

Wheat, Hard Red Winter Jim Anderson, Jochum Wiersma, Gary Linkert, Catherine Springer and Susan Reynolds



Winter wheat varieties were compared in trial plots at Crookston, Lamberton, Roseau and St. Paul. A trial also was planted at Waseca, but there was too much winterkill at that location to provide meaningful yield data.

Wheat varieties are grown in replicated plots at each location. These plots are handled so that the factors affecting yield and other characteristics are as nearly the same for all varieties at each location as is possible. These winter wheat trials are not designed for crop (species) comparisons, because the various crops

are grown on different fields or with different management. The data should be used only to compare varieties within a table.

Variety Selection Criteria

The success of a winter wheat variety depends largely on its ability to survive Minnesota winters. Research on the Canadian plains has shown that planting winter wheat in standing canola stubble using no-till methods can decrease winterkill considerably. Trapped snow provides additional protection that increases the odds that the young seedlings will survive.

Table 1. Growth characteristics of winter wheat varieties.

Variety	Origin ¹	PVP Status ²	Heading, Days from Jan. 1 ³	Height, Inches ³	Winter- hardiness ⁴	Lodging Rating	Test Weight, Lb/Bu		Protein % at 12% Moisture		Rust Resistance ⁵	
							2008	2-Year	2008	2-Year	Leaf	Stem
Alice ⁶	2006 SDSU	PVP (94)	163	28	M	M Strg	59.7	59.1	11.6	12.3	S	—
Arapahoe	1988 NE	PVP (94)	164	34	M	M Strg	59.4	59.4	11.7	12.6	MR	MR
CDC Buteo	2001 CAN	PVP (94)	167	34	MH	Strong	62.3	61.9	11.1	11.9	MS	—
CDC Falcon	1998 CAN	PVP (94)	166	30	MH	Strong	59.7	59.2	11.2	12.1	MS	R
Darrell	2006 SDSU	PVP (94)	165	33	M	M Strg	59.4	59.0	11.8	12.5	MS	—
Hawken	2008 AgriPro	PVP (94)	163	28	P	Strong	59.9	—	12.5	—	R	—
Jerry	2001 NDSU	none	167	37	H	M Strg	59.9	60.0	11.9	12.6	MR	R
Millennium	1999 NE	PVP (94)	165	35	M	Strong	60.2	60.3	11.7	12.7	MR	R
Overland	2007 NE	PVP (94)	164	32	M	Strong	60.0	59.9	12.1	12.9	MR	—
Ransom	1998 NDSU	PVP (94)	167	38	MH	Med.	59.2	59.3	11.5	12.3	MR	MR
Roughrider	1975 NDSU	none	167	41	VH	Med.	60.1	60.3	11.6	12.3	S	R
Wendy ⁶	2004 SDSU	PVP (94)	162	32	M	M Strg	60.2	59.9	12.0	12.7	S	—
Mean			164.9	33.4			60.0	59.8	11.7	12.4		

¹ Abbreviations: CAN = Crop Development Centre, Saskatoon, Canada; NDSU = North Dakota State University; NE = Nebraska Agricultural Experiment Station; SDSU = South Dakota Agricultural Experiment Station.

² PVP = plant variety protection. When the letters are followed by (94), seed of that variety may not be sold by a grower to anyone without express permission of the variety's developer/owner.

³ 2008 St. Paul data

⁴ Winterhardiness rating is a relative ranking that includes data from Minnesota, Nebraska, North Dakota and South Dakota: VH = very high, H = high, MH = moderately high, M = moderate, P = poor.

⁵ R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible.

⁶ White wheat.

While all winter wheat varieties should be considered susceptible to very susceptible to Fusarium Head Blight (FHB), they head earlier than spring wheat varieties and have a better chance of escaping damage from FHB. Most winter wheat varieties are also susceptible to very susceptible to the leaf diseases other than the rusts. Use of fungicides to control these diseases and/or suppress FHB may be warranted.

All varieties listed are standard hard red winter wheats with the exception of Alice and Wendy, which have white grain. Hawken, a 2008 AgriPro release, was added to the trial in 2008.

Test Plot Research

Test plot establishment and management were supervised by Jim Cameron, Derek Crompton, Matt Bickell, Steve Quiring and Donn Vellekson.

**Hard Red Winter Wheat
Planting Rate and Date**

Bushel Weight (Pounds).....60
 Seeds/Pound.....14,500
 Pounds Rate/Acre.....75+
 Seeds/Square Foot..... 25
 Planting Date.....Aug. 20 – Sept. 20

Table 2. Yield (percent of the mean) of winter wheat varieties.

Variety	Crookston		Lamberton			Roseau			St Paul			State		
	2008	2-Year ¹	2008	2-Year	3-Year	2008	2-Year	3-Year	2008	2-Year	3-Year	2008	2-Year	3-Year
Alice	78	—	51	—	—	104	96	—	112	93	—	87	—	—
Arapahoe	104	104	108	112	107	102	106	102	92	101	100	101	106	103
CDC Buteo	135	119	101	99	105	106	104	102	94	96	90	109	100	103
CDC Falcon	114	109	126	114	103	103	96	100	106	109	109	112	106	105
Darrell	77	84	109	107	100	105	87	93	102	101	102	98	98	96
Hawken	82	—	84	—	—	112	—	—	114	—	—	98	—	—
Jerry	127	108	124	116	117	105	127	118	91	102	103	112	115	112
Millennium	104	96	116	114	109	111	103	104	96	95	90	107	104	100
Overland	97	—	111	117	—	101	103	—	106	87	—	103	—	—
Ransom	123	111	101	110	105	85	95	96	101	103	102	102	102	103
Roughrider	98	98	101	97	92	77	84	85	75	88	88	88	90	90
Wendy	106	95	84	84	79	101	100	101	99	108	107	98	97	96
Mean (Bu/A)	67.8	88.6	53.7	60.8	60.4	98.1	75.3	91.9	72.6	82.5	87.4	72.7	73.0	81.3
LSD	39.0	20.8	17.3	19.0	22.0	16.0	30.4	16.2	14.7	31.4	12.3	20.6	14.0	9.1

¹ Crookston 2-year data are 2006 and 2008. The 2007 Crookston location was abandoned due to winterkill.