Registration of ‘Tar Heel’ Tall Fescue

‘Tar Heel’ tall fescue (Festuca arundinacea Schreb.) (Reg. no. CV-63, PI 595679) was released in October 1996 by Pure Seed Testing, Inc., Hubbard, OR. Germplasm obtained from the New Jersey Agricultural Experiment Station (NJAES) was used in the development of Tar Heel. The first certified seed was produced in 1996.

Tar Heel is an advanced-generation synthetic cultivar selected from progeny of five clones. The parental clones were selected from a tall fescue breeding program initiated by Pure Seed Testing, Inc., at Rolesville, NC, to improve tolerance to brown patch disease (caused by Rhizoctonia solani Kühn). In October 1991, 15,000 tall fescue plants were transplanted into a ‘Sunrye’ perennial ryegrass (Lolium perenne L.) turf to create a spaced-plant screening nursery. This nursery was mowed at a 5-cm height, received 19.5 g N m⁻² per growing season, and was irrigated to prevent drought stress. During the summer of 1992, high levels of brown patch disease developed.

In August 1992, 108 tall fescue plants that showed little or no visible symptoms of brown patch disease were selected from the screening nursery. These plants were transplanted into a spaced-plant nursery at Rolesville in October 1992. Five phenotypically similar plants were selected from this nursery during the spring of 1993 and transplanted into an isolated crossing block prior to anthesis. Selection was for dark green color, low growth profile, freedom from disease, high number of reproductive tillers, and medium maturity. Seed was harvested from the four clones exhibiting the best fertility and designated PST-R5DNB.

Three of the harvested clones were from the tall fescue breeding program at the NJAES. Two of these clones, AB-17 and MW-198, trace their maternal origins to plants selected from old turfs in Atlanta, GA. The third clone, ESD-64, traces its maternal origin to a plant selected from an old turf in Mississippi. The other two parental clones of PST-R5DNB were from tall fescue breeding projects conducted by Pure Seed Testing. One of these clones traces its maternal origin to a population (PST-5DE) selected for low-growing, endophyte-containing, early-maturing plants. The fifth clone, used only as a pollen parent, traced its maternal origin to a population (PST-SRM) selected for medium-maturing, low-growing, dark-green plants from ‘Coronado’. Three of the four maternal clones harvested to produce PST-R5DNB were infected with the fungal endophyte Neotyphodium coenophialum (Morgan-Jones & Gams) Glenn, Bacon & Hanlin (syn. Acernum coenophialum). Seed harvested from the four maternal clones of PST-R5DNB was used to establish an isolated spaced-plant nursery of 360 plants at Rolesville. Thirty plants were removed from the nursery, prior to anthesis, to improve population uniformity of plant type and maturity. Seed from the remaining 330 plants was harvested in June 1994 and given the experimental designation PST-R5DR.

During the fall of 1994, an isolated spaced-plant nursery of 3750 plants was planted near Hubbard, OR. This nursery was comprised of progeny from seed harvested from the PST-R5DR nursery in North Carolina, plants dug in the fall of 1994 from PST-R5DNB progeny turf trials established in 1993 at Rolesville, and seed from the original PST-R5DNB synthetic. During the spring of 1995, prior to anthesis, plants were removed from the population to increase uniformity of plant type and maturity. The best 782 plants were allowed to interpollinate in isolation to produce breeder seed of Tar Heel, which was harvested during the summer of 1995. These plants were selected for seed yield potential, tolerance to stem rust (caused by Puccinia graminis Pers.:Pers.), and overall attractiveness.

Tar Heel is a low-growing cultivar with good summer turf performance. It has excellent heat tolerance and has exhibited a high level of tolerance to brown patch disease. Tar Heel is susceptible to gray leaf spot [caused by Pyricularia grisea ( Cooke) Sacc.].

Tar Heel was developed for turf uses, including lawns, sports fields, and golf course roughs. It should perform well as a monocovard, in blends with other turf-type tall fescues, or in mixtures containing up to 5% Kentucky bluegrass (Poa pratensis L.). Tar Heel should perform well in regions where tall fescue is well-adapted, and should be particularly well-suited for areas within these regions that have hot, humid summers.

Seed increase of Tar Heel is limited to three generations from breeder seed: one each of foundation, registered, and certified. Breeder seed of Tar Heel is maintained by Pure Seed Testing, Inc., in Oregon. Tar Heel is a stable and uniform variety. U.S. plant variety protection (PVP Certificate no. 9600364) is pending.

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References and Notes

1. M.L. Fraser, Pure Seed Testing, Inc., P.O. Box 176, Rolesville, NC 27571; C.A. Rose-Fricker, Pure Seed Testing, Inc., P.O. Box 449, Hubbard, OR 97032; W.A. Meyer and C.R. Funk, Plant Science Dep., New Jersey Agric. Exp. Sm., Cook College, Rutgers Univ., P.O. Box 231, New Brunswick, NJ 08903. Registration by CSSA. Accepted 31 July 1997. *Corresponding author (mfraser@aol.com).

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Registration of ‘Rimrock’ Indian Ricegrass

‘Rimrock’ Indian ricegrass [Achnatherum hymenoides (Roem. & Schult.) Barkw.; syn. Oryzopsis hymenoides (Roem. & Schult.) Ricker, Stipa hymenoides Roem. & Schult.] (Reg. no. CV-192, PI 478833) was released on 29 Jan. 1997. Participating in the release are the USDA-NRCS, Montana Agricultural Experiment Station, Wyoming Agricultural Experiment Station, and the USDA-ARS. Rimrock was tested under the designations M-33, P-15597, T-05424, 9005424, and PI 478833.

Rimrock was collected as seed on 29 June 1960 by Leo K. Pipal from a site 1100 m in elevation (Township IN, Range 26E, Section 28), approximately 1 km north of Billings, MT. The site overlooks the city and the Yellowstone River Valley. Soil at the collection site is a Worland fine sandy loam (coarse-loamy, mixed, calcareous, mesic Typic Torriorthents) with 2 to 7% slope. Parent material is sandstone. This site is classified by USDA-NRCS as Major Land Resource Area 035A (Northern Rolling High Plains, Northern Pan) (1). Estimated average annual precipitation is 250 to 350 mm. The stand was noted as being sparse, but the number of plants sampled was not recorded. No intentional genetic selection has been practiced on the original collection.

Rimrock has been tested at Coffee Point, Curlew National Grassland, Mountain Home, and Orchard, ID; Bridger, Cardwell, Kalispell, Missoula Valley, and Moccasin, MT; Jackpot and Winnemucca, NV; Cache Valley and Grantsville, UT; and Gillette, Greybull, Point of Rocks, and Sheridan, WY. Rimrock’s adaptation extends from the northern Great Plains west across the Rocky Mountains to the Columbia Plateau and Snake River Plain and north through the prairies of southern Alberta and Saskatchewan. Rimrock is adapted to sandy soils and is more persistent in medium-textured soils [North Logan, UT; Millville silt loam (coarse-silty, carbonate mesic Typic Rendolis) with 2 to 4% slope]