Registration of ‘Freedom III’ Kentucky Bluegrass

‘Freedom III’ Kentucky bluegrass (Poa pratensis L.) (Reg. no. CV-89, PI 634976) is a turf-type cultivar released in August 2004 by Jacklin Seed by Simplot, Post Falls, ID. Experimental designations for Freedom III were 94-2890 and J-2890.

Freedom III originated as an apomictic, single-plant selection from the progeny of field cross 92-4230, created June 1992 using Jacklin breeding line 92-0076 as the maternal parent and ‘Midnight’ (Meyer et al., 1984) as the pollen source. Isolation distance and not pollen bags were used to control pollination. Breeding line 92-0076 is a dark green Kentucky bluegrass with medium-low turf quality, originating from an open-pollinated field cross of Midnight in 1990. Seeds harvested from hybrid cross 92-4230 were sown in greenhouse flats in spring of 1993 and transplanted into a spaced-plant nursery of 40,701 plants. Offspring with characteristics dissimilar to 92-0076 were selected during maturation in spring of 1994. Plant number 94-2890 was identified as being unique from 92-0076 by the color and appearance of its panicle. A single spaced plant of 94-2890 produced 43 g of clean seed, which is nearly three times the amount typical for a Kentucky bluegrass plant in northern Idaho. Freedom III was named to replace ‘Freedom II’ (Brede, 2004), which had plant characteristics and a parent in common.

Seed harvested from plant 94-2890 was tested in turf evaluation trials in Idaho beginning in 1994 and in Maryland, New Jersey, and Ohio in 1997. Seed yielding ability was evaluated in trials in Idaho beginning in 1998 and Washington in 1999. First Breeder seed was produced in 2000 and first Certified seed in 2003, though none was sold until 2004.

Progeny apomixis trials were conducted in a spaced-plant nursery established near Post Falls in 1999. Among Freedom III plants, 3.4% were variants in the vegetative stage, 2.4% were heading maturity variants, 0% were seedhead variants, 3.2% were miniature plants, and 0.8% were headless plants. In spaced-plant nurseries, Freedom III averaged 90% apomictic, 3.2% were miniature plants, and 0.8% were headless plants. In heading maturity variants, 0% were seedhead variants, 2.4% were variants in the vegetative stage, 3.4% were variants in the vegetative stage, 2.4% and 3.4% were variants in the vegetative stage.

Seedstock fields but will continue to be expressed in each generation because of the facultative apomictic nature of Kentucky bluegrass.

Freedom III most closely resembles ‘Awesome’ (PVP no. 200300009) Kentucky bluegrass, differing by a shorter culm length and lower turf quality ratings under traffic stress. Freedom III is a half-sib of the cultivars Alexa (Brede, 2006a) and EverGlade (Brede, 2006b).

Freedom III was tested in the 2000 National Turfgrass Evaluation Program (NTEP) trials for Kentucky bluegrass (Morris, 2002, 2003, 2004, 2005). In the trial, Freedom III had a dark green genetic color, good winter color, and good turf quality at close mowing (25 mm or lower), intermediate (25–50 mm), and roughs and for lawns, parks, and sports turf. Freedom III has good shoot density during spring, summer, and autumn, in some shade, in areas where Kentucky bluegrass is well adapted and in full sun, good tolerance of traffic stress, and good sod strength. It is resistant to leaf spot [caused by Sphacelotheca fuliginea (Fr.) Tul.], red thread [caused by Laetisaria fuciformis (Baudys) Shoem], Typhula blight (caused by Rhizoctonia solani Kühn), and brown patch (caused by Drechslera poae Mitt.). In mowed turf, good tolerance of traffic stress is evident.

In 5 yr of commercial seed production, Freedom III has demonstrated the potential for high yields of quality seed, relative freedom from reverse reactions to labeled pesticides.

Freedom III is recommended for golf courses, tees, and roughs and for lawns, parks, and sports turf. It is compatible in blends and mixes with cool-season turfgrasses at mowing heights and performed well in the northeastern, Midwest, Great Plains, and Mountain West, and Transition Zone regions of the USA, where it was tested.

Breeder seed is maintained by Jacklin Seed by Simplot, West 5300 Riverbend Ave., Post Falls, ID 83854. Experimental application no. 200400208 has been filed for limited quantities of seed are available for experimentation on request from the author. Recipients are asked to acknowledge the source if Freedom III contributes to the development of a cultivar or germplasm or is used for other research. Freedom III has been deposited in the National Plant Germplasm System (NPGS), but no seed will be distributed by the NPGS without permission from the author. Recipients are asked to request permission for 20 yr from the date of publication of this registration in Crop Science, at which time seed will also be available from the National Plant Germplasm System.

References
