

### REGISTRATION OF 'DAWN' KENTUCKY BLUEGRASS

'DAWN' Kentucky bluegrass (*Poa pratensis* L.) (Reg. no. 43, PI 537304) was developed by the Jacklin Seed Co. of Post Falls, ID, using germplasm obtained from the New Jersey Agricultural Experiment Station. It was released in September 1987 by the Jacklin Seed Co. and is currently marketed throughout the United States by LESCO, Inc., Rocky River, OH, and internationally by the Jacklin Seed Co. F-1328 was the experimental designation of Dawn. The first certified seed was produced in eastern Washington in 1987.

Dawn originated as the progeny of a single, facultatively apomictic plant selected from the  $F_1$  progeny of the cross NJE P-120  $\times$  PSU K-106. NJE P-120, the maternal parent of Dawn, was selected from the rough on the left side of the 14th fairway of the Colonia Golf Course in Colonia, NJ, in the spring of 1963. NJE P-120 is a highly apomictic, moderately low-growing, turf-type Kentucky bluegrass with medium-wide leaves and a bright, medium-dark green color. It has excellent cold-weather color retention and an exceptionally attractive early spring color. NJE P-120 has shown good resistance to the leaf spot and melting-out disease caused by *Drechslera poae* (Baudys) Shoemaker, and leaf rust caused by *Puccinia brachypodii* Gotth. var. *poae-nemoralis* Gotth. PSU K-106, the paternal parent of Dawn, was selected from an old turf in northern Kentucky by J.M. Duich of the Pennsylvania State University. PSU K-106 is an apomictic, turf-type Kentucky bluegrass capable of producing an attractive, medium-low growing, leafy, persistent turf with medium-dark green color, medium-fine soft leaves, medium-high density, and good resistance to the leaf spot and melting-out disease. NJE P-120 was pollinated by PSU K-106 during the late winter of 1969 in a greenhouse located on the Cook College campus of Rutgers University. Conditions prior to and during pollination were modified to enhance increased sexual reproduction of highly apomictic bluegrasses (1,2,3). Seedlings from this cross were transplanted into a spaced-plant nursery at Adelphia, NJ, during August 1969. An attractive  $F_1$  hybrid was selected from this progeny during June 1970. Seed harvested from this plant was used to establish turf trials at New Brunswick, NJ, during late summer 1970. Seed yield trials were established in northern Idaho by the Jacklin Seed Co. in 1975. A spaced-plant breeder nursery was planted in 1979. These progeny trials were highly uniform, with  $\approx$  98% of the plants appearing genetically identical to their maternal parent, indicating a high level of apomictic reproduction. The few aberrant plants produced by Dawn are usually smaller and weaker than the maternal-type plants that originate through apomictic reproduction. Aberrant plants generally arise through sexual reproduction of their highly heterozygous parents and show a wide array of variation. Nearly all aberrant plants are crowded out in lawn-type turfs due to intense interplant competition and have little, if any, effect on the appearance or performance of an established turf.

Dawn is a moderately low-growing, turf-type Kentucky bluegrass. It develops an attractive color in early spring and retains good color during cold weather. Dawn is capable of producing a persistent, moderately aggressive turf of medium texture, medium-high density, and an attractive, dark green color. Dawn has shown good resistance to the leaf spot and melting-out disease and moderately good resistance to stem rust caused by *P. graminis* Pers. subsp. *graminicola* Urban. Reproductive maturity is medium late.

Dawn is compatible in blends with many widely used cultivars of Kentucky bluegrass, and in mixtures with improved turf-type perennial ryegrasses (*Lolium perenne* L.), strong creeping red fescues (*Festuca rubra* L. subsp. *rubra*), and the more competitive turf-type tall fescues (*F. arundinacea*

Schreb.). Such blends and mixtures are recommended for lawn-type turfs in temperate climates where Kentucky bluegrass is well suited for turf.

Breeder seed of Dawn is maintained by the Jacklin Seed Co. Seed increase is limited to three cycles of increase from breeder seed, one each of foundation, registered, and certified.

United States Plant Variety Protection Certificate no. 8800062 was issued for Dawn Kentucky bluegrass on April 29, 1988.

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#### References and Notes

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4. A.D. Brede and A.W. Jacklin, Jacklin Seed Company, West 5300 Riverbend Avenue, Post Falls, ID 83854; L.A. Brilman, Seed Research of Oregon, Inc., P.O. Box 1416, Corvallis, OR 97339 (formerly with Jacklin Seed Company); R.H. White, The Texas Agric. Exp. Stn., 17360 Coit Rd., Dallas, TX (formerly, Crop Science Dep., New Jersey Agric. Exp. Stn., Cook College, Rutgers Univ., New Brunswick, NJ 08903); and C.R. Funk, New Jersey Agric. Exp. Stn. Publication no. D-15166-3-90, New Jersey Agric. Exp. Stn. Some of this work was conducted as part of NJAES Project no. 15166, supported by New Jersey Agric. Exp. Stn. funds, other grants, and gifts. Additional support was received from the United States Golf Association Green Section Research and Education Fund, Inc. Registration by CSSA. Accepted 30 Apr. 1990. \*Corresponding author.

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### REGISTRATION OF 'TAMCOT HQ95' COTTON

'TAMCOT HQ95' COTTON (*Gossypium hirsutum* L.) (Reg. no. 96, PI 538033) was developed in the Texas Agricultural Experiment Station Multi-Adversity Resistance (MAR) Genetic Improvement Program, and released in 1990. The MAR system utilizes specific direct-indirect seed, seedling, and plant selection procedures and techniques for the simultaneous genetic improvement of resistance to pests (insects and plant pathogens) and abiotic stresses, in addition to improving yield, earliness, and fiber and seed quality (2,4). The MAR techniques have proven successful in pyramiding genes in cotton that condition broad-spectrum resistance to pests and environmental stresses.

Tamcot HQ95 was developed from a cross between 'Tamcot CD3H' and MAR-CABU'CS-2-1-83. Individual  $F_3$  plants were selected using the MAR procedures (2,4). Tamcot HQ95 is a descendant from an  $F_4$  progeny that was selected and designated as MAR-CABUCD3H-1-86.

Tamcot HQ95 is as hirsute as Tamcot CD3H, has a cylindrical-shaped growth habit, and storm-resistant bolls. Plants are taller and less determinate than 'Tamcot CAMD-E' and shorter than 'Tamcot SP37'. Approximately 66% of Tamcot HQ95 plants have flowers with cream pollen and 34% have yellow pollen. Plants have normal leaf and bract morphology, dark-green leaves, and are nectaried. Tamcot

HQ95 has a higher yield potential and matures significantly earlier than Tamcot CAMD-E (1). It is similar to Tamcot CD3H (3) in fruiting characteristics, maturity, and yield potential. A major improvement of Tamcot HQ95 is that it produces significantly longer (0.08 cm) and stronger (19.62 kN m kg<sup>-1</sup>) fibers than Tamcot CD3H.

Tamcot HQ95 has the *B<sub>2</sub>B<sub>3</sub>B<sub>4</sub>B<sub>7</sub>* major genes, and minor and modifier genes that confer resistance to the 19 designated U.S. races of the bacterial blight pathogen [*Xanthomonas campestris* pv. *malvacearum* (Smith) Dye].

Tamcot HQ95 has the same levels of resistance to plant pathogens causing seed rot-seed deterioration, seedling disease, bacterial blight, verticillium wilt (*Verticillium dahliae* Kleb.), fusarium wilt [*Fusarium oxysporum* Schlecht. f. sp. *vasinfectum* (Atk.) Snyd. & Hans.]-root knot nematode [*Meloidogyne incognita* (Kofoid & White) Chitwood] complex, phymatotrichum root rot [*Phymatotrichum omnivorum* (Shear) Dug.], and leaf spots as Tamcot CD3H (3). Tamcot HQ95 has a higher level of resistance to *P. omnivorum* than 'Tamcot SP37'.

Tamcot HQ95 has higher levels of resistance to insects [flea hopper, (*Pseudatomoscelis seriatus* Reut.), boll weevil (*Anthonomus grandis* Boh.), and *Heliothis* spp.] than Tamcot CAMD-E (1) and the same levels of resistance to these insects as Tamcot CD3H (3).

The Foundation Seed Service of the Texas Agricultural Experiment Station will produce and sell foundation seed to producers of registered and certified classes of seed. Tamcot HQ95 has plant variety protection, which requires that it be sold by name only as classes of certified seed.

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#### REGISTRATION OF 'PRAIRIE' BUFFALOGRASS

'PRAIRIE' (Reg. no. 134, PI 539858) is a female plant of the species *Buchloe dactyloides* (Nutt.) Engelm. It was selected and developed for its turf-type characteristics by Texas A&M University and released in September 1989. Prairie was selected as an open-pollinated progeny of TAES1363, a female plant originally collected by the USDA-SCS from a heavy clay soil site in Falls County, Texas. TAES1363 was established and grown in a spaced-plant hybridization nursery with 150 other buffalograss accessions. Seed was harvested from maternal lines. Maternal identity was maintained during progeny evaluation. Prairie, designated as TAES 1363.2

and DALBD8201 during development, is a vegetatively produced turf-type buffalograss plant. Prairie produces female inflorescences prolifically, but produces no viable seed in the absence of a compatible pollen source. Male inflorescences are absent.

Prairie is a blue-green, dense, fine-textured, stoloniferous turfgrass with a mature plant height of 10 to 15 cm. Color and mature plant height are dependent on level of management. Prairie spreads faster and is more dense and uniform in visual appearance than other commercially available buffalograss cultivars. Mature Prairie turf is competitive against weeds and other grasses, including johnsongrass [*Sorghum halepense* (L.) Pers.], dallisgrass [*Paspalum dilatatum* Poir.], and bermudagrass [*Cynodon dactylon* (L.) Pers.]. When grown in an area with 45 to 70 cm annual precipitation, Prairie will require infrequent supplemental irrigation to maintain quality turf, and will require little or no irrigation to maintain a competitive turf stand.

The area of adaptation for Prairie extends from the South Texas Plains north into Nebraska. Good turf persistence is also reported in California and Georgia. Prairie will perform best on heavier soils, and performs well on neutral to alkaline soils. Prairie is best adapted to high sunlight conditions and its shade tolerance is similar to most turf-type bermudagrasses. It has good wear tolerance and survives well under moderately compacted soils. In comparison to most warm season grasses, Prairie has excellent cold tolerance, heat tolerance, and drought resistance. Because it is a female plant, Prairie does not produce pollen. It is aesthetically pleasing even when unmowed, because female inflorescences are all located within the leaf canopy. Prairie is susceptible to the buffalograss mite [*Eriophyes (Aceria) slykhuisi* (Hall) (Acari:Eriophyidae)], which is presently considered a minor pest.

Prairie initiates spring growth  $\approx$  2 wk earlier and exhibits considerably improved frost tolerance than turf-type bermudagrasses. It is responsive to annual N fertilization of  $\leq$  2 kg a<sup>-1</sup> (195 kg ha<sup>-1</sup>) but will persist with no supplemental fertilization. Annual fertilization of 0.5 to 1.0 kg a<sup>-1</sup> will greatly improve density of stand, quality of turf, and competitive ability against weed invasion. Experimental plantings in Corpus Christi, San Antonio, and Dallas, TX; Fort Collins, CO; and Lincoln, NE, indicate Prairie has excellent winter hardiness, and rapid coverage when planted as sprigs, plugs or sod.

Production research suggests Prairie will produce acceptable quality sod in 7 to 10 mo following sprig planting, and can be marketed as sod, sprigs, or plugs.

Prairie buffalograss is recommended for use as a minimal-maintenance turfgrass for roadsides, industrial parks, and nonirrigated landscape sites throughout the southern mid-continental USA. Once established, Prairie will require infrequent mowing to maintain a uniform stand. With modest fertilization and minimal supplemental irrigation, Prairie will provide an acceptable quality turf for most residential lawns and domestic landscape sites. Recommended mowing height is 10 cm with  $\leq$  1.0 kg N a<sup>-1</sup>.

Prairie buffalograss was released for certified commercial production in September 1989. Only certified planting stock will be sold in the wholesale or retail market.

Breeder stock will be maintained by the Texas Agricultural Experiment Station. Only breeder, foundation, and certified classes of sod are recognized for Prairie. All certified production must be directly from foundation or breeder stock, and certified production is limited to 7 yr from the date of the initial planting.

Application has been made for a U.S. Plant Patent, Serial no. 07/456,851, and a U.S. Utility Patent, Serial no. 07/467,259.

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