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

2024 South Dakota Rye Variety Trial Results

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Cooperator: South Dakota State University Southeast Research Farm
Location: Beresford (43° 02' 37.1" N, 96° 53' 47.9" W)
Soil Type: Egan Silty Clay Loam
Previous crop: soybean
Tillage: no-till
Row spacing: 8”
Seeding Rate:
- Hybrid Lines 800,000 seeds/ac
- Open Pollinated lines; 1,200,000 seeds/ac
Fertilizer:
- Fall 30 lbs/a N+P
- Spring 80-0-0 N/ac
Herbicide:
- None
Fungicide:
- Propi-Star - Aerial Application
Date seeded: 10/2/2023
Date harvested: 7/22/2024

Cooperator: South Dakota State University Southeast Research Farm
Location: Arlington (44° 23' 14.9" N, 97° 01' 40.0 W)
Soil Type: Poinsett Waubay Silty Clay Loam
Previous crop: soybean
Tillage: no-till
Row spacing: 8”
Seeding Rate:
- Hybrid Lines 800,000 seeds/ac
- Open Pollinated lines; 1,200,000 seeds/ac
Fertilizer:
- Fall 30 lbs/a N+P
- Spring 80-0-0 N/ac
Herbicide:
- None
Fungicide:
- None
Date seeded: 10/11/2023
Date harvested: 8/26/2024

Cooperator: South Dakota State University Southeast Research Farm
Location: Clear Lake (44° 43' 09.91" N, 96° 49' 58.3 W)
Soil Type: Kranzberg - Brookings Silty Clay Loam
Previous crop: soybean
Tillage: no-till
Row spacing: 8”
Seeding Rate:
- Hybrid Lines 800,000 seeds/ac
- Open Pollinated lines; 1,200,000 seeds/ac
Fertilizer:
- Fall 30 lbs/a N+P
- Spring 80-0-0 N/ac
Herbicide:
- None
Fungicide:
- None
Date seeded: 9/21/2023
Date harvested: 8/9/2024

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Table 1. Rye grain variety trial data pooled across sites of Beresford, Clear Lake, and Arlington, South Dakota in the 2024 growing season. Data on test weight and 100-seed weight are not included from Arlington (100-seed weight has not been processed yet, and combine test wt. measurements were not considered reliable in this case). Also data on 'Andes' wheat yield at Clear Lake was excluded from this analysis due to wildlife damage at that site. Note there were significant site by line interactions for yield, test weight, lodging, and height. Only one replication was measured for height at Arlington. The statistically significant highest yeilds are bolded and shaded blue.

Line	Height (inches)	Lodging (1-10)	100-SeedWt (g)	Moisture (%)	Test Wt (lb/bu)	Grain Yield (bu/ac)
H9011	48.7	**2.0**	**2.84**	15.9	52.7	**117**
H20003	48.6	**1.8**	2.79	16.0	53.5	**116**
Receptor	49.7	3.5	2.57	16.5	54.4	**116**
H9008	49.8	2.5	2.77	15.8	53.8	**112**
H20005	48.4	**1.8**	2.66	15.9	53.1	111
SU Karlsson	48.9	2.8	2.57	16.0	54.2	107
SU Cossani	49.8	**2.1**	2.52	16.7	52.7	104
SU Perspectiv	48.7	2.4	2.67	15.8	53.5	104
Tayo	48.3	2.4	**2.93**	16.3	53.7	103
Serafino	48.8	2.6	2.56	16.7	53.0	103
SU Performer	49.4	2.8	2.37	15.7	51.9	102
SU Bebop	48.9	3.6	2.58	16.2	53.1	94
Danko	50.5	2.8	2.66	15.8	54.5	84
Aroostook	52.3	5.3	**2.95**	15.9	53.8	81
Hazlet	**54.3**	4.2	**2.92**	15.9	54.4	81
Andes	38.0	**2.1**	2.60	15.5	57.6	66
ND Gardner	**53.4**	5.8	2.55	15.8	52.2	58
Mean	49.5	3.0	2.68	16.0	53.5	98.2
CV (%)	3.4	24.6	4.8	8.9	2.1	7.2
Line P-Value	<0.01	<0.01	<0.01	NS	<0.01	<0.01
Site * Live P-Value	<0.01	<0.01	NS	NS	<0.01	<0.01
LSD (0.10)	1.2	0.5	0.11	-	1.0	5.0

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2024 South Dakota Rye Variety Trial Results Beresford

Table 2. Rye variety trial data on height, lodging (0 to 10 score), 100-seed weight, moisture, test weight, and grain yield at Beresford, South Dakota in the 2024 growing season. The statistically significant highest yeilds are bolded and shaded blue.

Line	Height (inches)	Lodging (1-10)	100-SeedWt (g)	Moisture (%)	Test Wt (lb/bu)	Grain Yield (bu/ac)
Receptor	49.8	2.0	2.51	14.6	56.7	**130**
H20003	48.3	**1.5**	2.66	13.7	55.5	**129**
H9011	49.5	**1.5**	2.65	13.5	54.9	**128**
H9008	49.5	**1.8**	2.64	14.4	55.8	**125**
Tayo	49.7	**1.3**	**2.86**	13.4	56.7	**125**
H20005	48.8	**1.3**	2.48	13.4	54.7	**124**
SU Karlsson	48.8	2.8	2.37	14.3	56.4	120
Serafino	**51.8**	**1.8**	2.44	13.5	55.5	117
SU Perspectiv	49.3	2.0	2.57	13.7	55.6	117
SU Cossani	**50.5**	2.0	2.27	13.6	55.0	113
SU Performer	49.8	2.0	2.25	13.4	54.2	112
SU Bebop	49.3	2.8	2.44	13.6	55.2	102
Danko	49.8	2.5	2.55	13.7	56.2	95
Hazlet	**52.5**	3.8	**2.88**	13.5	56.3	91
Aroostook	49.8	4.5	**2.80**	12.9	55.6	85
ND Gardner	**52.0**	3.5	2.46	12.7	55.6	84
Andes	39.3	**1.0**	2.60	**15.2**	**57.6**	71
Mean	49.3	2.2	2.55	13.7	55.7	110
CV (%)	3.5	27.4	4.60	5.6	1.0	4.5
LSD (0.10)	2.3	0.8	0.16	1.1	0.8	6.7

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2024 South Dakota Rye Variety Trial Results Clear Lake

Table 3. Rye variety trial data on height, lodging (0 to 10 score), 100-seed weight, moisture, test weight, and grain yield at Clear Lake, South Dakota in the 2024 growing season. Note that the 'Andes' variety of wheat was damaged by wildlife at this site - so data from that line is not shown in this table. The statistically significant highest yeilds are bolded and shaded blue.

Line	Height (inches)	Lodging (1-10)	100-SeedWt (g)	Moisture (%)	Test Wt (lb/bu)	Grain Yield (bu/ac)
H9011	49.0	**2.0**	**3.04**	16.7	50.5	**116**
H20003	49.5	**2.0**	**2.92**	16.6	**51.6**	**114**
H20005	49.3	**2.0**	2.83	16.3	**51.5**	**107**
H9008	51.0	**2.4**	2.90	15.8	**51.9**	105
Receptor	50.5	3.5	2.63	16.2	**52.1**	105
SU Karlsson	49.3	2.8	2.78	16.7	**52.1**	104
SU Cossani	50.3	**2.5**	2.78	17.2	50.5	102
Tayo	48.8	**2.5**	**2.99**	16.4	**51.4**	101
SU Performer	50.0	3.0	2.49	16.5	49.6	101
SU Perspectiv	49.5	**2.3**	2.78	16.5	**51.3**	99
Serafino	47.8	2.8	2.73	17.7	50.4	98
SU Bebop	49.3	3.0	2.71	16.7	**51.1**	93
Aroostook	**54.5**	3.8	**3.11**	16.9	**51.9**	78
Hazlet	**55.8**	3.0	**2.95**	16.4	**52.6**	78
Danko	52.0	3.3	2.77	16.2	**52.7**	74
ND Gardner	**54.5**	5.8	2.65	15.2	48.8	35
Mean	49.8	3.2	2.80	16.4	50.9	89.8
CV (%)	3.3	19.6	4.9	8.8	3.3	9.8
LSD (0.10)	2.0	0.7	0.19	NS	2.0	10.5

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2024 South Dakota Rye Variety Trial Results Arlington

Table 4. Rye variety trial data on height (one replication only), lodging (0 to 10 score), moisture, and grain yield at Arlington, South Dakota in the 2024 growing season. Data on 100-seed weight has not yet been measured. Data on test weight is not shown as the combine test wt. was not considered reliable and insufficient sample was retained to measure it later. The statistically significant highest yeilds are bolded and shaded blue.

Line	Height (inches)	Lodging (1-10)	Moisture (%)	Grain Yield (bu/ac)
Receptor	46.7	5.0	18.7	**112**
H9011	44.5	**2.5**	17.5	**107**
H20003	46.7	**2.0**	17.5	**105**
H9008	46.5	3.3	17.0	**104**
H20005	44.0	**2.3**	18.1	101
SU Cossani	45.3	**1.8**	19.2	98
SU Perspectiv	43.5	**3.0**	17.1	96
SU Karlsson	48.5	**3.0**	17.1	95
SU Performer	45.5	3.5	17.1	94
Serafino	41.2	3.3	18.9	93
Tayo	42.2	**3.0**	18.2	90
SU Bebop	46.0	5.0	18.4	87
Danko	47.5	**2.8**	17.6	83
Aroostook	53.3	7.5	18.0	81
Hazlet	55.5	5.8	17.7	74
Andes	32.8	3.3	15.8	61
ND Gardner	54.7	8.0	19.3	56
Mean	46.1	3.8	17.8	90.4
CV (%)	-	25.7	10.1	7.9
LSD (0.10)	-	1.2	NS	8.5