



2005 Winter Wheat Variety Yield Results

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It was a good year for winter wheat production across most of South Dakota. Timely precipitation in the fall of 2004 with continued moist and cool conditions into June favored crop growth. The statewide average yield in the Crop Performance Testing Program was 51 bu/A in 2005. The best performing varieties in East River in 2005 were Millennium, Jerry, Arapahoe, and Wahoo; while Hatcher, Millennium, Jagalene, and Overley did the best in West River.

The tables give the characteristics and performance of winter wheat varieties tested in South Dakota. Use them to select a variety with the agronomic characteristics suitable for your area and production system. When looking at yield performance, look for varieties that have performed well at locations near your farm over the past 3 years.

Many diseases were present in 2005, including wheat streak mosaic virus, barley yellow dwarf, leaf rust, stripe rust, tan spot, and scab. The warm conditions into late Fall 2004 allowed wheat curl mites and bird cherry oat aphids to flourish. This led to infection with wheat streak mosaic virus and barley yellow dwarf. Most years, delaying planting until after September 10 can significantly reduce the occurrence of aphid feeding. If planting earlier than September 10, the use of a seed treatment insecticide should be considered.

Stripe rust was another disease problem in 2004, favored by the cool conditions in June. This disease can spread very rapidly and is favored by temperatures of 50 to 62 F, while daytime temperatures above 80 F inhibit rust growth. There is some evidence that stripe rust is adapting to warmer environments which would make outbreaks more common. Recommended varieties with some resistance are Alliance, Arapahoe, Jagalene, Millennium, Wesley and Wendy (Table 4).

The other major outbreak this year was Fusarium head blight, also known as scab. There was widespread infection from southeast to south-central South Dakota, with some fields having 20% infected heads. The infection caused yield reductions and scabby grain in many areas. Winter wheat varieties currently do not have the resistance to scab as do some spring wheat varieties. Normally winter wheat is considered a low-risk crop because it usually flowers before the warm, moist conditions that are ideal for infection. The SDSU pathology project has a website to help you predict the risk of scab during the growing season. This website can be accessed at <http://plantsci.sdstate.edu/smallgrainspath>. If the risk of scab infection is high and the wheat crop is about to flower, spraying with fungicide should be considered. Recommended varieties with some resistance are Expedition, Arapahoe, and Alliance.

Table 1. Hard red winter wheat yield results- South Dakota West River locations, 2003- 2005.

Variety (Hdg.)*	Location Yield Averages (BU/A) at 13% moisture							
	Wall		Hayes		Sturgis		Kennebec	
	2005	3-Yr	2005	3-Yr	2005	3-Yr	2005	3-Yr
Wendy~W (-1)	45	44	53	.	29	32	58	.
Expedition (0)	42	43	67	.	29	32	60	.
Overley (0)	40	.	79	.	29	.	68	.
Hatcher (2)	48	.	59	.	36	.	63	.
Wesley (2)	43	45	62	.	27	31	61	.
Nekota (2)	46	44	43	.	30	33	45	.
Alliance (2)	52	47	57	.	28	34	57	.
Wahoo (3)	54	50	60	.	29	34	58	.
Jagalene (3)	47	45	61	.	28	34	64	.
Trego~W (3)	50	41	57	.	31	35	55	.
Arapahoe (3)	45	41	61	.	29	31	52	.
Millennium (4)	56	48	65	.	33	36	65	.
Tandem (4)	43	45	67	.	29	32	61	.
Harry (5)	41	.	54	.	29	.	50	.
Crimson (5)	46	46	54	.	26	30	56	.
Harding (5)	46	47	56	.	25	30	52	.
Jerry (6)	54	50	56	.	24	30	58	.
Test avg.:	48	46	58	.	29	33	57	.
High avg.:	64	50	79	.	36	36	70	.

* Heading, the relative difference in days to heading, compared to the variety Expedition.

Table 2. Hard red winter wheat yield results- West River locations (continued).

<i>Variety (Hdg.)*</i>	<i>Location Yield Averages (BU/A) at 13% moisture</i>							
	Martin		Oelrichs		Tripp Co.		West River	
	<i>2005</i>	<i>3-Yr</i>	<i>2005</i>	<i>3-Yr</i>	<i>2005</i>	<i>3-Yr</i>	<i>2005</i>	<i>3-Yr</i>
Wendy~W (-1)	58	.	47	.	51	50	49	42
Expedition (0)	66	.	50	.	43	43	51	39
Overley (0)	67	.	41	.	43	.	52	.
Hatcher (2)	72	.	62	.	50	.	56	.
Wesley (2)	68	.	41	.	43	42	49	39
Nekota (2)	43	.	46	.	45	47	43	41
Alliance (2)	60	.	50	.	48	47	50	43
Wahoo (3)	64	.	50	.	49	50	52	45
Jagalene (3)	72	.	48	.	52	53	53	44
Trego~W (3)	59	.	50	.	52	51	51	42
Arapahoe (3)	57	.	46	.	48	47	48	40
Millennium (4)	65	.	48	.	49	51	54	45
Tandem (4)	59	.	47	.	48	47	51	41
Harry (5)	58	.	58	.	46	.	48	.
Crimson (5)	53	.	51	.	48	44	48	40
Harding (5)	55	.	49	.	52	48	48	42
Jerry (6)	60	.	55	.	46	44	50	41
Test avg.:	60	.	50	.	50	48		
High avg.:	72	.	62	.	60	53		

* Heading, the relative difference in days to heading, compared to the variety Expedition.

Table 3. Hard red winter wheat yield results- South Dakota East River locations, 2003- 2005.

Variety (Hdg.)*	Location Yield Averages (BU/A) 13% moisture								Yield Averages (BU/A)			
	Brookings		Highmore		Platte		Pierre		East River		State	
	2005	3-Yr	2005	3-Yr	2005	3-Yr	2005	3-Yr	2005	3-Yr	2005	3-Yr
Wendy~W (-1)	38	71	68	62	26	49	77	52	52	59	50	51
Expedition (0)	35	68	66	60	32	51	64	49	49	57	50	49
Overley (0)	32	.	60	.	30	.	67	.	47	.	51	.
Hatcher (2)	27	.	72	.	34	.	68	.	50	.	54	.
Wesley (2)	35	71	62	63	39	55	64	49	50	60	50	51
Nekota (2)	26	64	58	60	38	53	59	48	45	56	44	50
Alliance (2)	32	62	68	64	39	53	64	51	51	58	50	51
Wahoo (3)	43	76	72	69	41	56	64	51	55	63	53	55
Jagalene (3)	20	64	62	64	42	54	74	55	50	59	52	53
Trego~W (3)	20	59	63	61	32	51	66	50	45	55	49	50
Arapahoe (3)	47	70	71	67	36	51	66	50	55	60	51	51
Millennium (4)	54	82	71	67	47	59	68	51	60	65	56	56
Tandem (4)	36	65	64	63	40	51	55	48	49	57	50	50
Harry (5)	32	.	65	.	28	.	64	.	47	.	48	.
Crimson (5)	33	66	66	60	41	51	62	52	51	57	49	50
Harding (5)	43	75	66	65	37	55	62	49	52	61	49	53
Jerry (6)	53	82	66	67	40	53	64	49	56	63	52	54
Test avg.:	37	71	65	64	37	54	64	51				
High avg.:	54	82	73	70	49	63	77	55				

* Heading, the relative difference in days to heading, compared to the variety Expedition.

Table 4. Origin, variety traits, and disease reactions for winter wheat entriestested for 2005.

Variety	(Hdg.)*	Origin	Ldg Res	Traits#			Disease Reaction +						PVP*
				End- Use Qty	Wntr Hardy Rtg	Cole- optile Pct##	Wht Strk Msc	Tan Spot	Str	Rust \$ Lf	Stm		
Wendy~W	(-1)	SD-04	E	GN	E	67	MS	R	MR	MS	MR	***	
Expedition	(0)	SD-02	F	EB	G-E	88	S	MS	MS	MS	R	Yes	
Overley	(0)	KS-03	G	GB	F-G	.	MT	MR	MR	R	R	Yes	
Alliance	(2)	NE-93	G	AB	G	76	MS	VS	MR	S	MS	Yes	
Nekota	(2)	NE/SD-94	G	GB	G	87	MS	MR	S	S	MR	No	
Wesley	(2)	NE-98	E	AB	G-E	79	S	MR	MR	MS	R	No	
Hatcher	(2)	CO-04	F	EB	.	.	S	.	MR	MR	MR	.	
Arapahoe	(3)	NE-88	F	GB	G-E	83	S	S	MS	MR	MR	Yes	
Trego~W	(3)	KS-99	F-G	EB	F-G	80	S	MS	S	MR	R	Yes	
Wahoo	(3)	NE/WY-01	G	.	G	91	S	S	MR	S	R	Yes	
Jagalene	(3)	AW-02	E	.	G	92	MS	MR	MR	MR	MR	Yes	
Millennium	(4)	NE-99	G	AB	F-G	78	S	MS	MR	MS	MR	Yes	
Tandem	(4)	SD-97	F-G	EB	G	112	S	S	MR	S	MR	Yes	
Crimson	(5)	SD-97	G	GB	G-E	110	MR	R	MR	S	MS	Yes	
Harding	(5)	SD-99	F-G	AB	E	100	MR	MR	MS	MR	MR	Yes	
Harry	(5)	NE-03	F	AB	.	.	S	S	.	MR	MR	.	
Jerry	(6)	ND-01	F	GB	E	92	MS	S	MR	S	R	No	

* Heading, the relative difference in days to heading, compared to Expedition.

~ W Hard white wheat variety.

E= exc., A= accept., F= fair, G= good, P= poor, B= baking, N=noodles.

Percent of Harding (3-1/4" long).

+ R= resistant, MR= moderately resist., MS= mod. susceptible, S= susc., VS= very susc..

\$ Rusts: Stripe (str), leaf (lf), and stem (stm).

** Plant variety protection (PVP), title V, certification option - to be sold by variety name only as a class of certified seed.

*** PVP application pending or anticipated.