

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



Winter wheat varieties were compared in trial plots at Lamberton, Roseau and St. Paul. Trials also were planted at Crookston and Morris. The Crookston location was

abandoned due to extreme winterkill. Plots at the Morris location were extremely variable due to winterkill and other plot damage unrelated to variety; therefore, data from this location were discarded.

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. Varieties are listed in order of heading.

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.

While all winter wheat varieties should be considered susceptible to very susceptible to FHB, they head earlier than spring wheat varieties and have a better chance of escaping damage by FHB.

Most winter wheat varieties are also susceptible to very susceptible to the leaf diseases other than the

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	
							2007	2-year	2007	2-year	Leaf	Stem
Alice ⁶	2006 SDSU	PVP (94)	145	26	—	—	58.4	—	12.9	—	—	—
Wendy ⁶	2004 SDSU	PVP (94)	145	34	M	M Strong	59.6	60.7	13.4	13.2	MS	—
Arapahoe	1988 NE	PVP (94)	149	37	M	M Strong	59.5	59.7	13.5	13.3	MR	MR
Infinity CL	2005 NE	PVP (94)	150	35	M	Strong	60.1	60.9	12.8	12.7	MR	—
Darrell	2006 SDSU	PVP (94)	150	33	M	M Strong	58.6	59.6	13.2	13.2	MS	—
Millennium	1999 NE	PVP (94)	150	34	M	Strong	60.4	60.7	13.6	13.2	MR	R
CDC Falcon	1998 CAN	PVP (94)	151	30	MH	Strong	58.7	60.0	13.0	12.8	MS	R
Overland	2007 NE	PVP (94)	151	30	—	—	59.8	—	13.7	—	—	—
CDC Buteo	2001 CAN	PVP (pending)	152	36	MH	Strong	61.5	62.2	12.7	12.9	MS	—
Jerry	2001 NDSU	none	152	38	MH	M Strong	60.2	60.9	13.2	13.5	MR	R
Ransom	1998 NDSU	PVP (94)	152	37	MH	Medium	59.3	60.3	13.1	12.9	MR	MR
Roughrider	1975 NDSU	none	152	40	VH	Medium	60.5	61.4	12.9	13.1	S	R
Seward	1987 NDSU	none	154	41	MH	Medium	59.8	59.9	11.9	12.0	S	MR
Mean			150	35			59.7	60.6	13.1	13.0		

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. If the PVP designation is followed by (pending) consider that the variety has PVP (94) protection.

³ 2007 St. Paul data.

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

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

⁶ White wheat.

rusts. Use of fungicides to control these diseases and/or suppress FHB may be warranted.

Alice, a 2007 release from South Dakota State University, and Overland, a 2007 release from the University of Nebraska marketed as “Husker Genetics Brand Overland” were added to the trial in 2007; their data are summarized in the accompanying tables.

All varieties listed are standard hard red winter wheats with the exception of Alice and Wendy, which have white grain, and Infinity CL, which may be used as a component of the BASF Clearfield® Production System with Beyond® herbicide.

Test Plot Research

Test plot establishment and management were supervised by John Wiersma, George Nelson, Steve Quiring and Tom Hoverstad.

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		
	2-Year ¹	2007	2-Year	3-Year	2007	2-Year	3-Year	2007	2-Year	2007	2-Year	3-Year
Alice	–	–	–	–	87	–	–	73	–	80	–	–
Wendy	95	85	77	63	98	101	100	116	111	100	96	81
Arapahoe	119	116	107	119	110	102	104	110	103	112	104	111
Infinity CL	108	116	111	123	100	97	101	98	92	105	100	112
Darrell	99	106	96	88	68	87	94	100	102	91	95	91
Millennium	106	112	106	114	94	101	104	95	87	100	98	109
CDC Falcon	108	102	91	94	88	99	102	112	111	101	100	98
Overland	–	124	–	–	105	–	–	68	–	99	–	–
CDC Buteo	99	97	107	95	102	100	98	99	88	99	99	96
Jerry	107	108	113	119	148	124	117	113	109	123	116	118
Ransom	102	118	107	111	105	102	99	105	103	109	104	105
Roughrider	91	94	87	82	92	89	85	101	94	96	90	83
Seward	103	96	97	93	95	96	96	111	100	101	98	95
Mean (Bu/A)	81.9	68.7	62.7	51.5	54.1	83.7	79.4	92.6	95.0	72.2	83.2	75.0
LSD	24.9	19.5	24.2	22.8	37.7	22.8	15.1	15.4	10.2	23.2	10.8	9.8

¹ Crookston 2-year data is 2005-2006. The 2007 Crookston location was abandoned due to winterkill.