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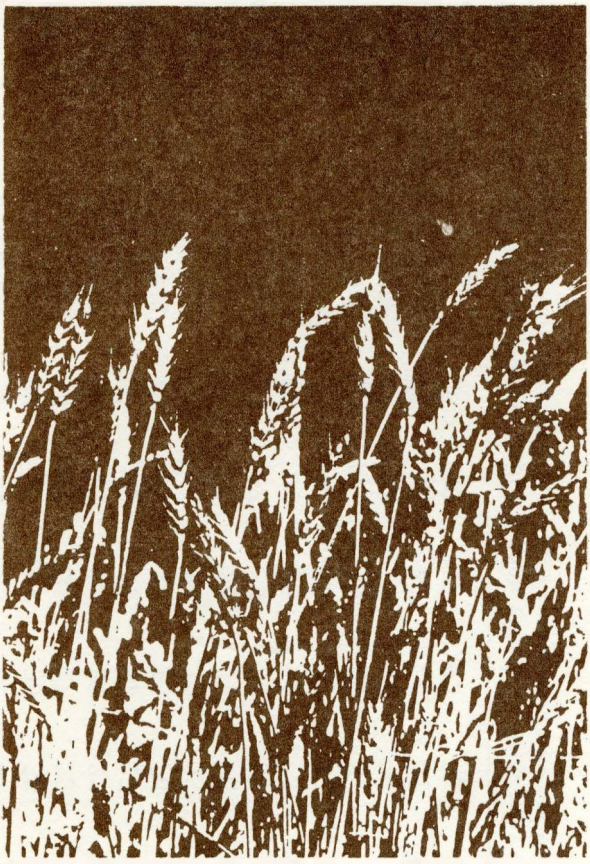

Agricultural Experiment Station
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B 705

A New Spring Wheat: Prospect

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The excellent yield stability rating of Prospect, a new medium-early semidwarf spring wheat, will appeal to many South Dakota growers.

Prospect exhibits both high yield stability and good test weight per bushel. These characteristics give producers a spring wheat with a wide range of adaptation, a good yield potential, and a good test weight for the wheat market.

Prospect was developed by the South Dakota Agricultural Experiment Station and released in March 1988.

Origin

Prospect is a fourth generation head selection derived from the three-way 'Butte'/ Co534727//'WS1809' cross. (Co534727 is a winter wheat line from Colorado.) The first to fourth generations were grown in alternate years in South Dakota and Mexico. The final head selections were bulked at harvest and designated SD 2956. Prospect was tested in South Dakota trials from 1982 to the present and in the Uniform Regional Spring Wheat Nursery from 1984 through 1986.

Agronomic characteristics

Prospect is medium early in maturity and heads out about 2-3 days later than Butte 86 (Table 1). Prospect averages about 3 inches shorter than Butte 86, which gives it good straw strength. (Height differences among varieties in Table 1 are less than expected due to reduced growth during the 1988 drought.) Prospect spikes are awned and erect. Test weight is slightly less than Butte 86 but higher than many other popular varieties.

This variety has good milling and bread making characteristics. Its grain protein content is medium low, being greater than Marshall and Guard but less than Amidon, Stoa, and Butte 86. Prospect has good resistance to the prevalent races of leaf rust and stem rust.

Yield results

Prospect has exhibited outstanding yields both statewide (Tables 1 and 2) and regionally (Table 3). The average 3-year yields

Table 1. Variety characteristics of Prospect compared to other varieties in the primary spring wheat growing areas of South Dakota, 1986-88.

	Butte 86	Guard	**Prospect**	Amidon	Stoa	Marshall
Plant height (in.)	29	26	**27**	33	32	25
Days Planting to heading	59	61	**62**	64	64	65
Test wt. lbs/BU	59.1	57.4	**58.5**	57.8	57.5	56.7
Protein %	16.0	15.6	**15.7**	16.3	16.2	15.5
Straw strength	fair	good	**good**	fair	fair	good
Rust reaction leaf	MR	R	**R**	R	R	MR
Rust reaction stem	R	R	**R**	R	R	R
PVP	no	yes	**no**	no	no	yes

Table 2. Average three-year yield comparisons (bushels/acre) of Prospect with other varieties at several locations in South Dakota (CPT trials, 1986-88)

	Butte 86	Guard	**Prospect**	Amidon	Stoa	Marshall	Loc. Avg. **
Brookings	39	38	**35**	33	41	39	35
Watertown	34	35	**37**	35	36	35	33
Beresford	29	32	**31**	27	33	29	29
Highmore	33	30	**29**	30	31	26	28
Aurora Co.	29	29	**29**	27	27	27	25
Redfield	28	25	**28**	25	28	24	23
Selby	34	33	**34**	30	33	30	30
Groton	36	32	**33**	32	38	34	32
Martin	33	33	**36**	32	33	29	30
Wall	29	26	**25**	24	24	24	23
Bison	33	33	**36**	32	33	29	24
Ralph	25	22	**26**	28	27	23	23
Bear Butte	27	26	**25**	27	26	22	26
Statewide Yield	31	30	**30**	29	31	29	
Yield Stability %	*100	69	**77**	62	69	38	

*Indicates the percentage of test sites where a variety is in the top yielding group.
Average of **all varieties in trial. Only the six top entries are listed in tables.

Table 3. Average yields (bushels/acre) of Prospect compared to other varieties in regional trials, 1986-88.

	Butte 86	Guard	**Prospect**	Stoa	Marshall	No. Locations
Minnesota	38	38	**39**	41	38	20
North Dakota	39	--	**40**	42	40	18
South Dakota	36	33	**36**	36	32	18

in Table 2 indicate Prospect has an excellent yield stability rating, second only to Butte 86, and a high yield potential.

Its 77% yield stability percentage indicates that in 77% of trials in South Dakota Prospect has been in the top yielding group. This high yield stability gives Prospect the capacity to perform very well under a wide range of environments.

Regional data (not shown) from yield trials at 12 sites in South Dakota, North Dakota, and Minnesota also indicate Prospect's excellent yield potential. In 1985 at these sites Prospect averaged 63 bu/acre, compared to 59 for Butte 86.

Prospect has a number of very good traits--yield potential, yield stability, and good test weight and standability. This variety is second only to Butte 86 in yield performance, but is easier threshing, has superior straw strength, and has demonstrated a greater yield potential in high yielding environments.

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