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Blizzard Hard Red Winter Wheat

Edward J. Souza, Kenneth D. Kephart and Donald W. Sunderman

Blizzard is a new hard red winter wheat developed and released for production in Idaho. Blizzard has improved tolerance to snow mold, caused by a complex of soil-borne fungi (*Typhula* species and *Fusarium nivale*), and excellent resistance to dwarf bunt (synonym TCK smut), caused by the fungus *Telletia controversa* Kuhn. Where environmental conditions often favor the development of these diseases, Blizzard wheat should maintain overwintering stands better than most other hard red winter wheat cultivars and escape dwarf bunt contamination of harvested grain.

Blizzard is derived from a cross made in 1974 between two sister lines, themselves derived from a cross between two high-yielding breeding lines. One of the high-yielding lines derived snow mold tolerance from the resistant wheat PI 476213. The line that eventually became Blizzard was selected in 1982 from plants that survived after heavy snow mold losses in trials conducted at Tetonia, Idaho.

Blizzard was tested as IDO297 in state testing programs from 1983 to 1987 and in regional Pacific Northwest testing programs from 1985 to 1987. Blizzard was cooperatively developed and released by the Idaho Agricultural Experiment Station and the USDA Agricultural Research

Service (USDA-ARS) wheat breeding program at the University of Idaho Research and Extension Center at Aberdeen.

Variety Description

Blizzard is an awned, hard red winter wheat with tannish-white to white chaff at maturity. Compared with most other hard red winter wheats grown in crop-fallow rotations, Blizzard is intermediate in height. It averages 1 to 2 inches taller than Manning and 2 to 3 inches shorter than Weston under dryland conditions (Table 1). Blizzard's straw strength and lodging potential are similar to those of both Manning and Weston. On average, Blizzard has headed 1 and 3 days later than Manning and Weston, respectively. Blizzard is moderately susceptible to stripe rust (*Puccinia striiformis* Westend) and is not recommended for areas of Idaho where stripe rust in wheat is a persistent problem.

Performance and Recommended Areas of Production

Blizzard is recommended for the dryland crop-fallow areas of southeastern Idaho counties bordering Wyoming

Table 1. Comparison of Blizzard to other winter wheat cultivars in southeastern Idaho yield trials, 1984-89.

Name	Tetonia grain yield ¹	Tetonia test weight ¹	Preston grain yield ¹	Preston test weight ¹	Rockland grain yield ²	Rockland test weight ²	Dryland height	Spring stand ³	Snowmold damage rating ⁴	Dwarf bunt resistance
	(bu/acre)	(lb/bu)	(bu/acre)	(lb/bu)	(bu/acre)	(lb/bu)	(inches)	(%)		
Blizzard	52	61	32	60	44	61	31	73	0.7	Resistant
Manning	51	60	35	60	38	61	30	70	1.0	Moderate resistance
Weston	48	62	32	62	40	62	34	70	0.9	Moderate resistance
Andrews ⁵	48	59	25	59	35	58	25	75	0.8	Susceptible
Sprague	48	59	33	58	43	59	26	73	0.4	Moderate susceptible

¹Tetonia and Preston yield data were recorded in all years. Some trials within years had less than 50 percent average spring stand and were not harvested.

²Rockland yield data were recorded for the years 1985-86, 1986-87 and 1988-89.

³Average stand for all trials at all locations, including trials with and without snow mold damage. Most trials were unaffected by snow mold.

⁴Snow mold damage rating is based on stand reductions relative to Manning. Lower numbers indicate less damage from snow mold.

⁵Andrews was grown only in 1983-84 and 1987-88. Missing years were estimated from the performance of other cultivars by the least-squares method.

and Utah. Early snow cover often persists in these areas, favoring the development of snow mold and dwarf bunt in fall-planted wheat.

Snow mold tolerance ratings summarized over nine seasons at Tetonia and Preston, Idaho, indicate Blizzard stand losses due to snow mold have been 20 to 30 percent less than those of either Manning or Weston (Table 1). In trials at Preston and Tetonia during which snow mold significantly reduced stands, Blizzard, Weston and Manning had spring stands of 51 percent, 37 percent and 34 percent, respectively (averaged for 3 trial years at Tetonia and 2 trial years at Preston). Under the same conditions, the soft white winter wheat Sprague had spring stands of 54 percent.

Although Blizzard possesses improved tolerance to snow mold causing pathogens, it is not immune. During years with prolonged snow cover and high inoculum levels, Blizzard (as well as all snow mold tolerant varieties) can incur substantial stand losses. Unlike Sprague, Blizzard does not require fall planting before September 1 for optimum protection from snow mold infection.

Blizzard's resistance to field races of dwarf bunt is superior to that of other cultivars currently grown in dryland areas of southeastern Idaho. In the 1988 USDA-ARS Logan dwarf bunt test with eight replications, Blizzard had an average dwarf bunt infection of 0 percent; Manning and Weston, respectively, had 9 percent and 16 percent infected heads. Andrews, another snow mold tolerant hard red winter wheat, had 35 percent of heads infected with dwarf bunt in the same trial.

In the absence of snow mold, dryland yields of Blizzard in southeastern Idaho have been comparable to those of Manning, Weston and Sprague winter wheats (Table 1). The test weight performance of Blizzard has been between Manning's and Weston's and consistently more than 60 pounds per bushel (Table 1). Blizzard has averaged 2 to 3 pounds per bushel heavier than either John or Sprague, two soft white wheats that also possess improved levels of snow mold tolerance. Blizzard should consistently produce U.S. No. 1 hard red winter wheat based on test weight.

Blizzard has consistently produced grain with higher protein percentages than Manning or Weston. Its milling quality is superior to that of other intermountain hard red winter wheats. Blizzard's baking quality is acceptable, intermediate between Manning's and Weston's for most characteristics.

Availability of Blizzard Seed

Foundation seed of Blizzard was released in fall 1988. Limited supplies of foundation seed are available from the University of Idaho's Foundation Seed Program. Growers interested in certified Blizzard seed can contact the Idaho Crop Improvement Association, 1641 South Curtis Road, Boise, ID 83705, (208) 377-3420.

The Authors — Edward J. Souza is plant breeder and geneticist at the University of Idaho Research and Extension Center at Aberdeen. Kenneth D. Kephart is former Extension crop management specialist in the UI Department of Plant, Soil and Entomological Sciences, and Donald W. Sunderman is UI professor emeritus of plant breeding and genetics.