Registration of Crop Cultivars

REGISTRATION OF REPELL PERENNIAL RYEGRASS

'Repell' perennial ryegrass (Lolium perenne L.) (Reg. no 93) was developed and released by Lofts Inc., using germplasm obtained from the New Jersey Agricultural Experiment Station. Repell is an advanced generation synthetic cultivar selected from the progenies of 27 clones. Each of the 27 parental clones of Repell contain a Lolium endophyte which enhances resistance to a number of insect pests, including species of sod webworm (Crambidae spp.), billbugs (Sphenophorus parasitus Gyllenhal), and the Argentine stem weevil (Listronotus (= Hyperodetos) bonariensis Kuschel) (2,3). This Lolium endophyte is transmitted from parent to progeny through both vegetative propagules and seed.

Plants selected from Central Park in New York City, NY, were the original maternal source of the Lolium endophyte present in Repell. A plant selected from PI 231,597 (Greece) was used as the donor parent in a modified backcrossing program to incorporate an additional source of resistance to crown rust, caused by Puccinia coronata Corda var. lolii Brown, into adapted turf-type germplasm. The third backcross involved large numbers of unrelated turf-type rye-grasses as recurrent parents. These recurrent parents included plants selected from 'Manchester', 'Citation', and 'Pennfine' in addition to other turf-type perennial ryegrasses selected from old turfs in Maryland, New Jersey, Pennsylvania, and New York. These plants had undergone two cycles of recurrent selection for crown rust resistance and improved turf performance.

Progenies of the third backcross were subsequently subjected to two years of interplant competition in closely-mowed turf plots. Tillers selected from the best plots were then established in an isolated spaced-plant nursery. The 27 parental clones of Repell were selected from this nursery based on attractive appearance, acceptable seed production, medium maturity, and freedom from disease. Progenies of each clone were subsequently evaluated in turf trials subjected to frequent clear mowing. Field evaluation for sod webworm resistance was also conducted at this stage. Tillers were then selected from 27 sod web worm resistant progenies showing the best turf performance and transferred to an isolated spaced-plant nursery at Adelphia, NJ. Seed from this nursery was used to establish an isolated spaced-plant nursery near Hubbard, OR for production of breeder seed. This nursery was carefully rogued to improve uniformity of maturity, disease resistance, attractiveness of appearance, and seed yield. The first foundation seed of Repell was harvested in western Oregon in 1983.

Repell is a leafy, turf-type perennial ryegrass capable of producing a persistent, dense, attractive, low-growing turf of a bright, dark-green color. This cultivar has shown good resistance to the large brown patch disease incited by Rhizoctonia solani Kuhn, the winter leaf spot disease caused by Drechslera spp., and many races of crown rust. Repell shows promise of excellent performance in both full sun and in light to moderate shade on lawns, parks, school grounds, and sports fields in areas where turf-type ryegrasses are well adapted. Repell is also useful for the winter overseeding of dormant warm season turfs. Seed of Repell containing high levels of viable endophyte should be used to establish plantings for pasture or forage. Endophyte-containing feed may occasionally adversely affect animal health and performance under certain conditions (1).

Breeder seed is produced under the direction of Lofts Inc. Seed production is limited to three generations of increase from breeder seed, one generation each of foundation, registered, and certified. Newly harvested seed or seed maintained in cold storage should be used in the propagation of Repell to maintain the viability and effectiveness of the Lolium endophyte.

Application has been made for an United States Patent (Identification no. 558,538) for Repell perennial ryegrass.

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References and Notes

4. Vice president (director of agriculture and research), Lofts Inc., P.O. Box 146, Bound Brook, NJ 08805: professor, Soils and Crops Dep., New Jersey Agric. Exp. Stn.; associate research professor, Soils and Crops Dep.; and president, Pure-Seed Testing Inc., P.O. Box 445, Hubbard, OR 97032. Some of this work was conducted as part of NJAES project no. 15166 and 15455, supported by New Jersey Agric. Exp. Stn. funds and other grants and gifts. Additional support was received from the United States Golf Assoc. Green Section Res. and Educ. Fund, Inc. Since appreciation is expressed to the New Zealand Ministry of Agriculture and Fisheries and to Mr. A.V. Stewart, plant breeder. Pyne, Gould, Guinness Ltd., P.O. Box 112, Christchurch, New Zealand, for assistance with studies involving the Lolium endophyte. Appreciation is also extended to Drs. San Joo Han, Kevin J. McVeigh, and Phillip M. Halisky for their identification of one of the original sources of crown rust resistance used in the development of Repell. Publication no. D-15166/15455/2/1-83, New Jersey Agric. Exp. Stn., Cook College, Rutgers Univ., New Brunswick, NJ 08803. Registration by the Crop Sci. Soc. of Am. Accepted 24 Apr. 1984.

REGISTRATION OF BAILEY SWEET SORGHUM

'BAILEY' is a sweet sorghum [Sorghum bicolor (L.) Moench] (Reg. no. 123) cultivar developed for silor production and is adapted to the southeastern USA. The cultivar was developed at the U.S. Sugar Crops Field Station, Meridian, MS and released in 1984 by the Georgia Agricultural Experiment Station and the cooperative research program of USDA-ARS. The name Bailey commemorates the late Mr. John Bailey who was former superintendent of the Georgia Mountain Branch Station at Blairsville.

Bailey was selected from the F2 progeny of the cross 'Wiley' × 'Tracy'. The pedigree method of breeding was used to advance the progeny through the F3 generation. The cultivar was evaluated periodically from 1972 to 1982 as Mer. 71-7 at the Georgia Mountain Branch Experiment Station, Blairsville, GA.

Bailey is highly resistant to foliar anthracnose and red stalk rot caused by Colletotrichum graminicola (Ces.) G.W. Wils. It has good resistance to downy mildew [caused by Peronosclerospora sorgi (Weston and Uppal) C.G. Shaw] and head smut caused by Ustilago maydis (black leaf blight). It is susceptible to maize dwarf mosaic virus (MDMV) and when infected at an early vegetative stage of growth can be severely injured. The cultivar should not be grown where