Nebraska Wheat Variety Survey
2018-2019
**Variety Survey Data**

- SY Monument was the top selling wheat seed in 2018-2019, making it the top selling variety for three years in a row.
- Nebraska producers planted 46 varieties.
- The top 22 varieties accounted for 90.82 percent of seed sales.
- Seven of the top 22 varieties were released by Husker Genetics. These varieties accounted for 31.15 percent of seed sales.
- Ten of the top 22 varieties were released by private companies. These varieties accounted for 46.86 percent of seed sales.
- Five of the top 22 varieties were released by other public institutions. These varieties accounted for 12.81 percent of seed sales.

**Variety Survey Methodology**

Results of this survey are based on certified seed sales of Hard Red Winter wheat reported for the state of Nebraska. Certified Seed accounted for 68 percent of Nebraska’s wheat planting in the fall of 2018. Data included in these pages is provided by the Nebraska Crop Improvement Association, Husker Genetics, and the Wheat Quality Council.

**Hard White Wheat**

The majority of white wheat grown in Nebraska is done so under a direct contract. However, the top five Hard White wheat varieties planted in the fall of 2018 included: Breckenridge, Snowmass, Aspen, Sunshine, and Nugrain.

**Future Variety Potential**

Currently, NWB is supporting research into Hard Red Winter, Soft Red Winter, Hard White, Hard Red Spring and hybrid wheat varieties that may be adaptable to planting in Nebraska.

**About NWB**

The Nebraska Wheat Board (NWB) was formed in 1955 after the Nebraska Wheat Resources Act was passed. All NWB policies are established by a seven-member board of directors composed of wheat producers from Nebraska who are appointed by the Governor. Each bushel of wheat marketed in the state is assessed an excise tax of four-tenths of one percent (0.4%) of net value at the point of first sale. These monies are deposited into the State Treasury and are used by NWB to advance Nebraska’s wheat industry. The board of directors oversees all expenditures. Funding proposals in each area are submitted on an annual basis, regardless of whether the project or organization was funded previously. The board completes two readings of the proposals and determines which will receive funds during the annual budget meeting held in May or June. Funds are invested in five areas as directed by the Nebraska Wheat Resources Act: international marketing, domestic marketing, research, federal farm policy, and education and promotion.
<table>
<thead>
<tr>
<th>Variety</th>
<th>%, 50# bu. sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY Monument</td>
<td>14.8</td>
</tr>
<tr>
<td>SY Wolf</td>
<td>8.18</td>
</tr>
<tr>
<td>Husker Genetics Ruth Brand</td>
<td>7.96</td>
</tr>
<tr>
<td>WB Grainfield</td>
<td>7.79</td>
</tr>
<tr>
<td>Settler CL</td>
<td>6.87</td>
</tr>
<tr>
<td>Husker Genetics Robidoux Brand</td>
<td>5.87</td>
</tr>
<tr>
<td>Brawl CL Plus</td>
<td>5.67</td>
</tr>
<tr>
<td>Husker Genetics Freeman Brand</td>
<td>3.98</td>
</tr>
<tr>
<td>LCS Link</td>
<td>3.58</td>
</tr>
<tr>
<td>AP503 CL2</td>
<td>3.22</td>
</tr>
<tr>
<td>SY Sunrise</td>
<td>2.91</td>
</tr>
<tr>
<td>Husker Genetics Overland Brand</td>
<td>2.87</td>
</tr>
<tr>
<td>Winterhawk</td>
<td>2.63</td>
</tr>
<tr>
<td>Paradise</td>
<td>2.21</td>
</tr>
<tr>
<td>Zenda</td>
<td>1.98</td>
</tr>
<tr>
<td>Wesley</td>
<td>1.84</td>
</tr>
<tr>
<td>Infinity CL</td>
<td>1.76</td>
</tr>
<tr>
<td>Avery</td>
<td>1.55</td>
</tr>
<tr>
<td>SY Rugged</td>
<td>1.44</td>
</tr>
<tr>
<td>TAM 111</td>
<td>1.4</td>
</tr>
<tr>
<td>Longbranch</td>
<td>1.3</td>
</tr>
<tr>
<td>T158</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Variety sales reported but comprising less than 1% individually include: Camelot, LCS Chrome, Goodstreak, Cowboy, WB4948, Byrd, WB4462, SY Achieve, LCS Fusion AX, Everest, Pronghorn, LCS Mint, WB4458, Spur, WB Cedar; Denali, Husker Genetics Panhandle Brand, Langin, SY Legend, WB4269, LCS Avenger, Jagalene, SY Grit, WB4721.
Variety Overview
SY Monument is broadly adapted with good yields across the area of adaptation. It has white chaff and is a medium-late maturating variety. It has moderate resistance to leaf and stripe rust and is a high tillering wheat with good head sized, excellent acid soil tolerance, Soilborne Wheat Mosaic Virus resistance, good winter hardiness, and very good test weight patterns. SY Monument can only be sold as a class of certified seed.

Origin: AgriPro
PVP Status: P-94

Available from 10 certified seed growers in NE.

Agronomic Characteristics
Maturity: Medium Late
Winter Hardiness: Very Good
Straw Strength: Good
Plant Height: Medium Short
Coleoptile Length: Medium
Bushel Weight: Very Good
Protein Content: Data NA
Actual results may vary with season, location, and production conditions.

Reaction
Hessian Fly: Susceptible
Leaf Rust: Moderately Resist
Stem Rust: Moderately Resist
Stripe Rust: Moderately Resist
Soil Borne Mosaic: Mod. Resist
Wheat Streak Mosaic: Mod. Resist

Wheat Data
Test Weight: 63.8 lb/bu
1000 kernel weight: 32.5 gm
Wheat Protein (12% mb): 12.3
Wheat Ash (12% mb) 1.63

Milling and Flour Quality Data
Milling and Flour Quality Data Continued
MIXOGRAPH
Flour Abs (% as-is): 64.2
Flour Abs (14% m) 62.8
Mix Time: 7.3 min
Mix Tolerance (0-6): 5

FARINOGRAPH
Flour Abs (% as-is): 62.8
Flour Abs (14% mb): 61.4
Peak Time: 2.2 min
Mix stability: 4.9 min
Mix Tolerance Index (FU) 41
Breakdown Time: 4.3 min

ALVEOGRAPH
P(mm) Tenancity: 114
L(mm) Extensibility: 51
G(mm) Swelling Index: 15.9
W(10^4 J) strength (curve area): 247
P/L curve configuration ratio: 2.23
le(P200/P) eslasticity index: 64.1

EXTENSIGRAPH
Resist (BU at 45/90/135 min): 507/787/805
Extensibility (mm at 45/90/125 min): 133/120/103
Energy (cm^2 at 45/90/135): 121/150/112
Resist max (BU at 45/90/135 min): 754/1046/952
Ratio (at 45/90/135 min): 3.8/6.6/7.8

PROTEIN ANALYSIS
HMW-GS Composition: 2*, 7+9, 5+10
TMP/TPP: 0.99

SEDIMENTATION TEST
Volume: 46.9 ml
**Variety Overview**
SY Wolf is a semi-dwarf hard red wheat variety with excellent straw strength and medium in maturity. It has very good test weight, straw strength and winterhardiness. It was developed, produced, and marketed exclusively under the AgriPro brand name. SY Wolf can only be sold as a class of certified seed.

Available from 7 certified seed growers in NE.

**Milling and Flour Quality Data Continued**

**MIXOGRAPH**
- Flour Abs (% as-is): 65
- Flour Abs (14% mb): 62.9
- Mix Time: 5.25 min
- Mix Tolerance (0-6): 4

**FARINOGRAPH**
- Flour Abs (% as-is): 62.6
- Flour Abs (14% mb): 60.4
- Development time: 10.3 min
- Mix stability: 16.6 min
- Mix Tolerance Index (FU): 14
- Breakdown Time: 18.1 min

**ALVEOGRAPH**
- P(mm) Tenancity: 101
- L(mm) Extensibility: 71
- G(mm) Swelling Index: 18.8
- W(10^4 J) strenght (curve area): 285
- P/L curve configuration ratio: 1.42
- le(P_{200}/P) eslasticity index: 63.9

**EXTENSIGRAPH**
- Resist (BU at 45/90/135 min): 338/724/879
- Extensibility (mm at 45/90/125 min): 130/107/96
- Energy (cm² at 45/90/135): 72/110/105
- Resist max (BU at 45/90/135 min): 420/818/900
- Ratio (at 45/90/135 min): 2.6/6.74/9.15

**PROTEIN ANALYSIS**
- HMW-GS Composition: 1/2*, 7+9, 5+10
- %IPP: 42.5

**SEDIMENTATION TEST**
- Volume: 36.2 ml

**Agronomic Characteristics**
- Maturity: Medium
- Winter Hardiness: Good
- Straw Strength: Very Good
- Plant Height: Medium Short
- Coleoptile Length: Medium
- Bushel Weight: Very Good
- Protein Content: Good

*Actual results may vary with season, location, and production conditions.*

**Reaction**
- Hessian Fly: Susceptible
- Leaf Rust: Moderately Resist
- Stem Rust: Moderately Resist
- Stripe Rust: Moderately Resist
- Soil Borne Mosaic: Mod. Resist
- Wheat Streak Mosaic: Susceptible

**Wheat Data**
- Test Weight: 61.8 lb/bu
- 1000 kernel weight: 35.6 gm
- Wheat Protein (12% mb): 14.1
- Wheat Ash (12% mb) 1.51

**Milling and Flour Quality Data**
- Flour Yld Miag Multomat Mill: 74.6
- Flour Yld Quadrumat Sr. Mill: 72.2
- Flour Moisture (%): 12.1
- Flour Protein (14% mb): 12.3
- Flour Ash (14% mb): 0.52
- Peak Time: 6.1 minutes
- Peak Viscosity: 197.8 RVU
- Breakdown: 69.5 RVU
- Final Viscosity@13 min: 244 RVU
- Minolta color meter L: 91.5
- Minolta color meter a: -0.92
- Minolta color meter b: 9.65
- Falling number: 501 sec
- Damaged Starch (AI %): 95.82
- Damaged Starch (AACC76-31): 6.13
**Variety Overview**

Husker Genetics Ruth Brand is an awned, tan glumed cultivar that is moderately late in maturity. It's a semi-dwarf variety, approximately 33 inches in height. It has moderate straw strength and good winter hardiness. Ruth is resistant to Soilborne Wheat Mosaic Virus and moderately resistant to stem rust. It was developed cooperatively by the Nebraska Agricultural Experiment Station and the USDA-ARS. It can only be sold as a class of certified seed.

**Origin:** Husker Genetics  
**PVP Status:** P-94  
**Available from 13 certified seed growers in NE.**

**Agronomic Characteristics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity</td>
<td>Medium Late</td>
</tr>
<tr>
<td>Winter Hardiness</td>
<td>Good</td>
</tr>
<tr>
<td>Straw Strength</td>
<td>Good</td>
</tr>
<tr>
<td>Plant Height</td>
<td>Medium</td>
</tr>
<tr>
<td>Coleoptile Length</td>
<td>Data NA</td>
</tr>
<tr>
<td>Bushel Weight</td>
<td>Good</td>
</tr>
<tr>
<td>Protein Content</td>
<td>Good</td>
</tr>
</tbody>
</table>

*Actual results may vary with season, location, and production conditions.*

**Reaction**

- **Hessian Fly:** Mod. Sus.-Mod. Resist
- **Leaf Rust:** Moderately Susceptible
- **Stem Rust:** Moderately Resist
- **Stripe Rust:** Susceptible
- **Soil Borne Mosaic:** Resistant
- **Wheat Streak Mosaic:** Susceptible

**Wheat Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Data</th>
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</thead>
<tbody>
<tr>
<td>Test Weight</td>
<td>58.3 lb/bu</td>
</tr>
<tr>
<td>1000 kernel weight</td>
<td>29 gm</td>
</tr>
<tr>
<td>Wheat Protein (12% mb)</td>
<td>11.5</td>
</tr>
<tr>
<td>Wheat Ash (12% mb)</td>
<td>1.64</td>
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**Millling and Flour Quality Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour Moisture (%)</td>
<td>13</td>
</tr>
<tr>
<td>Flour Protein (14% mb)</td>
<td>10.2</td>
</tr>
<tr>
<td>Flour Ash (14% mb)</td>
<td>0.53</td>
</tr>
<tr>
<td>Peak Time (min)</td>
<td>6.2</td>
</tr>
<tr>
<td>Peak Viscosity (RVU)</td>
<td>218.7</td>
</tr>
<tr>
<td>Breakdown (RVU)</td>
<td>82.8</td>
</tr>
<tr>
<td>Final Viscosity (RVU)</td>
<td>244.9</td>
</tr>
<tr>
<td>Minolta color meter L</td>
<td>91.23</td>
</tr>
<tr>
<td>Minolta color meter a</td>
<td>-1.23</td>
</tr>
<tr>
<td>Minolta color meter b</td>
<td>8.43</td>
</tr>
<tr>
<td>PPO</td>
<td>0.626</td>
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<tr>
<td>Falling number (sec)</td>
<td>464</td>
</tr>
<tr>
<td>Damaged Starch (A1 %)</td>
<td>95.2</td>
</tr>
<tr>
<td>Damaged Starch (AACC76-31)</td>
<td>5.67</td>
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**Milling and Flour Quality Data Continued**

<table>
<thead>
<tr>
<th>Description</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour Abs (% as-is)</td>
<td>60.6</td>
</tr>
<tr>
<td>Flour Abs (14% mb)</td>
<td>59.4</td>
</tr>
<tr>
<td>Mix Time (min)</td>
<td>3.9</td>
</tr>
<tr>
<td>Mix Tolerance (0-6)</td>
<td>4</td>
</tr>
</tbody>
</table>

**FARINOGRAPH**

- **Flour Abs (%) as-is:** 56.9
- **Flour Abs (14% mb):** 55.7
- **Development Time:** 6.9 min
- **Mix stability:** 9.3 min
- **Mix Tolerance Index (FU):** 33
- **Breakdown Time:** 11 min

**ALVEOGRAPH**

- **P(mm) Tenancity:** 73
- **L(mm) Extensibility:** 91
- **G(mm) Swelling Index:** 21.2
- **W(10^4 J) strenght (curve area):** 228
- **P/L curve configuration ratio:** 0.8
- **le(P200/P) elasticity index:** 57.3

**EXTENSIGRAPH**

- **Resist (BU at 45/90/135 min):** 313/387/389
- **Extensibility (mm at 45/90/125 min):** 147/154/144
- **Energy (cm² at 45/90/135):** 83/112/98
- **Resist max (BU at 45/90/135 min):** 425/556/515
- **Ratio (at 45/90/135 min):** 2.14/2.51/2.71

**PROTEIN ANALYSIS**

- **HMW-GS Composition:** 2*,1,7+9, 5+10
- **%IPP:** 48.62

**SEDIMENTATION TEST**

- **Volume:** 39.5 ml
**Variety Overview**

WB Grainfield is medium maturing with good winter hardiness. It is medium in height with very good straw strength. It is resistant to leaf rust, moderately resistant to stripe rust and tan spot, and moderately susceptible to powdery mildew and Fusarium head blight. It can only be sold as a class of certified seed.

Available from 5 certified seed growers in NE.

 Origin: WestBred  
PVP Status: P-94

**Agronomic Characteristics**
- Maturity: Medium Late
- Winter Hardiness: Very Good
- Straw Strength: Very Good
- Plant Height: Medium
- Coleoptile Length: Short
- Bushel Weight: Very Good
- Protein Content: Very Good

*Actual results may vary with season, location, and production conditions.*

**Reaction**
- Hessian Fly: Susceptible
- Leaf Rust: Moderately Resist
- Stem Rust: Data NA
- Stripe Rust: Mod.Sus.-Mod.Resist
- Soil Borne Mosaic: Resistant
- Wheat Streak Mosaic: Susceptible

**Wheat Data**
- Test Weight: 62.2 lb/bu
- 1000 kernel weight: 31.3 gm
- Wheat Protein (12% mb): 14.4
- Wheat Ash (12% mb) 1.03

**Milling and Flour Quality Data**

**MILLING AND FLOUR QUALITY DATA CONTINUED**

<table>
<thead>
<tr>
<th>MIXOGRAPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour Abs (% as-is): 66</td>
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<tr>
<td>Flour Abs (14% m) 64.3</td>
</tr>
<tr>
<td>Mix Time: 3.5 min</td>
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<tr>
<td>Mix Tolerance (0-6): 2</td>
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</table>

<table>
<thead>
<tr>
<th>FARINOGRAPH</th>
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</thead>
<tbody>
<tr>
<td>Flour Abs (% as-is): 64</td>
</tr>
<tr>
<td>Flour Abs (14% mb): 62.3</td>
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<tr>
<td>Development time: 8.9 min</td>
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<tr>
<td>Mix stability: 15.6 min</td>
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<tr>
<td>Mix Tolerance Index (FU): 17</td>
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<td>Breakdown Time: 17.7 min</td>
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<table>
<thead>
<tr>
<th>ALVEOGRAPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>P(mm) Tenacity: 92</td>
</tr>
<tr>
<td>L(mm) Extensibility: 96</td>
</tr>
<tr>
<td>G(mm) Swelling Index: 21.8</td>
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<tr>
<td>W(10^-4 J) strength (curve area): 314</td>
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<tr>
<td>P/L curve configuration ratio: 0.96</td>
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<tr>
<td>l(e(P200/P) elasticity index: 61.6</td>
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<table>
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<tr>
<th>EXTENSISGRAPH</th>
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<tr>
<td>Resist (BU at 45/90/135 min): 295/433/535</td>
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<tr>
<td>Extensibility (mm at 45/90/125 min): 159/151/159</td>
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<tr>
<td>Energy (cm² at 45/90/135): 89/117/159</td>
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<tr>
<td>Resist_max (BU at 45/90/135 min): 427/608/794</td>
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<tr>
<td>Ratio (at 45/90/135 min): 1.86/2.86/3.36</td>
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<table>
<thead>
<tr>
<th>PROTEIN ANALYSIS</th>
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<tbody>
<tr>
<td>HMW-GS Composition: 2*, 7+9, 5+10</td>
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<tr>
<td>%IPP: 38.88</td>
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**SEDIMENTATION TEST**

Volume: 46.2 ml
Variety Overview

Settler CL is a moderately late maturing, semi-dwarf hard red winter wheat. It is an awned, ivory-glumed cultivar with moderate straw strength. The winter hardiness is good to very good. Settler CL is moderately resistant to stem rust and wheat soilborne mosaic virus. It is slightly less susceptible to Fusarium head blight than many widely grown lines. Settler CL is available from NuPride Genetics Network Affiliates. It can only be sold as a class of certified seed.

Origin: Husker Genetics  
PVP Status: P-94

Agronomic Characteristics
Maturity: Medium Late  
Winter Hardiness: Good  
Straw Strength: Good  
Plant Height: Medium  
Coleoptile Length: Data NA  
Bushel Weight: Good  
Protein Content: Good  
Actual results may vary with season, location, and production conditions.

Reaction
Hessian Fly: Mod.Sus.-Mod.Resist  
Leaf Rust: Moderately Susceptible  
Stem Rust: Moderately Resist  
Stripe Rust: Susceptible  
Soil Borne Mosaic: Resistant  
Wheat Streak Mosaic: Susceptible

Wheat Data
Test Weight: 58.9 lb/bu  
1000 kernel weight: 28.8 gm  
Wheat Protein (12% mb): 12.2  
Wheat Ash (12% mb) 1.63

Milling and Flour Quality Data
Flour Yld Miag Multomat Mill: 69.9  
Flour Yld Quadrumat Sr. Mill: 72.6  
Flour Moisture (%): 11.4  
Flour Protein (14% mb) 11.03  
Flour Ash (14% mb) 0.44  
Peak Time: 6.2 minutes  
Wet Gluten (%): 25.9  
Dry Gluten (%): 9.5  
Gluten index: 98.8  
Minolta color meter L: 92.33  
Minolta color meter a: -1.47  
Minolta color meter b: 8.53  
Falling number: 592 sec

Milling and Flour Quality Data Continued
MIXOGRAPH  
Flour Abs: 60.3%  
Mix Time: 4.1min  
Mix Tolerance (0-6): 3

FARINOGRAPH  
Flour Abs: 55.9%  
Peak Time: 6.5 min  
Mix stability: 18.5 min

ALVEOGRAPH  
P(mm) Tenancity: 60  
L(mm) Extensibility: 79  
P/L curve configuration ratio: 0.76

Available from 7 certified seed growers in NE.
**Variety Overview**

Husker Genetics Robidoux Brand was co-developed by the University of Nebraska and the USDA-ARS. is moderately late in maturity and is best adapted to western rainfed areas where drought is common and irrigated production sites. It is moderately resistant to stripe rust and moderately resistant to moderately susceptible to stem rust. Non-complementary varieties include Millenium and Wahoo. It can only be sold as a class of certified seed.

Available from 7 certified seed growers in NE.

**Agronomic Characteristics**

- **Maturity:** Medium Early
- **Winter Hardiness:** Good
- **Straw Strength:** Good
- **Plant Height:** Medium
- **Coleoptile Length:** Medium
- **Bushel Weight:** Good
- **Protein Content:** Good

*Actual results may vary with season, location, and production conditions.*

**Reaction**

- **Hessian Fly:** Susceptible
- **Leaf Rust:** Moderately Susceptible
- **Stem Rust:** Moderately Resistant
- **Stripe Rust:** Moderately Resistant
- **Soil Borne Mosaic:** Resistant
- **Wheat Streak Mosaic:** Susceptible

**Wheat Data**

- **Test Weight:** 56.8 lb/bu
- **1000 kernel weight:** 28.8gm
- **Wheat Protein (12% mb):** 13.5
- **Wheat Ash (12% mb):** 1.69

**Milling and Flour Quality Data**

- **Flour Yield (14% mb):** 64.6
- **Flour Protein:** 13.5
- **Flour Ash:** 1.69
- **Flour Moisture:** 13.3
- **Flour Protein (14% mb):** 12
- **Flour Ash (14% mb):** 0.51
- **Peak Time:** 5.2 min
- **Mix Stability:** 10 min
- **Mix Tolerance Index (FU):** 20
- **Breakdown Time:** 12.5 min

**Milling and Flour Quality Data Continued**

**MIXOGRAPH**

- Flour Abs (% as-is): 65.1
- Flour Abs (14% m): 64.6
- Mix Time: 2.9 min
- Mix Tolerance (0-6): 2

**FARINOGRAPH**

- Flour Abs (% as-is): 60.7
- Flour Abs (14% mb): 60.2
- Peak time: 5.2 min
- Mix stability: 10 min
- Mix Tolerance Index (FU): 20
- Breakdown Time: 12.5 min

**ALVEOGRAPH**

- P(mm) Tenancity: 67
- L(mm) Extensiblity: 121
- G(mm) Swelling Index: 24.5
- W(10^-4 J) strength (curve area): 246
- P/L curve configuration ratio: 0.55
- le(P200/P) elasticity index: 56.1

**EXTENSIGNAPHR**

- Resist (BU at 45/90/135 min): 247/289/287
- Extensibility (mm at 45/90/125 min): 157/168/163
- Energy (cm² at 45/90/135): 71/96/90
- Resist max (BU at 45/90/135 min): 337/430/426
- Ratio (at 45/90/135 min): 1.6/1.7/1.8

**PROTEIN ANALYSIS**

- HMW-GS Composition: 2*, 2+12, 7+9
- TMP/TPP: 0.85

**SEDIMENTATION TEST**

- Volume: 46.3 ml
## Variety Overview

Brawl CL Plus (Brawl) is an awned, white-glumed, hard red winter wheat. It is a medium-tall, early maturing and has excellent straw strength. It has a medium-long coleoptile and excellent test weight, and baking and milling qualities. The non-transgenic herbicide tolerance in Brawl CL Plus was developed by BASF. It is a wheat to be used as a component of the BASF CLEARFIELD Production System. Brawl can only be sold as a class of certified seed.

Origin: Colorado Wheat
PVP Status: P-94

### Agronomic Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity</td>
<td>Early</td>
</tr>
<tr>
<td>Winter Hardiness</td>
<td>Good</td>
</tr>
<tr>
<td>Straw Strength</td>
<td>Very Good</td>
</tr>
<tr>
<td>Plant Height</td>
<td>Medium Tall</td>
</tr>
<tr>
<td>Coleoptile Length</td>
<td>Medium Long</td>
</tr>
<tr>
<td>Bushel Weight</td>
<td>Very Good</td>
</tr>
<tr>
<td>Protein Content</td>
<td>Good</td>
</tr>
</tbody>
</table>

*Actual results may vary with season, location, and production conditions.*

### Reaction

- **Hessian Fly:** Susceptible
- **Leaf Rust:** Moderately Susceptible
- **Stem Rust:** Moderately Susceptible
- **Stripe Rust:** Susceptible
- **Soil Borne Mosaic:** Mod. Resist
- **Wheat Streak Mosaic:** Mod. Sus.

### Wheat Data

- **Test Weight:** 60.2 lb/bu
- **1000 kernel weight:** 25.4 gm
- **Wheat Protein (12% mb):** 13
- **Wheat Ash (12% mb):** 1.48

### Milling and Flour Quality Data

#### Milling and Flour Quality Data Continued

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MIXOGRAPH</strong></td>
<td></td>
</tr>
<tr>
<td>Flour Abs (% as-is):</td>
<td>60.6</td>
</tr>
<tr>
<td>Flour Abs (14% mb):</td>
<td>59.4</td>
</tr>
<tr>
<td>Mix Time:</td>
<td>3.9 min</td>
</tr>
<tr>
<td>Mix Tolerance (0-6):</td>
<td>4</td>
</tr>
</tbody>
</table>

| **FARINOGRAPH**   |                                                 |
| Flour Abs (% as-is): | 56.9                                             |
| Flour Abs (14% mb):    | 55.7                                             |
| Development Time:   | 6.9 min                                          |
| Mix stability:      | 9.3 min                                          |
| Mix Tolerance Index (FU): | 33                                               |
| Breakdown Time:     | 11 min                                           |

| **ALVEOGRAPH**     |                                                 |
| P(mm) Tenacity:   | 73                                               |
| L(mm) Extensibility: | 91                                               |
| G(mm) Swelling Index: | 21.2                                              |
| W(10^{-4} J) strenght (curve area): | 228                                              |
| P/L curve configuration ratio: | 0.8                                              |
| le(P_{200}/P) eslasticity index: | 57.3                                             |

| **EXTENSIGRAPH**  |                                                 |
| Resist (BU at 45/90/135 min): | 313/387/389                                      |
| Extensibility (mm at 45/90/125 min): | 147/154/144                                     |
| Energy (cm² at 45/90/135): | 83/112/98                                        |
| Resist _max_ (BU at 45/90/135 min): | 425/556/515                                      |
| Ratio (at 45/90/135 min): | 2.14/2.51/2.71                                   |

| **PROTEIN ANALYSIS** |                                                 |
| HMW-GS Composition: | 2*,1,7+9, 5+10                                      |
| %IPP:               | 48.62                                            |

| **SEDIMENTATION TEST** |
| Volume: | 39.5 ml |

### Available from 6 certified seed growers in NE.
**Variety Overview**
Husker Genetics Freeman Brand is a semi-dwarf wheat moderately early in maturity and approximate mature plant height of 34 inches. It has moderate straw strength and good winter hardiness. It is resistant to Soilborne Wheat Mosaic Virus. It was developed cooperatively by the Nebraska Agricultural Experiment Station and the USDA-ARS. It can only be sold as a class of certified seed.

Available from 11 certified seed growers in NE.

**Origin:** Husker Genetics
**PVP Status:** P-94

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**Milling and Flour Quality Data**

**Continued**

**Mixograph**
- Flour Abs (% as-is): 64.5
- Flour Abs (14% m): 60.6
- Mix Time: 3.5 min
- Mix Tolerance (0-6): 3

**Farinograph**
- Flour Abs (% as-is): 61.6
- Flour Abs (14% mb): 58.2
- Peak time: 5.5 min
- Mix stability: 14.8 min
- Mix Tolerance Index (FU): 28
- Breakdown Time: 10.6 min

**Alveograph**
- P(mm) Tenacity: 75
- L(mm) Extensibility: 106
- G(mm) Swelling Index: 22.9
- W(10^4 J) strength (curve area): 236
- P/L curve configuration ratio: 0.71
- le(P<sub>200</sub>/P) elasticity index: 51.3

**Extensigraph**
- Resist (BU at 45/90/135 min): 278/348/369
- Extensibility (mm at 45/90/125 min): 159/176/166
- Energy (cm² at 45/90/135): 82/119/122
- Resist<sub>max</sub> (BU at 45/90/135 min): 382/511/566
- Ratio (at 45/90/135 min): 1.75/1.98/2.23

**Protein Analysis**
- HMW-GS Composition: 2*, 7+9, 5+10
- %IPP: 42.73

**Sedimentation Test**
- Volume: 50.1 ml

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**Agronomic Characteristics**

**Maturity:** Medium Early
**Winter Hardiness:** Good
**Straw Strength:** Good
**Plant Height:** Short
**Coleoptile Length:** Short
**Bushel Weight:** Good
**Protein Content:** Good

*Actual results may vary with season, location, and production conditions.*

**Reaction**
- Hessian Fly: Susceptible
- Leaf Rust: Moderately Susceptible
- Stem Rust: Moderately Resistant
- Stripe Rust: Moderately Susceptible
- Soil Borne Mosaic: Resistant
- Wheat Streak Mosaic: Susceptible

**Wheat Data**
- Test Weight: 58.8 lb/bu
- 1000 kernel weight: 28 gm
- Wheat Protein (12% mb): 12.2
- Wheat Ash (12% mb) 1.32

**Milling and Flour Quality Data Continued**

**Mixograph**
- Flour Abs (% as-is): 64.5
- Flour Abs (14% m): 60.6
- Mix Time: 3.5 min
- Mix Tolerance (0-6): 3

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- Flour Abs (% as-is): 61.6
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**Protein Analysis**
- HMW-GS Composition: 2*, 7+9, 5+10
- %IPP: 42.73

**Sedimentation Test**
- Volume: 50.1 ml
Nebraska Crop Improvement Association

The Nebraska Crop Improvement Association, is a recognized authority for seed production, performance, and quality analysis. Operating as an independent, unbiased non-profit organization, the NCIA enhances the value of seed and crops through professional, personalized services that meet seed producer, marketer, and industry needs. NCIA programs contribute to agricultural diversity, productivity, and sustainability. NCIA is dedicated to enhancing the economic viability and well-being of the people of Nebraska and the world through value-added products and processes.

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www.necrop.org
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Wheat Quality Council

The Wheat Quality Council is an organization that oversees a coordinated effort by breeders, producers and processors to improve wheat and flour quality through the evaluation and testing of new wheat varieties. WQC is a membership organization. Members include millers, bakers/processors, allied companies, grain traders, seed firms, state wheat organizations, and professional organizations.

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