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Russ Hard Red Winter Wheat

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RUSS

Hard Red Spring Wheat

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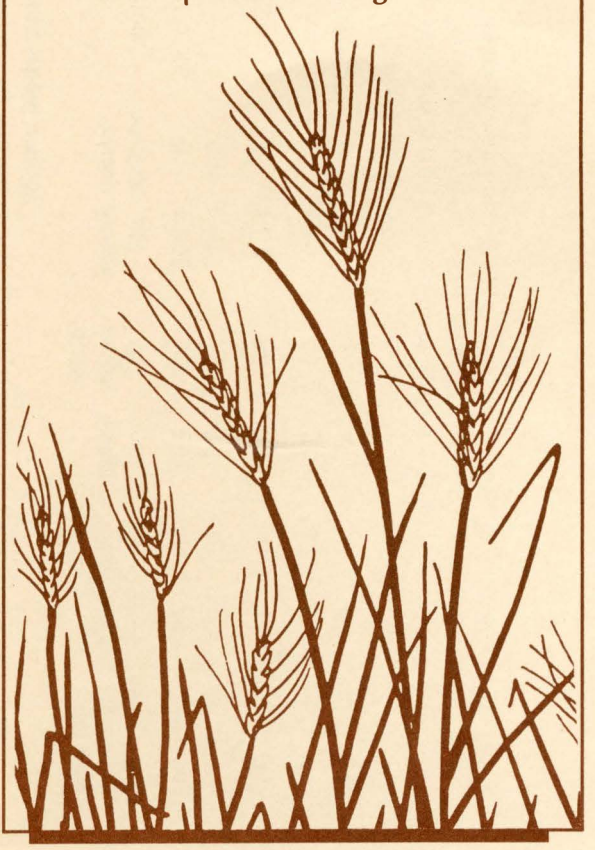

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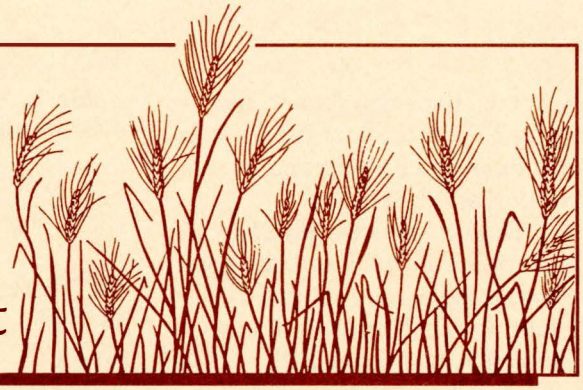

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Russ hard red spring wheat was released in the spring of 1995 by the South Dakota Agricultural Experiment Station. This new variety is early maturing, grows to a standard height, and has an excellent yield potential. Application for Plant Variety Protection has been made, and Russ will be sold only as a class of certified seed.

The variety is named in honor of Russel Hanson, a Spink County farmer who was a prominent supporter of SDSU research and a cooperator for the spring wheat breeding project until his death in 1993. After the James Valley Agricultural Research and Extension Center was relocated to Dakota Lakes, Hanson determined to continue research in the central Spink County area and donated land for the spring wheat breeding yield trials.

Russ was selected from a cross made in 1984 between two South Dakota experimental spring wheat lines, SD 8052 and SD 2971. Named varieties in the parentage include Shield, Butte, Len, and Waldron. Early generation selections were made in Brookings, South Dakota, and initial yield trials were conducted at several sites in northeast South Dakota. A winter nursery at Weslaco, Texas, was used to decrease the number of years needed to develop the new variety. Russ was first tested in state and regional performance trials in 1991, and large-scale quality testing began in 1993.

Before a new variety is released, it must be superior to existing varieties in one or more traits. Russ exceeds this requirement, particularly for yield. It has been one of the top-yielding varieties at 71% of the testing locations in South Dakota from 1993 to 1995 (Table 2), indicating good yield stability. In 1991-1993 regional yield trials, Russ averaged 4 bu/A more than Butte 86 (Table 5).

Russ is similar in height to Butte 86 and Sharp and 2 to 3 inches taller than 2375 and

Table 1. Origin, disease resistance, and other traits for hard red spring wheat entries.

Variety	Origin -yr	Stand-ability	Disease resistance: Leaf rust	Disease resistance: Stem rust	Disease resistance: Head scab tolerance	1994 Baking rating
BUTTE 86	ND-86	FAIR	MR#	R	FAIR	F-P**
SHARP	SD-90	GOOD	R	R	FAIR	G-F
RUSS*	**SD-95**	**GOOD**	**R**	**R**	**FAIR**	**VG-G**
2375*	PIO-88	GOOD	MS	MR	FAIR	G-F
PROSPECT	SD-88	GOOD	MR	MR	POOR	F-P

* Plant Variety Protection - sold by variety name only as a class of certified seed.
\# S = Susceptible, MS = Moderately susceptible, MR = Moderately resistant, R = Resistant.
** P = Poor, F = Fair, G= Good, VG = Very good.

Table 2. Agronomic performance averages (1993-95) for hard red spring wheat entries.

Variety	Relative heading	Protein pct	Bushel weight lb	Height inch	Yield, bu/A '95	Yield, bu/A 93-95	Top yield percentage '95	Top yield percentage 93-95
BUTTE 86	0*	13.9#	59#	33#	40	41	33**	71**
SHARP	0	14.1	59	33	38	40	17	57
RUSS	**2**	**14.1**	**58**	**33**	**40**	**41**	**33**	**71**
2375	2	13.9	59	30	37	41	0	57
PROSPECT	4	13.7	57	31	38	41	17	71

* Relative scale 0 to 7.
\# Averages were obtained from 1993-95 data.
** Percentage of time a variety appeared in the top-yield group across seven (7) valid test sites for 1993-95 and six (6) sites for 1995.

Prospect. Russ has similar maturity to 2375; it is about 2 days later than Butte 86 or Sharp and 2 days earlier than Prospect.

Russ is less susceptible to shattering than 2375 and has good straw strength for a standard-height wheat. Threshability is between Butte 86 and 2375.

Russ has good resistance to the current races of leaf and stem rust and is similar to Butte 86 for scab resistance. It is heterogeneous for Hessian fly resistance and should offer good protection under light to moderate infestations.

Another prominent feature of Russ is its bread-making quality. Russ is a strong mixing wheat with medium protein content. The Hard Spring Wheat Technical Committee, made up of university and industry consultants, considers Russ to be similar to Grandin, the current industry check, in baking properties.

Table 3. Hard red spring wheat one- and three-year average yields at four locations in eastern South Dakota.

Variety	Brookings		Watertown		Selby		Groton	
	'95	3-yr	'95	3-yr	'95	3-yr	'95	3-yr
	Bu/A							
BUTTE 86	57	45	47	33	37	43	47	48
SHARP	53	47	45	34	34	40	51	49
RUSS	**52**	**45**	**49**	**36**	**38**	**46**	**62**	**50**
2375	53	49	46	36	36	44	50	49
PROSPECT	53	45	47	32	38	45	48	49
Test avg:	54	44	45	32	39	44	50	47

Table 4. Hard red spring wheat one- and three-year average yields at three locations in western South Dakota.

Variety	Wall		Bison		Ralph	
	'95	3-yr	'95	3-yr	'95	3-yr
	Bu/A					
BUTTE 86	38	45	26	38	28	35
SHARP	33	42	27	38	28	32
RUSS	**31**	**43**	**25**	**38**	**30**	**34**
2375	25	39	25	37	25	33
PROSPECT	36	42	20	36	25	37
Test avg:	33	41	25	36	26	34

Table 5. Yield trial data from regional hard red spring wheat trials, 1991-1993: South Dakota, North Dakota, Minnesota.

Variety	1991 (11)*	1992 (10)	1993 (10)	1991-93 (31)
	Bu/A			
STOA	35	55	36	42
BUTTE 86	37	52	38	42
RUSS	**39**	**58**	**42**	**46**

* Number of locations where data were collected.

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