

WINTER WHEAT

Winter wheat varieties are compared in trial plots at Morris, Rosemount, and Roseau. 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 only be used to compare varieties within a table.

Variety Selection Criteria

Varities are listed in order of heading. The varieties tested differ in their winterhardness and this characteristic should receive attention when choosing varieties. Cultural practices have a major effect on winter survival of all winter wheat varieties. Planting into a firm seedbed with at least some stubble remaining to retain snow cover can reduce winterkill.

Varities

Culver – Awned, early maturity, medium height. Moderate winterhardness. Moderately strong straw. Resistant to stem rust. Medium test weight and protein. Released by Neb. AES and USDA-ARS in 1998. **PVP (94)**

Ransom – Awned, medium-late maturity, medium height. Moderately high winterhardness. Medium straw strength. Moderately resistant to stem rust and to leaf rust. Medium-low test weight and protein. Released by N.D. AES in 1998. **PVP (pending)**

Crimson – Awned, red-chaffed, medium maturity, medium height. Moderate winterhardness. Moderately strong straw. Moderately resistant to stem rust and susceptible to leaf rust. Moderate resistance to Septoria tritici blotch. High test weight and protein. Released by S.D. AES in 1997. **PVP (94)**

Harding – Awned, medium maturity, medium height. Moderate winterhardness. Medium straw strength. Moderately resistant to stem rust. Medium test

weight and high protein. Released by S.D. AES in 1997. **PVP (pending)**

Tandem – Awned, early maturity, medium height. Moderate winterhardness. Medium straw strength. Moderately resistant to stem rust and susceptible to leaf rust. High test weight and protein. Released by S.D. AES in 1997. **PVP (94)**

Windstar – Awned, early-medium maturity, semidwarf. Moderate winterhardness. Strong straw. Moderately resistant to stem rust to leaf rust. Medium test weight and protein. Released by Neb. AES and USDA-ARS in 1996. **PVP (94)**

Elkhorn – Awned, medium-late maturity, tall. High winterhardness. Medium straw strength. Resistant to stem rust and moderately susceptible to leaf rust. Medium test weight and protein. Released by the N.D. AES in 1995. **PVP**

Arapahoe – Awned, early maturity, medium height. Moderate winterhardness. Moderately strong straw. Resistant to stem rust and moderately resistant to leaf rust. Medium test weight and protein. Released by Neb. AES and USDA-ARS in 1988. **PVP**

Seward – Awned, medium-late maturity, tall. Moderately high winterhardness. Medium straw strength. Moderately resistant to stem rust and susceptible to leaf rust. Medium test weight and low protein. Released by N.D. AES in 1987.

Roughrider – Awned, medium-late maturity, tall. Very high winterhardness. Medium straw strength. Resistant to stem rust and susceptible to leaf rust. Medium test weight and high protein. Released by N.D. AES in 1975.

Varities Not Adequately Tested.

Wahoo – Awned, early, semidwarf. Moderate winterhardness. Medium-low test weight and protein. Released by Neb. AES in 2001. **PVP (pending)**

Millennium – Awned, early-medium maturity, medium height. Moderate winterhardness. Strong straw. High test weight and medium protein. Released by Neb. AES and USDA-ARS in 1999. **PVP (pending)**

Nuplains – Awned, medium maturity, short-semidwarf. Moderate winterhardness. Strong straw. High test weight and low-medium protein. White grain color. Released by USDA-ARS and the Nebraska, South Dakota, and Wyoming Agricultural Experiment Stations in 1999. **PVP (pending)**

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

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

Variety	Morris		Roseau		St. Paul		State	
	2000	2001	2001	3-year	2001	3-year	2001	3-year
Wahoo	–	106	–	–	114	–	110	–
Culver	99	112	103	–	118	121	115	110
Arapahoe	107	101	109	–	113	108	106	108
Tandem	102	110	109	–	79	96	96	102
Windstar	111	105	105	–	128	123	116	114
Millenium	112	120	–	–	105	–	113	–
Crimson	93	107	102	–	97	97	103	99
Harding	112	97	102	–	98	102	97	104
Nuplains	104	96	–	–	114	–	104	–
Roughrider	94	91	94	–	72	80	82	88
Elkhorn	90	83	92	–	86	89	84	91
Ransom	107	99	102	–	94	110	97	106
Seward	94	94	104	–	96	102	95	101
LSD	16	18	18	–	21	14	20	11
Mean, Bu/Acre	59.4	81.9	58.7	–	65	59.8	73.5	59.2

Growth characteristics of winter wheat varieties.

Variety	Heading, Days From Jan 1	Height, Inches	Winter- Hardiness ¹	Lodging Rating	Test Weight, Pounds/Bushel		Protein % ²		Rust Resistance ³	
					2001	3-year	2001	3-year	Leaf	Stem
Wahoo	156	39	M	–	59.0	–	11.6	–	–	–
Culver	156	40	M	M. Strong	59.4	59.0	13.0	13.1	–	R
Arapahoe	156	41	M	M. Strong	59.9	59.3	12.4	13.1	MR	R
Tandem	156	42	M	Medium	60.9	60.5	13.9	13.6	S	MR
Windstar	157	39	M	Strong	59.8	59.1	13.1	12.9	MR-MS	MR
Millenium	157	41	M	Strong	61.1	–	12.8	–	–	–
Crimson	158	43	M	M. Strong	61.8	61.1	13.3	13.3	S	MR
Harding	158	43	M	Medium	60.7	59.6	13.0	13.6	–	MR
Nuplains ⁴	158	38	M	Strong	61.3	–	11.7	–	–	–
Roughrider	159	46	VH	Medium	60.0	59.8	13.1	13.2	S	R
Elkhorn	160	47	H	Medium	60.4	59.9	12.3	13.2	MS	R
Ransom	160	43	MH	Medium	59.2	59.2	11.2	12.9	MR	MR
Seward	160	45	MH	Medium	60.2	59.6	11.3	12.1	S	MR
Mean	158	43			60.3	59.7	12.6	13.1		
LSD	2				2.1	1.1	1.7	0.6		

¹ Winterhardiness rating is a relative ranking that includes data from North Dakota, Nebraska and South Dakota: VH=very high, H=high, MH=moderately high, M=moderate. ² 12% moisture basis. ³ R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible. ⁴ White seeded.