



**SOUTH DAKOTA  
STATE UNIVERSITY**  
College of Agriculture, Food  
and Environmental Sciences

South Dakota State University Extension  
South Dakota Agricultural Experiment Station at SDSU

# 2023 South Dakota Winter Wheat Variety Trial Results Brookings

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**Cooperator:** SDSU Farm Department, Jack Ingemansen, manger.

**Location:** 44.355633°, -96.793752°

**Soil Type:** Barnes clay loams, 2-6% slopes

**Previous crop:** oats

**Tillage:** no-till

**Row spacing:** 8"

**Seeding Rate:** 1.2 million PLS/acre

**Fertilizer:**

- Starter: 90 lbs/acre 30-10-10

- Other: 50-0-0 fall applied as UAN, 95-0-0 spring applied as liquid broadcast

**Herbicide:**

- Burndown: 36 oz/acre Tomahawk + 27 oz/acre 2,4-D

- Post: 1.7 pts/acre Wolverine

**Fungicide:** 6.5 oz Prosaro at flowering (Feekes 10.5.1)

**Date seeded:** 9/20/2022

**Date harvested:** 7/20/2023

## Notes:

- This trial location is set up with a split-plot design. All varieties are tested without (Table 1) and with (Table 2) fungicide.

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## 2023 South Dakota Winter Wheat Variety Trial Results Brookings

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Table 1. 2023 winter wheat variety performance trial results (average of 4 replications) at Brookings, SD. Entries are sorted by overall 3-year yield. Varieties yielding in the top 1/3 of the trial are bold and shaded light blue.

Variety	Height (inches)	Lodging* (-5)	Test Wt (lbs)	Protein %	2021 (bu/a)#	2022 (bu/a)	2023 (bu/a)	2-year (bu/a)	3-year (bu/a)
LCS Steel AX	26	1.5	59.2	12.5	<b>92.5</b>	64.6	<b>82.7</b>	<b>73.6</b>	<b>79.9</b>
SD Midland	27	1.0	58.2	13.2	<b>91.6</b>	<b>72.0</b>	<b>75.3</b>	<b>73.7</b>	<b>79.6</b>
WB4309	26	1.5	56.8	13.4	88.8	<b>72.4</b>	<b>75.0</b>	<b>73.7</b>	<b>78.7</b>
AP Clair	25	1.0	57.1	13.5	<b>90.5</b>	<b>72.6</b>	71.0	<b>71.8</b>	<b>78.0</b>
Winner	28	2.8	56.8	13.3	<b>90.2</b>	69.2	72.0	70.6	<b>77.1</b>
SY Wolverine	25	1.3	57.0	13.4	87.1	<b>74.0</b>	68.8	<b>71.4</b>	<b>76.6</b>
CP7909	25	3.3	58.4	12.8	86.5	<b>69.6</b>	<b>73.1</b>	<b>71.3</b>	76.4
SD Andes	27	1.0	59.8	13.4	<b>89.5</b>	63.3	<b>75.7</b>	69.5	76.2
LCS Helix AX	28	1.8	58.5	12.8	88.5	<b>70.8</b>	69.1	69.9	76.1
CP7017AX	28	1.8	56.7	13.1	<b>89.1</b>	<b>73.8</b>	64.6	69.2	75.9
Redfield	27	2.5	58.6	13.6	87.0	63.2	72.9	68.0	74.3
AP Bigfoot	25	1.5	58.2	13.3	87.8	65.8	67.6	66.7	73.7
Draper	28	2.3	56.8	13.7	85.1	69.5	66.1	67.8	73.5
Ideal	28	1.8	57.6	13.2	88.2	62.8	69.4	66.1	73.5
AP 18AX	27	2.0	57.3	13.2	83.6	67.9	68.2	68.1	73.3
Crescent AX	26	3.0	58.6	12.6	76.3	68.6	69.8	69.2	71.6
LCS Chrome	27	1.3	58.2	14.2	86.3	61.9	64.7	63.3	71.0
CP7869	27	2.8	56.6	13.6	83.6	63.1	65.0	64.1	70.6
Expedition	26	2.5	58.1	13.8	77.5	60.9	64.9	62.9	67.8
WB4422	28	1.0	58.3	13.8	-	<b>72.4</b>	<b>75.7</b>	<b>74.1</b>	-
Byrd CL Plus	22	2.5	58.9	12.7	-	65.5	<b>78.1</b>	<b>71.8</b>	-
MS Maverick	28	3.0	58.8	13.1	-	62.7	<b>74.3</b>	68.5	-
CP7266AX	27	2.5	58.7	12.9	-	67.5	67.9	67.7	-
WB4510CLP	28	1.0	59.3	13.6	-	59.6	<b>73.0</b>	66.3	-
Kivari AX	26	3.8	58.2	12.1	-	60.6	67.7	64.2	-
CP7220	25	1.5	60.2	13.7	-	-	<b>78.5</b>	-	-
LCS Runner	27	2.0	58.6	12.5	-	-	71.2	-	-
MS Sundown	27	3.0	58.2	12.9	-	-	69.1	-	-
SY Wolf	26	1.3	58.5	13.7	-	-	68.6	-	-
<b>Trial Average</b>	27	1.9	58.3	13.3	86.1	67.1	72.0	68.9	74.9
<b>LSD (0.05)\$</b>	-	-	1.3	0.4	8.3	3.2	7.0	-	-
<b>C.V. %‡</b>	-	-	-	-	6.9	3.4	7.0	-	-

\* Lodging score: 1, perfectly standing; to 5, completely flat.

# Trial averages may include values from experimental lines that are not reported.

† Value required (≥LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 15% or less is considered acceptable.



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Table 2. 2023 winter wheat variety performance trial results (average of 4 replications) at Brookings, SD. Entries are sorted by overall 3-year yield. Varieties yielding in the top 1/3 of the trial are bold and shaded light blue.

Variety	Height (inches)	Lodging* (1-5)	Test Wt (lbs)	Protein %	2021 (bu/a)#	2022 (bu/a)	2023 (bu/a)	2-year (bu/a)	3-year (bu/a)
Winner	not reported	1.0	58.3	12.8	<b>93.8</b>	<b>70.6</b>	<b>86.5</b>	<b>78.5</b>	<b>83.6</b>
AP Clair		2.5	57.9	13.5	<b>97.8</b>	<b>72.0</b>	76.0	<b>74.0</b>	<b>81.9</b>
SD Andes		1.3	60.1	12.6	<b>94.3</b>	67.3	<b>83.3</b>	<b>75.3</b>	<b>81.6</b>
LCS Steel AX	-	1.0	58.8	13.2	<b>92.9</b>	66.9	<b>82.0</b>	<b>74.4</b>	<b>80.6</b>
WB4309	-	1.5	57.5	12.9	88.1	<b>70.1</b>	<b>82.0</b>	<b>76.1</b>	<b>80.1</b>
SY Wolverine	-	1.0	58.4	13.0	89.3	<b>71.2</b>	75.0	<b>73.1</b>	<b>78.5</b>
SD Midland	-	1.5	57.7	13.1	<b>93.0</b>	67.4	74.4	70.9	78.3
Redfield	-	1.0	58.3	13.2	91.8	63.6	76.7	70.2	77.4
CP7869	-	1.5	58.0	13.2	<b>94.1</b>	63.9	73.7	68.8	77.2
CP7017AX	-	2.5	57.3	12.7	88.8	68.0	74.5	71.3	77.1
Draper	-	1.0	57.6	13.2	88.8	<b>68.4</b>	73.4	70.9	76.9
CP7909	-	1.0	59.6	13.1	82.4	<b>68.9</b>	<b>79.1</b>	<b>74.0</b>	76.8
Ideal	-	1.8	57.9	12.9	92.3	62.1	71.5	66.8	75.3
AP 18AX	-	1.8	57.6	13.9	83.7	66.4	72.9	69.7	74.3
AP Bigfoot	-	2.3	57.5	13.4	90.5	66.5	64.3	65.4	73.8
LCS Helix AX	-	1.8	58.7	13.1	82.4	<b>69.7</b>	68.1	68.9	73.4
Crescent AX	-	1.0	58.4	13.0	77.5	67.1	71.3	69.2	72.0
LCS Chrome	-	2.0	58.2	12.8	79.3	62.5	71.3	66.9	71.0
Expedition	-	1.5	58.4	13.0	79.3	60.1	66.8	63.5	68.7
WB4422	-	1.0	60.1	13.8	-	<b>74.5</b>	<b>81.6</b>	<b>78.1</b>	-
CP7266AX	-	1.3	59.2	13.7	-	63.1	<b>78.8</b>	70.9	-
Kivari AX	-	1.5	58.2	12.6	-	61.7	<b>79.8</b>	70.7	-
Byrd CL Plus	-	1.5	57.7	13.2	-	66.6	73.1	69.9	-
MS Maverick	-	1.3	58.9	13.2	-	63.8	74.8	69.3	-
WB4510CLP	-	1.5	60.2	12.7	-	59.4	<b>79.0</b>	69.2	-
LCS Runner	-	1.5	59.0	12.9	-	-	<b>78.1</b>	-	-
SY Wolf	-	1.8	58.5	12.7	-	-	77.6	-	-
CP7220	-	1.0	59.5	13.3	-	-	75.9	-	-
MS Sundown	-	1.5	57.9	12.5	-	-	67.3	-	-
<b>Trial Average</b>	-	1.5	58.6	13.1	88.7	66.4	77.0	71.0	76.8
<b>LSD (0.05)§</b>	-	-	1.1	0.7	8.1	3.3	9.2	-	-
<b>C.V. %‡</b>	-	-	-	-	6.5	3.1	8.5	-	-

\* Lodging score: 1, perfectly standing; to 5, completely flat.

# Trial averages may include values from experimental lines that are not reported.

† Value required (≥LSD) to determine if varieties are significantly different from one another.

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