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Quality of western Canadian wheat exports

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Quality of western Canadian wheat exports

February 1–July 31, 2008

Introduction

This bulletin reports quality data for cargoes of all classes of western Canadian wheat exported by ship from February 1 to July 31, 2008. 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 (CGC), 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 Wheat, Canada Western Red Spring and Wheat, No. 1, 2 and 3 Canada Western Amber Durum, composites representing Atlantic and Pacific shipments are prepared and tested. For the other wheat classes only one series of composites representing all cargoes (Atlantic and Pacific) exported from Canada during the period are reported. Quality data are not available for classes or protein segregates where insufficient sample was received for compositing due to low/no tonnage exported.

Variety registration and class designation lists ensure that a high degree of uniformity in quality is maintained in export shipments. Under the authority of the *Canada Grain Act*, the CGC establishes and maintains lists of wheat varieties eligible to be graded into each wheat class. A listing of varieties included in the CGC variety designation list for each class may be found on the CGC web site at <http://grainscanada.gc.ca/legislation-legislation/orders-arretes/ocgcm-maccg-eng.htm>

Wheat, Canada Western Red Spring

Wheat, Canada Western Red Spring (CWRS) is well known for its excellent milling and baking quality. Four 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 bread. It is also commonly used alone or in blends with other wheat for the production of hearth bread, steamed bread, noodles, flat bread and common wheat pasta.

Currently, the predominant varieties of Wheat, Canada Western Red Spring grown are Lillian, Harvest, Superb, AC Barrie and McKenzie.

**Table 1 - Moisture content, test weight and other grade determining factors¹
Atlantic export cargoes of Wheat, Canada Western Red Spring
Third and fourth quarters 2007-2008**

| | No. 1 CWRS | | | No. 2 CWRS | | | |
|-----------------------------------|---------------------------------------|------|------|------------|------|------|------|
| | Guaranteed minimum protein content, % | | | | | | |
| | 14.5 | 14.0 | 13.5 | 14.5 | 14.0 | 13.5 | 13.0 |
| Number of cargoes | 8 | 22 | 4 | 6 | 7 | 5 | 1 |
| Thousands of tonnes | 106 | 330 | 54 | 89 | 87 | 96 | 6 |
| Moisture content, % | | | | | | | |
| Weighted mean | 13.1 | 13.2 | 12.9 | 13.5 | 13.4 | 13.6 | 13.5 |
| Standard deviation | 0.40 | 0.40 | 0.26 | 0.26 | 0.16 | 0.09 | 0.00 |
| Minimum | 12.5 | 12.3 | 12.5 | 13.2 | 13.2 | 13.5 | 13.5 |
| Maximum | 13.6 | 14.0 | 13.1 | 13.9 | 13.7 | 13.7 | 13.5 |
| Test weight, kg/hL | | | | | | | |
| Weighted mean | 81.2 | 81.5 | 81.9 | 80.9 | 80.8 | 81.5 | 81.5 |
| Standard deviation | 0.40 | 0.60 | 0.66 | 0.62 | 0.62 | 0.22 | 0.00 |
| Minimum | 80.5 | 80.5 | 81.2 | 79.9 | 79.7 | 81.3 | 81.5 |
| Maximum | 81.7 | 82.5 | 82.8 | 81.8 | 81.5 | 81.8 | 81.5 |
| Wheats of other classes, % | | | | | | | |
| Weighted mean | 0.21 | 0.16 | 0.18 | 0.22 | 0.19 | 0.13 | 0.20 |
| Cereal grains other than wheat, % | | | | | | | |
| Weighted mean | 0.06 | 0.07 | 0.08 | 0.10 | 0.10 | 0.12 | 0.11 |

¹ Canadian Grain Commission, Industry Services data for official loading samples tested at time of loading.

**Table 2 - Wheat, Canada Western Red Spring
Atlantic export cargo composites
Third and fourth quarters 2007-08**

| Quality parameter ¹ | No. 1 CWRS | | | | No. 2 CWRS | | | |
|---|---------------------------------------|------|------|------|------------|------|------|------|
| | Guaranteed minimum protein content, % | | | | | | | |
| | 1CWRS | 14.5 | 14.0 | 13.5 | 2CWRS | 14.5 | 14.0 | 13.5 |
| Wheat | | | | | | | | |
| Weight per 1000 kernels, g | 27.7 | 27.4 | 29.3 | 30.1 | 31.0 | 29.5 | 28.0 | 31.3 |
| Protein content, % | 14.3 | 14.8 | 14.4 | 14.0 | 14.1 | 14.8 | 14.3 | 13.8 |
| Protein content, % (dry matter basis) | 16.5 | 17.1 | 16.7 | 16.2 | 16.3 | 17.1 | 16.5 | 16.0 |
| Ash content, % | 1.66 | 1.72 | 1.71 | 1.65 | 1.68 | 1.71 | 1.71 | 1.65 |
| Falling number, s | 465 | 490 | 470 | 445 | 380 | 390 | 380 | 405 |
| PSI | 54 | 54 | 53 | 53 | 54 | 54 | 53 | 53 |
| Milling | | | | | | | | |
| Flour yield | | | | | | | | |
| Clean wheat basis, % | 76.9 | 76.5 | 76.3 | 76.5 | 76.6 | 76.4 | 76.7 | 76.7 |
| 0.50% ash basis, % | 74.4 | 74.0 | 73.8 | 74.5 | 74.6 | 74.4 | 74.2 | 74.2 |
| Flour | | | | | | | | |
| Protein content, % | 13.7 | 14.2 | 13.9 | 13.3 | 13.5 | 14.2 | 13.8 | 13.2 |
| Wet gluten content, % | 36.7 | 38.3 | 36.6 | 35.4 | 36.2 | 37.7 | 36.6 | 34.9 |
| Ash content, % | 0.55 | 0.55 | 0.55 | 0.54 | 0.54 | 0.54 | 0.55 | 0.55 |
| Grade colour, Satake units | -1.8 | -1.4 | -1.4 | -1.9 | -1.8 | -1.3 | -1.4 | -1.5 |
| AGTRON colour, % | 70 | 67 | 66 | 72 | 69 | 69 | 67 | 67 |
| Starch damage, % | 7.5 | 7.2 | 7.3 | 7.3 | 7.4 | 7.1 | 7.4 | 7.7 |
| Amylograph peak viscosity, BU | 685 | 750 | 690 | 650 | 440 | 495 | 510 | 460 |
| Maltose value, g/100g | 2.3 | 2.2 | 2.3 | 2.3 | 2.4 | 2.3 | 2.4 | 2.5 |
| Farinogram | | | | | | | | |
| Absorption, % | 64.7 | 64.7 | 64.9 | 64.2 | 65.6 | 65.0 | 65.2 | 65.7 |
| Development time, min | 6.75 | 7.25 | 6.75 | 5.50 | 6.50 | 7.00 | 7.75 | 7.00 |
| Mixing tolerance index, BU | 20 | 30 | 20 | 20 | 25 | 25 | 20 | 30 |
| Stability, min | 10.5 | 10.0 | 10.0 | 10.5 | 9.0 | 11.0 | 10.0 | 8.0 |
| Extensogram | | | | | | | | |
| Length, cm | 20 | 20 | 21 | 19 | 22 | 22 | 21 | 20 |
| Height at 5 cm, BU | 290 | 320 | 290 | 290 | 255 | 255 | 305 | 280 |
| Maximum height, BU | 520 | 530 | 535 | 465 | 425 | 455 | 520 | 465 |
| Area, cm ² | 130 | 135 | 145 | 115 | 120 | 135 | 140 | 125 |
| Alveogram | | | | | | | | |
| Length, mm | 118 | 127 | 115 | 104 | 112 | 122 | 133 | 107 |
| P (height x 1.1), mm | 107 | 98 | 103 | 104 | 105 | 97 | 103 | 115 |
| W, x 10 ⁻⁴ joules | 406 | 396 | 388 | 365 | 373 | 373 | 422 | 392 |
| Baking (Canadian Short Process baking test) | | | | | | | | |
| Absorption, % | 64 | 64 | 64 | 64 | 64 | 65 | 65 | 66 |
| Mixing energy, Watts | 8.6 | 9.1 | 10.9 | 8.7 | 8.9 | 9.7 | 9.5 | 8.3 |
| Mixing time, min | 4.0 | 4.1 | 3.9 | 4.3 | 3.9 | 4.1 | 4.1 | 4.1 |
| Loaf volume, cm3/100 g flour | 1105 | 1110 | 1105 | 1095 | 1115 | 1070 | 1100 | 1095 |

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

Table 3 - Moisture content, test weight and other grade determining factors¹
Pacific export cargoes of Wheat, Canada Western Red Spring
Third and fourth quarters 2007-2008

| | No. 1 CWRS | | | | | | |
|-----------------------------------|---------------------------------------|------|------|------|------|------------|------|
| | Guaranteed minimum protein content, % | | | | | | |
| | 15.0 | 14.5 | 14.0 | 13.5 | 13.0 | 12.5 | |
| Number of cargoes | 1 | 2 | 7 | 23 | 1 | 1 | |
| Thousands of tonnes | 4 | 37 | 100 | 497 | 36 | 3 | |
| Moisture content, % | | | | | | | |
| Weighted mean | 11.7 | 12.2 | 12.7 | 12.6 | 13.0 | 13.0 | |
| Standard deviation | 0.00 | 0.64 | 0.29 | 0.26 | 0.00 | 0.00 | |
| Minimum | 11.7 | 11.7 | 12.1 | 12.2 | 13.0 | 13.0 | |
| Maximum | 11.7 | 12.6 | 13 | 13.2 | 13.0 | 13.0 | |
| Test weight, kg/hL | | | | | | | |
| Weighted mean | 80.7 | 80.7 | 81.1 | 81.4 | 81.9 | 83.0 | |
| Standard deviation | 0.00 | 0.49 | 0.35 | 0.38 | 0.00 | 0.00 | |
| Minimum | 80.7 | 80.4 | 80.6 | 80.0 | 81.9 | 83.0 | |
| Maximum | 80.7 | 81.1 | 81.5 | 81.8 | 81.9 | 83.0 | |
| Wheats of other classes, % | | | | | | | |
| Weighted mean | 0.40 | 0.49 | 0.20 | 0.22 | 0.16 | 0.30 | |
| Cereal grains other than wheat, % | | | | | | | |
| Weighted mean | 0.08 | 0.10 | 0.11 | 0.13 | 0.09 | 0.16 | |
| | No. 2 CWRS | | | | | No. 3 CWRS | Feed |
| | Guaranteed minimum protein content, % | | | | | | |
| | 14.0 | 13.5 | 13.0 | 12.5 | 12.0 | | |
| Number of cargoes | 6 | 12 | 6 | 17 | 1 | 14 | 1 |
| Thousands of tonnes | 106 | 300 | 168 | 464 | 37 | 422 | 6 |
| Moisture content, % | | | | | | | |
| Weighted mean | 13.8 | 13.9 | 13.9 | 13.8 | 13.7 | 14.2 | 14.3 |
| Standard deviation | 0.34 | 0.32 | 0.38 | 0.20 | 0.00 | 0.14 | 0.00 |
| Minimum | 13.2 | 13.2 | 13.0 | 13.2 | 13.7 | 14.0 | 14.3 |
| Maximum | 14.2 | 14.3 | 14.2 | 14.1 | 13.7 | 14.5 | 14.3 |
| Test weight, kg/hL | | | | | | | |
| Weighted mean | 80.5 | 80.9 | 81.6 | 81.8 | 81.9 | 81.2 | 79.8 |
| Standard deviation | 0.50 | 0.51 | 0.22 | 0.47 | 0.00 | 0.53 | 0.00 |
| Minimum | 79.9 | 79.8 | 81.1 | 80.5 | 81.9 | 80.3 | 79.8 |
| Maximum | 81.4 | 81.7 | 81.7 | 82.4 | 81.9 | 82.0 | 79.8 |
| Wheats of other classes, % | | | | | | | |
| Weighted mean | 0.16 | 0.09 | 0.10 | 0.18 | 0.17 | 0.28 | 0.00 |
| Cereal grains other than wheat, % | | | | | | | |
| Weighted mean | 0.21 | 0.21 | 0.19 | 0.21 | 0.25 | 0.28 | 0.27 |

¹ Canadian Grain Commission, Industry Services data for official loading samples tested at time of loading.

**Table 4 - Wheat, Canada Western Red Spring
Pacific export cargo composites
Third and fourth quarters 2007-08**

| Quality parameter ¹ | No. 1 CWRs | | | No. 2 CWRs | | | | No. 3 CWRs ² |
|---|---------------------------------------|------|------|------------|------|------|------|-------------------------|
| | Guaranteed minimum protein content, % | | | | | | | |
| | 14.5 | 14.0 | 13.5 | 14.0 | 13.5 | 13.0 | 12.5 | |
| Wheat | | | | | | | | |
| Weight per 1000 kernels, g | 27.8 | 28.7 | 29.4 | 30.7 | 31.5 | 33.0 | 32.4 | 34.1 |
| Protein content, % | 15.1 | 14.5 | 14.1 | 14.4 | 13.7 | 13.3 | 12.9 | 12.9 |
| Protein content, % (dry matter basis) | 17.5 | 16.7 | 16.3 | 16.6 | 15.8 | 15.3 | 15.0 | 14.9 |
| Ash content, % | 1.58 | 1.57 | 1.60 | 1.62 | 1.59 | 1.55 | 1.56 | 1.57 |
| Falling number, s | 470 | 435 | 440 | 340 | 355 | 370 | 385 | 330 |
| PSI | 52 | 53 | 53 | 54 | 53 | 53 | 52 | 53 |
| Milling | | | | | | | | |
| Flour yield | | | | | | | | |
| Clean wheat basis, % | 76.1 | 76.3 | 76.6 | 76.4 | 76.1 | 76.1 | 75.0 | 76.1 |
| 0.50% ash basis, % | 75.1 | 75.8 | 75.1 | 74.9 | 75.1 | 76.6 | 74.0 | 75.1 |
| Flour | | | | | | | | |
| Protein content, % | 14.4 | 13.7 | 13.4 | 13.7 | 13.2 | 12.7 | 12.4 | 12.5 |
| Wet gluten content, % | 38.6 | 36.8 | 35.1 | 36.9 | 35.2 | 33.2 | 32.7 | 33.7 |
| Ash content, % | 0.52 | 0.51 | 0.53 | 0.53 | 0.52 | 0.49 | 0.52 | 0.52 |
| Grade colour, Satake units | -1.4 | -1.8 | -1.7 | -1.3 | -1.8 | -1.8 | -1.7 | -1.2 |
| AGTRON colour, % | 66 | 72 | 70 | 67 | 69 | 73 | 71 | 66 |
| Starch damage, % | 6.9 | 7.5 | 7.7 | 7.6 | 7.5 | 8.0 | 8.2 | 8.6 |
| Amylograph peak viscosity, BU | 735 | 695 | 635 | 420 | 440 | 415 | 495 | 310 |
| Maltose value, g/100g | 2.1 | 2.3 | 2.3 | 2.4 | 2.5 | 2.7 | 2.6 | 2.8 |
| Farinogram | | | | | | | | |
| Absorption, % | 65.8 | 65.7 | 65.7 | 66.2 | 66.1 | 66.9 | 66.2 | 67.4 |
| Development time, min | 7.00 | 5.80 | 5.75 | 6.75 | 6.25 | 5.25 | 4.75 | 5.75 |
| Mixing tolerance index, BU | 25 | 20 | 30 | 30 | 25 | 30 | 30 | 30 |
| Stability, min | 9.5 | 10.0 | 7.8 | 9.0 | 8.5 | 8.0 | 7.3 | 7.0 |
| Extensogram | | | | | | | | |
| Length, cm | 21 | 20 | 19 | 20 | 20 | 20 | 21 | 20 |
| Height at 5 cm, BU | 260 | 275 | 270 | 260 | 235 | 225 | 235 | 240 |
| Maximum height, BU | 465 | 440 | 430 | 440 | 390 | 365 | 365 | 375 |
| Area, cm ² | 125 | 115 | 105 | 115 | 105 | 95 | 105 | 95 |
| Alveogram | | | | | | | | |
| Length, mm | 122 | 116 | 109 | 121 | 107 | 89 | 84 | 85 |
| P (height x 1.1), mm | 95 | 106 | 113 | 111 | 113 | 130 | 118 | 130 |
| W, x 10 ⁻⁴ joules | 353 | 382 | 384 | 410 | 380 | 391 | 331 | 360 |
| Baking (Canadian Short Process baking test) | | | | | | | | |
| Absorption, % | 65 | 65 | 66 | 66 | 66 | 66 | 65 | 66 |
| Mixing energy, Watts | 8.7 | 9.0 | 8.4 | 8.9 | 9.2 | 10.9 | 10.2 | 8.9 |
| Mixing time, min | 3.9 | 3.9 | 3.9 | 3.8 | 4.1 | 4.0 | 4.1 | 3.8 |
| Loaf volume, cm ³ /100 g flour | 1085 | 1085 | 1075 | 1065 | 1050 | 1040 | 1030 | 1025 |

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

² Not segregated by protein content

Wheat, Canada Western Amber Durum

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. 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 varieties of Wheat, Canada Western Amber Durum grown are Strongfield, AC Avonlea and Kyle.

Table 5 - Moisture content, test weight and other grade determining factors¹
Export cargoes of Wheat, Canada Western Amber Durum
Third and fourth quarters 2007-2008

| | No. 1 CWAD | | No. 2 CWAD | | No. 3 CWAD | |
|--|------------|---------|------------|---------|------------|---------|
| | Atlantic | Pacific | Atlantic | Pacific | Atlantic | Pacific |
| Number of cargoes | 31 | 8 | 21 | 2 | 7 | 0 |
| Thousands of tonnes | 557 | 125 | 219 | 27 | 58 | 0 |
| Moisture content, % | | | | | | |
| Weighted mean | 12.1 | 12.1 | 12.4 | 12.2 | 13.3 | - |
| Standard deviation | 0.27 | 0.21 | 0.29 | 0.35 | 0.61 | - |
| Minimum | 11.3 | 11.8 | 11.7 | 12.0 | 11.9 | - |
| Maximum | 12.8 | 12.3 | 12.9 | 12.5 | 13.6 | - |
| Test weight, kg/hL | | | | | | |
| Weighted mean | 81.5 | 81.5 | 82.0 | 80.9 | 81.6 | - |
| Standard deviation | 0.67 | 0.37 | 0.56 | 0.42 | 0.58 | - |
| Minimum | 79.8 | 81.1 | 80.1 | 80.6 | 80.8 | - |
| Maximum | 83.3 | 82.2 | 82.6 | 81.2 | 82.3 | - |
| Vitreous kernels, % | | | | | | |
| Weighted mean | 88.4 | 88.2 | 79.4 | 81.6 | 66.5 | - |
| Wheats of other classes, % | | | | | | |
| Weighted mean | 0.55 | 0.65 | 0.91 | 0.85 | 1.31 | - |
| Cereal grains other than wheat, % | | | | | | |
| Weighted mean | 0.08 | 0.13 | 0.12 | 0.30 | 0.23 | - |

¹ Canadian Grain Commission, Industry Services data for official loading samples tested at time of loading.

**Table 6 - Wheat, Canada Western Amber Durum
Export cargo composites
Third and fourth quarters 2007-08**

| Quality parameter ¹ | No. 1 CWAD | | No. 2 CWAD | No. 3 CWAD |
|---------------------------------------|------------|---------|------------|------------|
| | Atlantic | Pacific | Atlantic | Atlantic |
| Wheat | | | | |
| Weight per 1000 kernels, g | 35.8 | 37.3 | 35.4 | 40.7 |
| Protein content, % | 14.2 | 14.2 | 13.9 | 13.3 |
| Protein content, % (dry matter basis) | 16.4 | 16.4 | 16.1 | 15.4 |
| Ash content, % | 1.60 | 1.60 | 1.61 | 1.63 |
| Yellow pigment content, ppm | 8.9 | 8.5 | 8.8 | 8.2 |
| Falling number, s | 470 | 490 | 425 | 350 |
| Milling yield, % | 74.7 | 74.4 | 75.0 | 74.7 |
| Semolina yield, % | 66.1 | 66.0 | 66.1 | 65.7 |
| PSI, % | 36.0 | 38.2 | 38.0 | 37.8 |
| Semolina | | | | |
| Protein content, % | 13.2 | 13.1 | 12.7 | 12.5 |
| Wet gluten content, % | 32.0 | 31.5 | 31.0 | 30.5 |
| Dry gluten content, % | 11.3 | 11.2 | 11.0 | 10.7 |
| Ash content, % | 0.73 | 0.71 | 0.71 | 0.70 |
| Yellow pigment content, ppm | 8.3 | 8.0 | 7.8 | 7.5 |
| AGTRON colour, % | 68 | 69 | 69 | 68 |
| Minolta colour: | | | | |
| L* | 86.3 | 86.4 | 86.8 | 86.9 |
| a* | -2.6 | -2.7 | -2.7 | -2.7 |
| b* | 32.6 | 32.2 | 31.8 | 30.9 |
| Speck count per 50 cm ² | 23 | 25 | 33 | 33 |
| Falling number, s | 545 | 560 | 475 | 435 |
| Spaghetti | | | | |
| Dried at 70°C | | | | |
| Minolta colour: | | | | |
| L* | 74.7 | 75.2 | 75.1 | 74.6 |
| a* | 3.4 | 3.0 | 2.9 | 3.4 |
| b* | 60.6 | 60.2 | 59.1 | 57.5 |
| Firmness, g-cm | 1114 | 1093 | 1096 | 1045 |

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

Wheat, Canada Western Hard White Spring

Wheat, Canada Western Hard White Spring (CWHWS) is a hard white spring wheat with superior milling quality producing flour with excellent colour. It is suitable for bread and noodle production.

There are three milling grades in the CWHWS class.

The most commonly grown variety of CWHWS is Snowbird.

**Table 7 - Moisture content, test weight and other grade determining factors¹
Export cargoes of Wheat, Canada Western Hard White Spring
Third and fourth quarters 2007-2008**

| | No. 1 CWHWS | No. 2 CWHWS |
|--|-------------|-------------|
| Number of cargoes | 6 | 4 |
| Thousands of tonnes | 57 | 56 |
| Moisture content, % | | |
| Weighted mean | 13.2 | 13.6 |
| Standard deviation | 0.27 | 0.24 |
| Minimum | 12.7 | 13.3 |
| Maximum | 13.5 | 13.8 |
| Test weight, kg/hL | | |
| Weighted mean | 80.7 | 81.3 |
| Standard deviation | 1.01 | 0.68 |
| Minimum | 79.8 | 80.3 |
| Maximum | 82.7 | 81.8 |
| Wheats of other classes, % | | |
| Weighted mean | 0.10 | 0.47 |
| Cereal grains other than wheat, % | | |
| Weighted mean | 0.06 | 0.22 |

¹ Canadian Grain Commission, Industry Services data for official loading samples tested at time of loading.

**Table 8 - Wheat, Canada Western Hard White Spring
Export cargo composites
Third and fourth quarters 2007-2008**

| Quality parameter ¹ | No. 1 CWHWS | No. 2 CWHWS |
|--|-------------|-------------|
| Wheat | | |
| Weight per 1000 kernels, g | 28.0 | 29.2 |
| Protein content, % | 14.3 | 13.7 |
| Protein content, % (dry matter basis) | 16.5 | 15.9 |
| Ash content, % | 1.59 | 1.60 |
| Falling number, s | 485 | 465 |
| PSI | 51 | 51 |
| Milling | | |
| Flour yield | | |
| Clean wheat basis, % | 75.6 | 76.2 |
| 0.50% ash basis, % | 74.1 | 75.2 |
| Flour | | |
| Protein content, % | 13.5 | 13.0 |
| Wet gluten content, % | 35.2 | 34.5 |
| Ash content, % | 0.53 | 0.52 |
| Grade colour, Satake units | -2.3 | -1.9 |
| AGTRON colour, % | 75 | 75 |
| Starch damage, % | 7.6 | 7.9 |
| Amylograph peak viscosity, BU | 1065 | 930 |
| Maltose value, g/100g | 2.2 | 2.4 |
| Farinogram | | |
| Absorption, % | 64.7 | 65.3 |
| Development time, min | 6.00 | 6.50 |
| Mixing tolerance index, BU | 20 | 35 |
| Stability, min | 10.50 | 7.50 |
| Extensogram | | |
| Length, cm | 19 | 18 |
| Height at 5 cm, BU | 305 | 300 |
| Maximum height, BU | 508 | 490 |
| Area, cm ² | 120 | 110 |
| Alveogram | | |
| Length, mm | 92 | 90 |
| P (height x 1.1), mm | 113 | 123 |
| W, x 10 ⁻⁴ joules | 370 | 383 |
| Baking (Canadian Short Process baking test) | | |
| Absorption, % | 65 | 65 |
| Mixing energy, Watts | 57.9 | 62.7 |
| Mixing time, min | 5.4 | 4.6 |
| Loaf volume, cm ³ /100 g flour | 1105 | 1050 |

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

Wheat, Canada Prairie Spring Red and Wheat, Canada Prairie Spring White

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

The most commonly grown varieties eligible for milling grades of CPSR for the 2007-08 crop year are 5700PR, AC Crystal and AC Foremost.

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

Table 9 - Moisture content, test weight and other grade determining factors¹
Export cargoes of Wheat, Canada Prairie Spring Red and Wheat, Canada Prairie Spring White
Third and fourth quarters 2007-2008

| | No. 1 CPSR | No. 1 CPSW |
|--|------------|------------|
| Number of cargoes | 1 | 2 |
| Thousands of tonnes | 8 | 21 |
| Moisture content, % | | |
| Weighted mean | 14.4 | 14.0 |
| Standard deviation | 0.00 | 0.14 |
| Minimum | 14.4 | 13.9 |
| Maximum | 14.4 | 14.1 |
| Test weight, kg/hL | | |
| Weighted mean | 82.0 | 80.6 |
| Standard deviation | 0.00 | 0.00 |
| Minimum | 82.0 | 80.6 |
| Maximum | 82.0 | 80.6 |
| Wheats of other classes, % | | |
| Weighted mean | 0.00 | 1.96 |
| Cereal grains other than wheat, % | | |
| Weighted mean | 0.19 | 0.67 |

¹ Canadian Grain Commission, Industry Services data for official loading samples tested at time of loading.

Wheat, Canada Western Red Winter

Wheat, Canada Western Red Winter (CWRW) 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 bread (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.

Table 10 - Moisture content, test weight and other grade determining factors¹
Export cargoes of Wheat, Canada Western Red Winter
Third and fourth quarters 2007-2008

| | No. 1 CWRW |
|--|------------|
| Number of cargoes | 22 |
| Thousands of tonnes | 220 |
| Moisture content, % | |
| Weighted mean | 12.4 |
| Standard deviation | 0.95 |
| Minimum | 10.1 |
| Maximum | 13.6 |
| Test weight, kg/hL | |
| Weighted mean | 82.3 |
| Standard deviation | 0.72 |
| Minimum | 81.1 |
| Maximum | 83.9 |
| Wheats of other classes, % | |
| Weighted mean | 0.35 |
| Cereal grains other than wheat, % | |
| Weighted mean | 0.18 |

¹ Canadian Grain Commission, Industry Services data for official loading samples tested at time of loading.

**Table 11 - Wheat, Canada Western Red Winter
Export cargo composites
Third and fourth quarter 2007-08**

| Quality parameter ¹ | No. 1 CWRW |
|---|------------|
| Wheat | |
| Weight per 1000 kernels, g | 28.3 |
| Protein content, % | 11.0 |
| Protein content, % (dry matter basis) | 12.8 |
| Ash content, % | 1.53 |
| Falling number, s | 465 |
| Flour yield, % | 75.7 |
| PSI | 56 |
| Flour | |
| Protein content, % | 10.3 |
| Wet gluten content, % | 24.4 |
| Ash content, % | 0.51 |
| Grade colour, Satake units | -2.0 |
| AGTRON colour, % | 73 |
| Starch damage, % | 6.5 |
| Amylograph peak viscosity, BU | 609 |
| Maltose value, g/100g | 2.1 |
| Farinogram | |
| Absorption, % | 57.2 |
| Development time, min | 5.50 |
| Mixing tolerance index, BU | 25 |
| Stability, min | 9.50 |
| Extensogram | |
| Length, cm | 16 |
| Height at 5 cm, BU | 400 |
| Maximum height, BU | 620 |
| Area, cm ² | 125 |
| Alveogram | |
| Length, mm | 96 |
| P (height x 1.1), mm | 82 |
| W, x 10 ⁻⁴ joules | 271 |
| Baking (Remix-to-Peak baking test) | |
| Absorption, % | 54 |
| Remix time, min | 2.4 |
| Loaf volume, cm ³ /100 g flour | 765 |

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

Wheat, Canada Western Soft White Spring

Wheat, Canada Western Soft White Spring (CWSWS) 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 bread, steamed bread and certain types of noodles.

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

The most commonly grown variety of CWSWS is AC Andrew.

**Table 12 - Moisture content, test weight and other grade determining factors¹
Export cargoes of Wheat, Canada Western Soft White Spring
Third and fourth quarters 2007-2008**

| No. 2 CWSWS | |
|--|------|
| Number of cargoes | 5 |
| Thousands of tonnes | 55 |
| Moisture content, % | |
| Weighted mean | 13.5 |
| Standard deviation | 0.32 |
| Minimum | 13.0 |
| Maximum | 13.8 |
| Test weight, kg/hL | |
| Weighted mean | 80.2 |
| Standard deviation | 0.59 |
| Minimum | 79.6 |
| Maximum | 81.0 |
| Wheats of other classes, % | |
| Weighted mean | 1.27 |
| Cereal grains other than wheat, % | |
| Weighted mean | 0.10 |

¹ Canadian Grain Commission, Industry Services data for official loading samples tested at time of loading.