have moderate vigor, excellent seed production, a high percentage of staminal pollen, and normal anther dehiscence.

Crosses between the A and B type plants gave a high percentage (average 93%) of male sterile plants. Male sterility in the backcrosses of the F₃'s to the B types was slightly less (average 86%).

The cytoplasmic-genic male sterility mechanism incorporated in the above plant material makes possible the study of combining ability on a practical basis, the isolation of good combinations, and the production of commercial hybrids if certain problems can be overcome.


**REGISTRATION OF SIX GERMPLASM LINES OF KENTUCKY BLUEGRASS**

(Reg. Nos. GP 1, GP 2, GP 3, GP 4, GP 5, and GP 6)

Arne Hovin

The following lines of Kentucky bluegrass (*Poa pratensis* L.) were released to plant breeders and seed producers in 1970 from Minnesota Agricultural Experiment Station. They are highly apomictic selections among 33,417 lines collected in Minnesota and adjacent states during 1959 to 1964. These lines were superior in seedling vigor and tolerance to epiphylotics of field-collected powdery mildew. At Rosemount and St. Paul, Minnesota, the six lines were tolerant to rust, *Helminthosporium* leaf spot, and to heat stress during summer when managed as turf. The following agronomic characteristics were obtained from plantings at Rosemount and Roseau, Minnesota.

Minn 1255, (Reg. No. GP 1), collected in pasture near Rochester, Minnesota, has wide, dark green leaves, moderate vigor, erect and dense growth habit, early heading, small seed size, and good seed yield.

Minn 1932, (Reg. No. GP 2), collected from roadside near Staples, Minnesota, has narrow, very dark green leaves, tolerant to close mowing, moderate vigor, early heading, small seed size, and high seed yield.

Minn 5709, (Reg. No. GP 3), collected from roadside near Platteville, Wisconsin, has medium-wide, dark green leaves, moderate vigor, early heading, small seed size, and low seed yield.

Minn 8334, (Reg. No. GP 4), collected near Faribault, Minnesota, has medium wide, dark green leaves, dense growth habit, moderate vigor, large seed size, and medium seed yield.

Minn 8911, (Reg. No. GP 5), collected near Randolph, Minnesota, has medium wide, very dark green leaves, good quality turf of good vigor, particularly on mineral soil, late heading, medium-large seed size, and high seed yield.

Minn 12541, (Reg. No. GP 6), collected near Detroit Lakes, Minnesota, has medium leaf width, aggressive plant growth, medium-late heading, small seed size, and medium seed yield.

A seed packet (30 g) from each clone will be provided upon written request and on agreement to make appropriate recognition of their source as a matter of open record when these germplasms contribute to the development of a new variety or hybrid. Request seed from Foundation Seed Stocks, St. Paul Campus, University of Minnesota, St. Paul, Minnesota 55101.

**REGISTRATION OF REDUCED-HULL SAFFFLOWER LINES, REDUCED-HULL-1, -2, -3, and -4**

(Reg. No. GP 6 to GP 9)

A. L. Urie and D. E. Zimmer

Safflower lines (*Carthamus tinctorius*) which possess a reduced-hull character were discovered at Logan, Utah, in 1965. The reduced-hull lines are true breeding F₃ selections from 'Ute' × *'Ute* is a normal-hull, high-yielding variety, cooperatively released by the Crops Research Division and the Utah Agricultural Experiment Station. Line 13049 is a purple-striped-hull line. Seeds of the reduced-hull lines are characterized by a reduction of the outer sclerenchymatous layer of the pericarp. Frequenty the pericarp is so reduced that the underlying phylloclinlayer is exposed as irregular blotches. The reduction of sclerenchyma also varies from seed to seed. A more detailed description is given in an earlier publication.

Due to pericarp reduction the reduced-hull lines possess 41 to 44% oil, 5 to 8 percentage points higher than Ute. In comparative yield trials, the yields of reduced-hull-1 (GP 6), reduced-hull-2 (GP 7), reduced-hull-3 (GP 8), and reduced-hull-4 (GP 9) were 3,429, 3,496, 3,480, and 3,022 kg/ha, respectively, whereas 'Ute' and 'US-10' yielded 3,557 and 2,833 kg/ha, respectively. The reduced-hull lines are of the same growing habit as 'Ute'; well-branched, medium maturity, small-headed, and small-seeded. They are moderately resistant to root rot and only moderately susceptible to rust.

The four reduced-hull lines differ in their degree of spinescence. By Claassen's classification reduced-hull-1 and reduced-hull-2 would have a high spine index (very spiny) while reduced-hull-3 and reduced-hull-4 would have much lower spine indices.

Reduced-hull-2 plants are taller and later than reduced-hull-1. The oil percentage of reduced-hull-2 is 43.4% compared to 41.8% for reduced-hull-1. Reduced-hull-4 was significantly lower in yield than the other reduced-hull lines but the seed of this line had a higher oil percentage and lower hull percentage than the other reduced-hull lines. Reduced-hull-4 is also earlier in maturity than the other reduced-hull lines.

Small quantities of seed are available upon request to the U.S. Cotton Research Station, 17053 Shafer Ave., Shafter, California 93263.

**REGISTRATION OF FLORIDA 513 TOBACCO GERMPLASM**

(Reg. No. GP 10)

C. E. Dean

'Florida 513' is a cigar-wrapper tobacco (*Nicotiana tabacum* L.) breeding line with resistance to blue mold, a destructive disease which attacks tobacco. This breeding line was developed under a contractual agreement between the North Florida

1 Registered by the Crop Science Society of America. Received June 7, 1970. Published with approval of Director, Minnesota Agricultural Experiment Station as Journal Series No. 7293.

2 Professor of Plant Breeding, University of Minnesota, St. Paul.