

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



Winter wheat varieties were compared in trial plots at Lamberton and St. Paul; plots at Crookston and Roseau were not harvested due to adverse growing conditions. Wheat varieties were grown in replicated plots at each location. They were handled so that 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. 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

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	
							2009	2-Year	2009	2-Year	Leaf	Stem
Alice ⁶	2006 SDSU	PVP (94)	152	26	M	M Strg	60.9	60.3	13.4	12.5	S	—
Arapahoe	1988 NE	PVP (94)	153	33	M	M Strg	60.4	59.9	13.3	12.5	MR	MR
Art	2008 AgriPro	PVP (94)	151	28	—	—	60.8	30.4	14.2	—	—	—
Boomer	2009 WPB	PVP (pending)	157	31	—	—	59.7	—	12.9	—	—	—
CDC Accipiter	2008 CAN	PVP (pending)	159	33	—	—	60.7	—	12.0	—	—	—
CDC Buteo	2001 CAN	PVP (94)	158	37	MH	Strong	63.4	62.8	12.8	12.0	MS	—
CDC Falcon	1998 CAN	PVP (94)	157	29	MH	Strong	59.0	59.3	13.0	12.1	MS	R
CDC Peregrine	2008 CAN	PVP (pending)	158	40	—	—	62.5	—	11.6	—	—	—
Darrell	2006 SDSU	PVP (94)	154	33	M	M Strg	60.8	60.1	13.2	12.5	MS	—
Hawken	2007 AgriPro	PVP (94)	152	26	P	Strong	60.1	60.0	13.8	13.1	R	—
Jerry	2001 NDSU	none	157	36	H	M Strg	60.6	60.2	13.6	12.8	MR	R
Lyman	2008 SDSU	PVP (94)	153	33	—	—	62.2	61.1	13.8	13.1	—	—
Millennium	1999 NE	PVP (94)	155	33	M	Strong	61.5	60.9	13.8	12.7	MR	R
Overland	2007 NE	PVP (94)	154	32	M	Strong	60.9	60.4	13.8	12.9	MR	—
Ransom	1998 NDSU	PVP (94)	156	36	MH	Med.	60.6	59.9	12.7	12.1	MR	MR
Roughrider	1975 NDSU	none	157	42	VH	Med.	62.2	61.1	13.4	12.5	S	R
Striker	2009 WPB	PVP (pending)	154	29	—	—	60.6	—	13.5	—	—	—
Wendy ⁶	2004 SDSU	PVP (94)	151	28	M	M Strg	61.2	60.7	13.7	12.8	S	—
Mean			154.9	32.3			61.0	58.4	13.2	12.6		

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

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 2009 data

⁴ Winterhardness 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, P = poor. New varieties are not rated because only one site showed differential winter survival in 2009.

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

⁶ White wheat

damage to FHB. Most winter wheat varieties also are 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. Several varieties were added to the trial in 2009. These include Art from AgriPro, CDC Accipiter and CDC

Peregrine from Canada, Boomer and Striker from Westbred, and Lyman from SDSU, which was grown under experimental designation in 2008; results are reported here for the first time.

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 ¹		Lamberton			Roseau ¹		St Paul			State		
	2008	2-Year	2009	2-Year	3-Year	2008	2-Year	2009	2-Year	3-Year	2009	2-Year	3-Year
Alice	78	—	100	76	—	104	96	77	95	87	89	88	85
Arapahoe	104	104	102	105	109	102	106	105	101	102	103	102	105
Art	—	—	105	—	—	—	—	77	—	—	91	—	—
Boomer	—	—	101	—	—	—	—	107	—	—	104	—	—
CDC Accipiter	—	—	95	—	—	—	—	114	—	—	104	—	—
CDC Buteo	135	119	93	97	97	106	104	108	101	100	101	105	103
CDC Falcon	114	109	96	111	108	103	96	98	102	105	97	105	103
CDC Peregrine	—	—	112	—	—	—	—	116	—	—	114	—	—
Darrell	77	84	102	105	106	105	87	105	104	102	103	101	97
Hawken	82	—	105	95	—	112	—	73	93	—	89	93	—
Jerry	127	108	100	112	111	105	127	109	100	104	105	108	113
Lyman	81	—	95	101	—	96	—	115	111	—	105	101	—
Millennium	104	96	98	107	109	111	103	95	95	95	97	102	101
Overland	97	—	99	108	—	101	103	95	101	—	97	100	—
Ransom	123	111	103	102	107	85	95	106	103	104	105	103	105
Roughrider	98	98	83	92	93	77	84	96	86	91	90	89	91
Striker	—	—	102	—	—	—	—	103	—	—	102	—	—
Wendy	106	95	98	91	89	101	100	108	104	108	103	100	100
Mean (Bu/A)	67.8	88.6	63.8	60.8	61.8	98.1	75.3	71.4	72.0	78.9	67.6	73.0	81.3
LSD	39.0	20.8	15.6	29.3	19.6	16.0	30.4	15.2	28.8	18.6	22.7	14.7	11.3

¹ The 2009 Crookston and Roseau locations were abandoned due to winterkill. Two-year data are 2007 and 2008.