Registration of 'Pixie' Tall Fescue

'Pixie' tall fescue (Festuca arundinacea Schreb.) (Reg. no. CV-61, PI 565509) was developed by the Jacklin Seed Co. in Post Falls, ID, from germplasm released from the New Jersey Agriculture Experiment Station, New Brunswick, NJ. The experimental designation of Pixie was J-89. Pixie was released by Jacklin Seed Co. in October 1993. First certified seed was produced and available for sale in 1993.

Pixie was selected from 47 sister lines. Its parental germplasm traces to plants selected from, or closely related to, 'Rebel' (2) tall fescue and to plants selected from turfs in Alabama, Georgia, Idaho, Kansas, Kentucky, Maryland, Mississippi, Missouri, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, and Virginia from 1962 to 1977. These selections were evaluated in spaced-plant nurseries for attractiveness, disease resistance, and seed yield potential. Selected plants were allowed to interpollinate or were top-crossed with plants selected from or related to Rebel. Spaced-plant progenies were evaluated in closely mowed turf trials in New Brunswick and Adelphia, NJ. Clonal ramets from these closely mowed turfs were used to start new cycles of recurrent selection. Genetically superior plants that survived the stresses of interplant competition, diseases, insect pests, and frequent close mowing were identified in this recurrent selection program.

The parental clones of Pixie were selected after 4 to 10 cycles of selection. Plants were selected from superior turf plots and established in spaced-plant nurseries at Adelphia in the spring of 1988. Prior to anthesis in the late spring of 1989, a total of 81 clones were selected from this nursery and transferred to an isolated crossing block for interpollination and seed production. Selection was based on freedom from disease; attractive, rich green color; abundant tillering; medium-low plant height; and uniform maturity. Seed was subsequently harvested from the 47 clones having the best fertility and highest seed yields. Seed of each clone was sent to Jacklin Seed Co. on 7 July 1989.

During the fall of 1989, seedlings from each of the 47 sister lines were established in replicated rows in a spaced-plant breeder nursery near Albany, OR. Before anthesis in 1990, approximately 800 plants were removed from this 8000-plant nursery because of a lighter green color, coarse texture, late maturity, or susceptibility to stem rust (caused by Puccinia graminis Pers.:Pers.). The roguing process was repeated, with the removal of approximately 500 plants in 1991 and 300 plants in 1992. Breeder seed of Pixie tall fescue was first harvested from this nursery in 1992 and was used to establish a foundation planting in 1992.

The breeding populations used in the development of Pixie were established in replicated turf trials in New Jersey in 1989, Idaho in 1990, and in an inter-in U.S. national test in 1991. Official national testing of Pixie began with the tall fescue National Turfgrass Evaluation Program (NTEP) trial in 1992 (3).

Results of the 1992 NTEP (1994 data) showed that Pixie was significantly improved in overall turf quality compared with 'Titan II', 'Silverado', 'Montauk', 'Palisades', 'Rebel 3D', 'Ninja', 'Duke', 'Adobe', 'Guardian', and 'Chiefhain II' (3). Pixie had enhanced drought tolerance (wilting) compared with 'Coyote', 'Leprechaun', 'KY-31' withendophyte, 'Phoenix', and 'OFI-ATK' in tests in Nebraska and Nevada. Pixie showed improved resistance to leaf spot (caused by Drechslera spp.) compared with 'Genesis', 'Tomahawk', 'Twilight', and 'Monarch' in Texas trials, and to pythium blight (caused by Pythium spp.) compared with 'Anthem', 'Finelawn 88', and 'Mirage' in Arizona trials.

Pixie is a turf-type tall fescue with medium dark green color, fine leaf texture, and improved density (3). Pixie is adapted for golf course roughs, sports turfs, lawns, and parks in areas where tall fescue is suited for turf. Pixie is compatible in blends and mixtures with Kentucky bluegrass (Poa pratensis L.) and other tall fescue cultivars. In a tall fescue-bluegrass mixture study in Idaho (1), the best turfgrass quality scores were associated with a 50 g m⁻² seeding rate and the Pixie cultivar. Pixie remained uniformly mixed with bluegrass in seed mixture concentrations as low as 50% tall fescue by weight.

Pixie tall fescue is a uniform and stable cultivar. Seed samples of breeder, foundation, registered, and certified seed have produced turf with comparable quality and acceptable uniformity. As with any sexually propagated crop, variants will continue to arise in each generation, but these variants are infrequent and are routinely rogued from seedstock fields. Breeder seed is maintained by the Jacklin Seed Co. Seed propagation is limited to four generations of increase, one each of breeder, foundation, registered and certified. U.S. plant variety protection (PVP no. 9300148) has been applied for.

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References and Notes

4. M.J. Sellmann and A.D. Brede, Research Dep., Jacklin Seed Co., West 5300 Riverbend Ave., Post Falls, ID 83854-7581; C.R. Funk, Plant Sci Dep., New Jersey Agric. Exp. Sn., Cook College, Rutgers Univ., New Brunswick, NJ 08903. Publication no. D-12155-1-96 of the New Jersey Agric. Exp. Sn. Some of this work was conducted as part of New Jersey Agric. Exp. Sn. Project no. 12155, supported by New Jersey Agric. Exp. Sn. funds, other grants, and gifts. Additional support was received from the U.S. Golf Assoc., the Golf Course Superintendents Assoc. of America, and the New Jersey Turfgrass Assoc. Registration by CSSA. Accepted 31 Aug. 1996. *Corresponding author (muelsellmann@jacklin.com).

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Registration of 'Jesup' Tall Fescue

'Jesup' tall fescue (Festuca arundinacea Schreb.) (Reg. no. CV-60, PI 592897) was developed by the Georgia Agricultural Experiment Stations and released on 19 September 1995. It was tested experimentally as GA-Jespun Improved, GA-Jespun Improved-El, and GA-Jespun Improved-EL. Jesup tall fescue will be sold commercially as either endophyte-infected (EI) or endophyte-free (EF). The endophyte is the fungus Neotyphodium coenophialum (Morgan-Jones & W. Gams) Glenn, Bacon & Hanlin (syn. Acremonium coenophialum Morgan-Jones & W. Gams).

Jespun tall fescue is a 15-clone synthetic cultivar. The 15 endophyte-infected parents originated from 32 clones collected in 1981 from a pasture near Jesup, GA, that had been established with 'Kentucky 31' tall fescue in 1967. The 32 clones were polycrossed...