Registration of ‘Alpha’ Smooth Bromegrass

‘Alpha’ smooth bromegrass (Bromus inermis Leyss.) (Reg. no. CV-20, PI 584449) was developed by the forage grass breeding and genetics program of the Wisconsin Agricultural Experiment Station, Madison, WI, and released in August 1993. Alpha was tested as experimental synthetic B9. It was developed through five cycles of tandem phenotypic recurrent selection in which all the selection criteria varied considerably among cycles.

The parental germplasm included a broad-based smooth bromegrass germplasm pool that included the large number of plant introductions and cultivars, the identity of which are unknown. It is the same pool from which the cultivar Badger was derived (1). Between 1959 and 1965, this germplasm pool was subjected to two cycles of phenotypic recurrent selection for resistance to seedling damping-off (caused by Pythium spp.), using a Pythium-infested soil medium in the greenhouse. The third cycle of phenotypic selection, for resistance to brown leaf spot (caused by Drechslera bromi (Died.) Shoemaker) using natural inoculum at Arlington, WI, was completed in 1969 when seed was harvested from 62 plants without disease symptoms. In cycle four, seed of the 62 half-sib families was planted in replicated rows at Arlington and overseeded with alfalfa (Medicago sativa L.) and oat (Avena sativa L.). After 2 yr of a three cuts per year management system, an equal number of 15-cm cores were dug from each of the eight families with the highest mean recovery after cutting, based on visual scores. The cores were pooled to form the B8 synthetic in 1973 (2). In cycle five, 270 spaced plants of B8 were screened for reaction to infection by naturally occurring brown leaf spot inoculum at Arlington in 1975, 1976, and 1977. Forage samples were collected from each plant. Twenty-three plants were selected based on low 3-yr mean disease reaction and high 3-yr mean in vitro dry matter digestibility (IVDMD), using the two-stage procedure of Marten and Barnes (3). These 23 plants were polycrossed in a 10-replicate crossing block in 1981 and 1982.

Alpha has been tested in cultivar trials at six locations (Arlington, Ashland, Marshfield, and Spooner, WI, and Ames, IA) for a total of 16 location-year combinations. Alpha averaged 0.9% higher mean forage yield than ‘Rebound’ in these Wisconsin and Iowa trials, averaging 13 g kg⁻¹ (2.0%) higher than Rebound. Alpha averaged 14% greater average daily gain than Rebound when both cultivars were grazed by ewes and lambs (Ovis aries) in a replicated grazing experiment at Arlington in 1985. The relative maturity of Alpha was similar to that of other smooth bromegrass cultivars when tested in Wisconsin. Alpha had excellent perennial ryegrass and oat (Avena sativa L.) (Reg. no. CV-177, PI 561593) is a turf-type cultivar developed through the cooperative work of Pure-Seed Testing, Inc., Hubbard, OR, and the New Jersey Agricultural Experiment Station. Brightstar was released in September 1992. Brightstar is an advanced-generation synthetic cultivar comprised of the maternal progenies of 17 clones. Each of these clones contained a fungal endophyte, Acremonium lolii Latch. Hill, Sjovold & T. Christiansen, 1977. The 31 parental clones of Brightstar were selected from a large germplasm pool that included a large number of plant introductions and cultivars, the identity of which are unknown. It is the same pool from which the cultivar Adelphia was derived (4). Breeder seed of Alpha smooth bromegrass will be limited to Foundation and Certified classes, which will be one and two generations advanced from breeder seed, respectively.

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References and Notes

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Registration of ‘Brightstar’ Perennial Ryegrass

‘Brightstar’ perennial ryegrass (Lolium perenne L.) (Reg. no. CV-177, PI 561593) is a turf-type cultivar developed through the cooperative work of Pure-Seed Testing, Inc., Hubbard, OR, and the New Jersey Agricultural Experiment Station. Brightstar was released in September 1992. Brightstar is an advanced-generation synthetic cultivar comprised of the maternal progenies of 17 clones. Each of these clones contained a fungal endophyte, Acremonium lolii Latch. Hill, Sjovold & T. Christiansen, 1977. The 31 parental clones of Brightstar were selected from a large germplasm pool that included a large number of plant introductions and cultivars, the identity of which are unknown. It is the same pool from which the cultivar Adelphia was derived (4). Breeder seed of Alpha smooth bromegrass will be limited to Foundation and Certified classes, which will be one and two generations advanced from breeder seed, respectively.

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