REGISTRATION OF CROP CULTIVARS

holder, moderate resistance to pod and stem blight (caused by *Diaporthe phaseolorum* (Cke. & Ell.) var *sojae* Wehm.), downy mildew (caused by *Peronospora manshurica* (Naoum.) Syd. ex Gaum.) and purple stain (caused by *Cercospora kikuchii* (T. Matsu. & Tomoyasu) Chupp.), and susceptibility to soybean mosaic virus.

Seed of BSR 302 is distributed by the Committee for Agricultural Development, Iowa State Univ., Ames, IA 50011. Breeder seed will be maintained by the Iowa Agriculture and Home Economics Experiment Station.

REGISTRATION OF MARSHALL WHEAT

(Reg. No. 665)

R. Busch, D. McVey, V. Youngs, R. Heiner, and F. Elsayed

'MARSHALL', CI 17920, is a hard red spring wheat (*Triticum aestivum* L.) developed and released cooperatively by the Minnesota Agricultural Experiment Station and USDA-ARS in 1982. Marshall originated from a plant selection in the F₄ row of the cross 'Era' (CI 13986)/'Waldron' (CI 13958) and was tested in state and regional trials as MN70170 and MN70170R. MN70170 was first entered in Minnesota yield trials in 1975 and in the Uniform Regional Hard Red Spring Wheat Nursery in 1976. Segregation for resistance to leaf rust (caused by *Puccinia recondita* Rob. ex. Desm. f. sp. *tritici*) was observed among 600 head rows in the winter nursery at Ciudad Obregon, Sonora, Mexico in 1979 and approximately 200 rows exhibiting resistance were selected and bulked. This reselected population was designated MN70170R. Further seed increase was conducted in 1979 at St. Paul, Minn. and 3,500 plants were randomly sampled from the increase and grown in 1980 as plant rows in leaf rust inoculated conditions to verify uniformity for resistance. Less than 5% of the rows were moderately susceptible to leaf rust and rogued from the plant row increase. Testing of MN70170R was continued in Minnesota yield trials in 1979 and in the Uniform Regional Hard Red Spring Wheat Nursery in 1980.

Compared to Era, Marshall has averaged 1% higher in grain yield in Minnesota and has been equal in the Uniform Regional Hard Red Spring Wheat Nursery. It is similar in test weight, 2 days earlier to head, 2 cm shorter in plant height, and is more lodging resistant. Marshall's main attributes are earlier heading, lodging resistance, 0.5 percentage point increase in grain protein, and superior breadmaking quality, compared to Era.

Marshall is resistant to shattering. The spike is awned, fusiform to oblong, and mid-dense. The glumes are glabrous and white, shoulders are mid-wide and elevated, and beaks are tapering and mid-long. The kernel shape is ovate, mid-size to small, mid-long to short, with rounded cheeks, and the crease is narrow and shallow to mid-deep. The brush is mid-size to small and mid-long.

It is resistant to prevalent races of stem rust (caused by *Puccinia graminis* Pers. F. sp. *tritici* Eriks. and E. Henn.) and moderately resistant to leaf rust, powdery mildew, and purple stain. It is moderately susceptible to downy mildew (caused by *Peronospora manshurica* (Naoum.) Syd. ex Gaum.) and purple stain (caused by *Cercospora kikuchii* (T. Matsu. & Tomoyasu) Chupp.).

The cross was made to combine the good breadmaking characteristics and above average protein content of the semidwarf height, high yield and good agronomic characteristics of ID5006 (Norin 10/Starling'/2*/Cheyenne' made at the University Research and Extension Center in 1971 and which is registered as ID0158 before being named.

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Neeley is an awned white-glumed cultivar with moderately stiff straw and intermediate maturity. The height of Neeley varied from 87 to 120 cm with an average height of 107 cm and has grown under irrigation. In the nonirrigated trials it has averaged about 13 cm shorter than 'Jeff'. Neeley has been resistant to stripe rust (caused by *Puccinia striiformis* West), moderately resistant to brown rust (caused by *Erysiphe graminis* DC. f. sp. *graminis*) and susceptible to leaf rust (caused by *Puccinia recondita* Rob. ex. Desm. f. sp. *tritici*) races found in the Pacific Northwest. It is resistant to lodging when grown on dryland but is moderate to lodging when grown under irrigation. Spikes are fusiform, mid-dense and erect to inclined. At maturity, spikelets are white, mid-long, mid-wide, and mid-thick. Beaks are midsize, acuminate, and 6 to 14 mm long. The kernels are white, mid-long, mid-wide, and ovate with midsized germ, rounded cheeks, and mid-deep crease. Neeley has been resistant to striped rust (caused by *Puccinia striiformis* West), moderately resistant to brown rust (caused by *Erysiphe graminis* DC. f. sp. *graminis*), and susceptible to leaf rust (caused by *Puccinia recondita* Rob. ex. Desm. f. sp. *tritici*).

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Neeley allows producers the option of growing a hard red winter wheat under irrigation which yields competitive yields to grown soft white winter wheats. In 5 years of testing at Aberdeen, the average yields of the cultivars, 'Wanser' and Neeley, and the soft white wheats were 5616, 7055, and 6894 Kg/ha, respectively. The respective cultivars growing the same trials averaged 72.6% and 79.2 kg/ha. When grown under nonirrigation, the yield of Neeley have varied from 97 to 145% of Jeff, depending upon the location of the trials.

REGISTRATION OF NEELEY WHEAT

(Reg. No. 666)

D. W. Sunderman and Brendan O'Donnell

'NEELEY' hard red winter wheat (*Triticum aestivum* L. 17860, was selected as F₄ line from the cross of 'Jeff'/10'/Starling'/2*/Cheyenne' made at the University Research and Extension Center in 1971 and which is registered as ID0158 before being named.

The cross was made to combine the good breadmaking characteristics and above average protein content of the semidwarf height, high yield and good agronomic characteristics of ID5006 (Norin 10/Starling'/2*/Cheyenne' made at the University Research and Extension Center in 1971 and which is registered as ID0158 before being named.

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