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REGISTRATION OF DES 56 COTTON[1]

(Reg. No. 70)

R. R. Bridge and J. F. Chism[2]

'DES 56' cotton (*Gossypium hirsutum* L.) was developed at the Delta Branch, Mississippi Agricultural and Forestry Experiment Station. DES 56 originated from a cross between 'Stoneville 213' and 'PD 62-164'. The F_2 population of this cross was intercrossed at random. DES 56 is from a single plant selection in the F_2 generation of the intercross population and a subsequent reselection in the F_7 generation. DES 56 has been tested since 1971 as DES 2134-056.

DES 56 is an early maturing and rapid fruiting cotton with dark green foliage. It produced 9% higher lint yields and matured 10 days earlier than 'Deltapine 16' in 25 Delta environments over the past 6 years. DES 56 has smaller bolls and seed, slightly shorter fiber, and its height is approximately 15 cm less than that of Deltapine 16. Lint percentage, fiber strength, and micronaire values are approximately the same as those of Deltapine 16. Data from Arizona and Louisiana have shown that the earliness of DES 56 is sufficient to escape some late season insect damage.

Mississippi Foundation Seed Stocks will produce foundation seed which will be sold on a pro rata basis to breeding firms and individuals meeting all standards of the Mississippi Seed Improvement Association for the production of registered seed. When the demand for Mississippi producers has been met, foundation seed may be released to other states provided they have qualifications of those requested of Mississippi producers.

Breeder seed will be maintained by Delta Branch, Mississippi Agricultural and Forestry Experiment Station. Variety protection will be applied for under the Variety Protection Act, Public Law 91-557.

[1] Registered by the Crop Sci. Soc. Am. Published as Journal Paper 3584 of the Mississippi Agric. For. Exp. Stn. Accepted 17 Dec. 1977.

[2] Plant breeder and assistant agronomist, respectively, Delta Branch, Mississippi Agric. For. Exp. Stn., Stoneville, MS 38776.

REGISTRATION OF ARCTARED RED FESCUE[1]

(Reg. No. 13)

H. J. Hodgson, R. L. Taylor, L. J. Klebesadel, and A. C. Wilton[2]

'ARCTARED' (*Festuca rubra* L.) is a winterhardy, creeping red fescue developed cooperatively by the University of Alaska Agricultural Experiment Station, and the SEA, USDA. Arctared was named and released to seed producers in 1965, after extensive testing in the Matanuska Valley of south-central Alaska as Line 339.[3]

Arctared traces to seed from a single plant collected in the Matanuska Valley in 1957. Spaced-plant progeny of this collection were included in a large evaluation nursery established in 1958. Open-pollinated seed of five plants of Line 339, produced in 1959, was composited for an initial increase in isolation. Subsequently, 60 clones were selected for vigor and appearance from this population. These now form the parental stock of this cultivar.

Arctared is the first red fescue cultivar to show dependable winter survival in the Matanuska Valley of south-central Alaska. It has survived, without noticeable injury, winters that eliminated all introduced red fescue cultivars from experimental turf nurseries. Absence of winter injury contributes to the ability of Arctared to initiate growth early in the spring.

Arctared produces a dense, medium-textured, medium-green turf, somewhat lighter in color than most introduced cultivars. Rapid germination and excellent seedling vigor contribute to the speedy establishment of new seedlings. Arctared tolerates close clipping; it has survived winters without apparent injury after maintenance at about 1.25 cm for the entire season. However, better turf quality is achieved when mowing is about 2.5 cm in height. Although tested and released for turf, Arctared has shown some promise as a forage crop, particularly when winter survival of less hardy fescue cultivars is a factor. Arctared is suitable also for revegetation and soil stabilization.

Seed production of Arctared has been generally satisfactory, with minor lodging and shattering problems. Average seed yields of 425 kg/ha, for the year after seeding, have been obtained over three seasons in the Matanuska Valley.

Breeder seed of Arctared, the bulk harvest from a replicated, isolated, 60-clone, spaced-plant nursery, is maintained at the Alaska Agricultural Experiment Station, Palmer, AK 99645. Foundation, registered, and certified seed classes are recognized as successive generations of increase from breeder seed.

[1] Registered by the Crop Sci. Soc. Amer. Univ. of Alaska Agric. Exp. Stn. Journal Paper No. J-125. Accepted 12 Dec. 1977.

[2] Assistant to the Director, Agric. Exp. Stn., Univ. of Wisconsin, Madison, WI 53706; research agronomists, SEA, USDA, Palmer, AK 99645; and research agronomist, SEA, USDA, Mandan, ND 58554.

[3] Klebesadel, L. J., A. C. Wilton, R. L. Taylor, and J. J. Koranda. 1964. Fall growth behavior and winter survival of *Festuca rubra* and *Poa pratensis* in Alaska as influenced by latitude-of-adaptation. Crop Sci. 4:340-341.

REGISTRATION OF SPEAR OATS[1]

(Reg. No. 279)

Dale L. Reeves[2]

'SPEAR' oats (*Avena sativa* L.), SD 955, CI 9203, is a spring oat cultivar developed by the South Dakota Agric. Exp. Stn. and released 15 Dec. 1974. Spear was selected for its improved straw strength and grain protein content.

A single F_2 plant was selected from 'Neal' × 'Clintland 64' and advanced in bulk for testing. Ultraviolet-absorbing kernels were removed in the F_7 and F_8 generations to purify it for white kernels. The plants most susceptible to crown rust (*Puccinia coronata* Cda. f. sp. *avenae* Fraser and Led.) and stem rust (*Puccinia graminis* Pers. f. sp. *avenae* Ericks. and E. Henn.) and other off-type plants were rogued from this material. Spear was grown in South Dakota standard variety trials during 1971-74 and the Uniform Midseason Oat Performance Nursery during 1968-71 and 1973.

Spear is a midseason oat that heads about the same time as 'Chief' and 'Garland'. Plants are midtall, being similar in height to Garland and 'Diana'. Straw strength is very good. Small awns are present on some plants. Kernels are white, but up to 4% may be light yellow to yellow in color. Under certain conditions the palea may become darkened in color. Test weight is similar to that of most other commercially grown cultivars. Groat percentage is good, being about the same as 'Dal' and 'Otee'. Groat protein percentage is higher than other cultivars with which it was tested in South Dakota, except Dal and Otee. Groats have averaged about 7% oil.

Spear is moderately resistant to crown rust races that were prevalent at the time of release, and in this respect, was better than Chief, Garland, 'Holden', or 'Trio'. Most seedling plants are moderately resistant to crown rust race 264B, but some susceptible segregates are present. Spear is slightly less susceptible to barley yellow dwarf virus than 'Froker' or Chief. It is moderately susceptible to most loose smut races (*Ustilago avenae* (Pers.) Roster.). Two-thirds of the plants are resistant to race 61 of stem rust, but all plants are susceptible to race 32. Stem rust resistance is due to the *Pg* - 4 (B) gene.

Spear is best adapted for production in South Dakota and other north central states.

Breeder seed will be maintained by the South Dakota Foundation Seed Stock Division of South Dakota State Univ., Brookings, SD 57006. Other data have been previously published.[3]

[1] Registered by the Crop Sci. Soc. Am. Journal Paper No. 1482 of the South Dakota Agric. Exp. Stn., Brookings, SD 57006. Accepted 22 Oct. 1977.

[2] Associate professor, Plant Science Dept., South Dakota State Univ., Brookings, SD 57006.

[3] D. L. Reeves. 1975. Spear Oats. South Dakota Agric. Exp. Stn. Bull. 629.