

Ontario Hard Red Winter Wheat

Technical Information



ONTARIO WHEAT

Ontario wheat producers have the experience and a history of innovation in wheat production to meet the quality demands of the international marketplace. Our producers have been growing export quality wheat for over fifty years. Ontario hard red winter wheat's flour yield, lower ash content and medium strength protein numbers ensure a high performing wheat for flat breads, noodles, pizza dough and other specialty products.

Ontario wheat is graded by International grade standards. These standards ensure our shipments of grain will consistently meet contract specifications for quality, safety and quantity.

Situated between the Great Lakes and the St. Lawrence River Basin, Ontario's temperature climate and fertile soils are key components to producing top quality hard red winter wheat.

Ontario's varied geography and size results in diversified wheat production – from soft wheat in the southwest to hard wheat in the east. Other key advantages to Ontario wheat include our proximity to a strong transportation infrastructure of highways, rail lines and river access to ocean ports and our ample supply of energy sources.

2016 WHEAT, CANADA EASTERN RED - HARD RED WINTER WHEAT

Quality data for Canada Eastern hard red wheat composites representing Ontario's hard red winter wheat varieties are shown in the table on page 2. Wheat protein is ideal for many flat bread, noodle and pizza dough applications at 11.0% and 12.7% on a dry matter basis for 2016.

This season's wheat falling number (441 seconds) and flour amylograph peak viscosity value (586 BU) is very high. This indicates an excellent quality of wheat with low levels of sprouting and enzyme activity, and expected longer shelf life for end products. Milling yield from the 2016 composite samples is 74.3%.

CANADA EASTERN HARD RED WINTER WHEAT - EXPORT GRADE SPECIFICATIONS*

| | No. 2 CEHRW | No. 3 CEHRW | CE FEED |
|--|-------------|-------------|-----------------------------------|
| Minimum test weight, kg/hL | 74 | 69 | 65 |
| Total foreign material including other cereal grains | 1.5 | 3.5 | 10 |
| Fusarium damage, % | 1.0 | 1.5 | 5 |
| Heated, % | 0.75 | 2.00 | 2.50 |
| Shrunken, % | 10 | 12 | no limit |
| Broken, % | 10 | 10 | 50 |
| Total shrunken & broken, % | 11 | 13 | no limit within broken tolerances |
| Smudge, % | 1 | 5 | no limit |
| Total smudge and blackpoint, % | 20 | 35 | no limit |
| Sprouted, % | 2.5 | 8 | no limit |

* abridged from the Canadian Grain Commission's Official Grain Grading Guide
For complete official grain standards, see <http://www.grainscanada.gc.ca/oggg-gocg/04/oggg-gocg-4f-eng.htm#m>.

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CANADA EASTERN HARD RED WINTER WHEAT

Quality data for 2016 harvest survey grade composite samples

WHEAT

| | |
|---------------------------------|------------|
| Test Weight | 81.4 kg/hL |
| Weight Per 1000 Kernels | 39.8 g |
| Protein C.N.A. ¹ | 11.0 % |
| Protein (dry matter basis) | 12.7 % |
| Protein Loss on Milling | 0.1 % |
| Ash Content | 1.43 % |
| Falling Number | 441 sec |
| Particle Size Index | 61.7 % |
| Milling Yield - clean basis | 71.8 % |
| Milling Yield - 0.50% ash basis | 74.3 % |

FLOUR

| | |
|--|----------|
| Protein C.N.A. ² | 10.9 % |
| Amylograph Peak Viscosity | 586 BU |
| Wet Gluten ² | 28.9 % |
| Dry Gluten ² | 9.4 % |
| Gluten Index ² | 84.9 % |
| Ash Content ² | 0.45 % |
| Starch Damage | 27.1 UCD |
| Solvent retention capacity - water | 67 % |
| Solvent retention capacity - lactic acid 5% | 140 % |
| Solvent retention capacity - lactic acid after 30 days | 137 % |
| Solvent retention capacity - sucrose 50 % | 114 % |
| Solvent retention capacity - sodium carbonate 5% | 98 % |

FARINOGRAPH

| | |
|------------------------|----------|
| Absorption | 61.1 % |
| Dough Development Time | 3.40 min |
| Mixing Tolerance Index | 35 BU |
| Stability | 7.84 min |

EXTENSOGRAPH (45/135 min)

| | |
|--------------------|-----------------------|
| Water Absorption | 58.1 % |
| Length (E) | 16.6/15.2 cm |
| Height at 5cm (R5) | 177/223 BU |
| Max Height (Rmax) | 257/303 BU |
| Area (A) | 58/62 cm ² |

ALVEOGRAPH

| | |
|------------|------------------------|
| P | 80 mmH ₂ O |
| Length (L) | 82 mm |
| P/L | 0.98 |
| W | 219 10 ⁻⁴ J |

BAKING (REMIX-TO-PEAK BAKING TEST)

| | |
|---|------------------------|
| Long fermentation - Baking Absorption | 59.1 % |
| Long fermentation - Time | 2.6 min |
| Long fermentation - Mixing energy dough (RAR) | 1014 Wh/kg dough |
| Long fermentation - Loaf Volume/100g flour | 643 cm ³ |
| Specific Volume | 4.5 cm ³ /g |
| Loaf height | 82 mm |

1 Data is reported on a 13.5% moisture basis for wheat

2 Data is reported on a 14.0% moisture basis for flour

Testing was conducted at the Grains Analytical Testing Laboratory in Guelph, Ontario, a joint venture between Grain Farmers of Ontario and SGS Canada. For a complete description of methodology used, please contact Paolo Santangelo, Commercial Manager at paolo.santangelo@sgs.com.