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 (Crambus spp.), billbugs (Sphenophorus parvulus Gyllenhal), and the Argentine stem weevil (Listronotus (=Hyperodes) 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 ryegrasses as recurrent parents. These recurrent parents included plants selected from 'Manhattan', '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 close mowing. Field evaluation for sod webworm resistance was also conducted at this stage. Tillers were then selected from 27 sod webworm 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 uniformity of maturity, disease resistance, attractiveness of appearance, and seed yield. The first foundation seed of Repell was harvested in western Oregon in 1983.

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

Application has been made for an United States Patent Application has been made for an United States Patent (Identification no. 558,338) for Repell perennial ryegrass.