no. 9700136). Small samples of Stride for research purposes can be obtained from the South Dakota Agricultural Experiment Station for at least five years by writing to the corresponding author.

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References and Notes

The assistance of N.D. Young and R.L. Denny in screening for phytophthora resistance is sincerely acknowledged.


Registration of 'Windstar' Wheat

'Windstar' (Reg. no. CV-857, PI 597379) is a hard red winter wheat (Triticum aestivum L.) cultivar developed cooperatively by the Nebraska Agricultural Experiment Station and the USDA-ARS. It was jointly released to seed producers in 1997 by the developing institutions and the South Dakota Agricultural Experiment Station.

Windstar was selected from the cross TX79A2729/'Caldwell'/ 'Brule' field sel #63/3/ 'Siouxlnd', which was made in 1984 by J.W. Schmidt. The pedigree of TX79A2729 is 'TAM 103'/ 'Newton' sb. Windstar is an F2-derived line that was selected in the F3 generation. Windstar was released primarily for its superior adaptation to dryland agriculture in western Nebraska and South Dakota.

Windstar is an awned, white-glumed cultivar. Its field appearance is more similar to 'Rawhide' and Siouxland. The canopy is moderately open and upright. The flag leaf is erect and twisted at the boot stage. The foliage is blue-green, with a waxy bloom at anthesis. The leaf is pubescent. The spike is tapering in shape, moderately long to long, and middense. Under some environmental conditions, the spike may have a clavate shape, similar to Rawhide and 'Centura'. The glume shoulder is sloping to square. The beak is moderately short to medium, with an acuminate tip. The spike is held erect to inclined at maturity and the glumes and straw have a golden color. Kernels are red colored, hard textured, and ovate. The kernel has no collar, rounded cheeks, midsize germ, midsize length, and a narrow and shallow crease.

Windstar was tested as NE9062S in Nebraska yield nurseries starting in 1991 and in the Northern Regional Performance Nursery in 1993 and 1994, and in state variety trials in Nebraska in 1994 to 1996. In western Nebraska (15 environments), Windstar (3550 kg ha−1) yielded 70 kg ha−1 less than 'Alliance', which was similar to 'Niobrara' and 'Vista', and yielded 280 kg ha−1 higher than 'Arapahoe' and 'Pronghorn'. In 5 yr of testing in advanced trials in Nebraska (24 environments), Windstar's yield (3550 kg ha−1) was similar to Alliance, 140 kg ha−1 higher Niobrara and Vista, 200 kg ha−1 higher than Pronghorn, and 270 kg ha−1 higher than Arapahoe. Windstar was grown in the Northern Regional Performance Nursery in 1993 and 1994. Of the 11 entries grown in the same years, Windstar had the highest grain yield (26 environments). The main advantage of Windstar over other available wheat cultivars is its consistent and high grain yield in lower-moisture dryland production.

Windstar is a taller semidwarf wheat, with medium to late maturity. It is 1 d later than Arapahoe and 3 d later than Alliance and Pronghorn. Windstar has a short coleoptile, similar to Alliance and shorter than Arapahoe and Pronghorn. Windstar's yield is higher than Arapahoe and 5 cm taller than Arapahoe, similar in height to Niobrara and Rawhide, and 10 cm taller than Vista. Windstar has moderately strong straw (better than Scout 66, Pronghorn, Alliance, Niobrara, and Arapahoe). The winterhardiness of Windstar is comparable to other winter wheat cultivars adapted to and commonly grown in Nebraska and South Dakota.

Windstar has exhibited moderate resistance to stem rust (caused by Puccinia graminis Pers.: Pers.) (it contains Sr6 and Sr24) and is moderately susceptible to leaf rust (caused by Puccinia recondita Roberge ex Desmaz.) (it contains Lr24 and other unknown genes) and wheat streak mosaic virus (WSMV). Windstar is susceptible to the Great Plains biotype of Hessian fly [Mayetiola destructor (Say)] and to soilborne mosaic virus (SBWMV).

Windstar has a moderately low grain volume weight, similar to Alliance, Niobrara, and Vista but less than Pronghorn and Scout 66. The milling and baking properties of Windstar were determined using 6 yr of testing by the Nebraska Wheat Quality Laboratory, with Arapahoe and Scout 66 as check cultivars. Windstar's average wheat protein content was less than Arapahoe and similar to Scout 66. The average flour extraction on the Buhler laboratory mill for Windstar was 0.7% less than Arapahoe and 2.3% less than Scout 66. The flour ash content was greater than Scout 66 and similar to Arapahoe. The average flour protein content for Windstar was 0.5% less than the check cultivars. Dough mixing properties for Windstar are stronger than for the check cultivars. Average baking absorption was similar to that of the check cultivars, and average loaf volume was greater than for the check cultivars. The scores for internal crumb grain and texture and external appearance were good or very good; these scores were superior to Arapahoe and Scout 66. The overall end-use quality characteristics for Windstar should be acceptable to the milling and baking industries.

The Nebraska Foundation Seed Division, Department of Agronomy, University of Nebraska–Lincoln, Lincoln, NE 68583 provided foundation seed to qualified certified seed producers in 1996. The USDA will not have seed for distribution. The seed classes will be Breeder, Foundation, Registered, and Certified. The Registered seed class will be a nonsalable seed class. Plant variety protection of Windstar is pending (PVP Certificate no. 9800002) under Public Law 91-577 with the certification option. Small quantities of seed for research purposes may be obtained from the corresponding author for at least 5 yr from the date of this publication.


References and Notes