	50	45
Stability, min	8.5	10.5	6.0	8.5
Extensogram				
Length, cm	18	22	24	23
Height at 5 cm, BU	315	310	200	260
Maximum height, BU	460	590	330	470
Area, cm ²	115	170	110	145
Alveogram				
Length, mm	87	141	127	139
P (height x 1.1), mm	108	92	79	95
W, x 10 ⁻⁴ joules	345	437	328	439
Remix-to-Peak Baking Test				
Absorption, %	60	65	58	64
Remix time, min	2.3	2.7	1.9	2.9
Loaf volume, cm ³ /100 g flour	820	1000	940	1050

¹ Unless otherwise specified, data are reported on a 13.5% moisture basis for wheat and a 14.0% moisture basis for flour.