



Canadian Grain Commission
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des grains

Quality of 1997 Ontario Wheat

**A report to the Ontario Wheat Producers' Marketing Board
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Quality of No.1 Canada Eastern Red (Soft Red Winter Varieties) and No. 1 Canada Eastern White Winter Wheat

Samples of soft red winter and soft white winter wheat from the 1997 Ontario harvest representing top (No. 1) grade Canada Eastern Red (CER) and Canada Eastern White Winter (CEWW) were supplied by Industry Services, Canadian Grain Commission, Chatham, Ontario, in cooperation with the Ontario Wheat Producers' Marketing Board. Composites for the two No. 1 grades were prepared and quality analysis was carried out by the Grain Research Laboratory, Canadian Grain Commission, Winnipeg. Results are shown in Table 1.

Both composites have high test weight. High wheat falling number and high flour amylograph peak viscosity values for both wheat samples are indicative of sound kernel characteristics and low α -amylase activity. The CER composite shows a very low wheat and flour protein content. Wheat and flour protein contents for the CEWW composite are slightly (0.2%) higher than long term averages. Good wheat milling quality is evident for both samples. CEWW flour yield and flour ash are similar while flour colour is superior compared to CER. Farinograms and alveograms confirm the weak dough characteristics expected for these wheat types. Both flours gave very good cookie spread and ratio values.

Electrophoretic analysis of the CEWW composite carried out by the Grain Research Laboratory indicates that Harus continues to be the predominant variety in this class followed by Zavitz and Karena. For the CER composite, Freedom is the predominant soft red winter variety followed by W2510.

Quality of No.1 Canada Eastern Red (Hard Red Winter Wheat Varieties) Wheat

Samples of hard red winter wheat from the 1997 Ontario harvest grading No. 1 CER were supplied by Industry Services, Canadian Grain Commission, Chatham, Ontario, in cooperation with the Ontario Wheat Producers' Marketing Board. A composite of these samples was prepared and quality analysis was carried out by the Grain Research Laboratory, Canadian Grain Commission, Winnipeg. Results are shown in Table 2. Quality data from the last survey of hard red winter No. 1 CER, carried out in 1995, are included for comparison.

The new crop composite shows very high test weight. The wheat falling number value indicates generally sound kernel characteristics. Wheat and flour protein contents are lower than corresponding values obtained in 1995. Milling properties of the 1997 composite are also somewhat inferior compared to 1995. Farinograph, extensigraph and alveograph results indicate that this year's crop is weaker than that of two years ago. Remix baking absorption is lower than normally expected for this wheat class.

Electrophoretic analysis indicated that the composite consisted almost entirely of the hard red winter variety, Fundulea.

Table 2 • Ontario wheat
Quality data for composite samples representing hard red winter wheat grown in 1997 and 1995

Quality parameter ¹	1997	1995
Grade	No. 1 Canada Eastern Red wheat	No. 1 Canada Eastern Red wheat
Wheat		
Test weight, kg/hl	83.1	81.9
Weight per 1000 kernels, g	33.8	32.7
Protein content, %	11.5	12.3
Protein content, % (dry matter basis)	13.3	14.2
Ash content, %	1.65	1.55
α-amylase activity, units/g	22.0	17.5
Falling number, s	340	310
Flour yield, %	74.4	74.8
PSI	62	62
Flour		
Protein content, %	10.7	11.7
Wet gluten content, %	28.1	32.5
Ash content, %	0.56	0.52
Grade colour	-0.2	-0.6
AGTRON colour, %	63	57
Starch damage, %	4.4	4.2
α-amylase activity, units/g	6.5	8.0
Amylograph peak viscosity, BU	240	255
Maltose value, g/100 g	1.6	1.8
Zeleny sedimentation, ml	35	34
Farinogram		
Absorption, %	58.0	57.6
Development time, min	2.75	3.5
Mixing tolerance index, BU	50	40
Stability, min	5.5	6.5
Extensigram		
Length, cm	17	18
Height at 5 cm, BU	210	230
Maximum height, BU	260	305
Area, cm ²	65	75
Alveogram		
Length, mm	99	129
P (height x 1.1), mm	59	57
W, x 10 ⁻⁴ joules	178	213
Remix-to-Peak Baking Test		
Absorption, %	55	58
Remix time, min	1.1	1.3
Loaf volume, cm ³ /100 g flour	680	635

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

Table 1 • 1997 Ontario wheat
Quality data for composite samples representing soft red and soft white winter wheat

Quality parameter ¹	Soft Red Winter wheat	Soft White Winter wheat
Grade	No. 1 Canada Eastern Red wheat	No. 1 Canada Eastern White wheat
Wheat		
Test weight, kg/hl	80.1	80.8
Weight per 1000 kernels, g	35.0	38.7
Protein content, %	9.3	10.3
Protein content, % (dry matter basis)	10.8	11.9
Ash content, %	1.64	1.57
α-amylase activity, units/g	8.5	8.0
Falling number, s	360	360
Flour yield, %	76.2	76.1
PSI	71	70
Flour		
Protein content, %	8.0	9.2
Wet gluten content, %	20.2	26.2
Ash content, %	0.49	0.50
Grade colour	0.5	-1.2
AGTRON colour, %	61	71
Starch damage, %	3.1	2.8
α-amylase activity, units/g	2.0	2.5
Amylograph peak viscosity, BU	375	425
Maltose value, g/100 g	1.0	1.0
Zeleny sedimentation, ml	20	24
AWRC, %	56	53
Farinogram		
Absorption, %	51.0	51.9
Development time, min	1.0	1.25
Mixing tolerance index, BU	125	140
Stability, min	2.0	2.0
Alveogram		
Length, mm	89	110
P (height x 1.1), mm	24	22
W, x 10 ⁻⁴ joules	54	52
Cookie test		
Spread, mm	81.9	81.6
Ratio (spread/thickness)	8.8	8.9

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