REGISTRATION OF GERMLAPSMs

Mo2 should be a valuable source of resistance to many pathogens, particularly Puccinia polysora Underw. and Helminthosporium maydis Nishikado & Miyake, because of the selection pressure on the components of NCB for resistance to these fungi. Recurrent selection should be effective in increasing the frequency of resistance in this population.

Seed supplies of this released stock may be obtained from the Missouri Foundation Seed Project, 135 Mumford Hall, Columbia, MO.

REGISTRATION OF SEXUAL GUINEAGRASS GERMLAPSM
(Reg. No. GP 6)

Rex L. Smith

Sexual guineagrass (Panicum maximum Jacq.) germplasm was released to breeders throughout the world by the Florida Agric. Exp. Station. This species is usually a facultative apomict, which makes genetic improvements impractical. An extensive search was made to isolate sexual types. In 1971, 742 nine-plant progenies were evaluated for within-progeny segregation. Five of these progenies segregated, two each from PI 277901 and PI 277962 and the other from PI 156542. These were collected from South Africa, Florida, and South Rhodesia, respectively.

These sexual plants hybridize readily with apomictic pollinators and produce progenies that segregate for sexual and apomictic reproduction modes.

All of the sexual plants isolated were of the fine-leaved type and appear to be tetraploid with a somatic chromosome number of 32. They hybridize readily with the broad-leaved and creeping types. Even though emasculation is not practical (because of severe seed shattering), high percentages of hybrids can be obtained using mutual pollination. An evaluation of the effectiveness of mutual pollination for producing hybrids revealed that an average of 55% hybrids were produced in a total of 900 progeny from five sexual plants. One sexual plant, 68s-5-9, produced 82% hybrids. Four female clones, 68s-5-9, 6s-2-1, 120s-3-3, and 120s-3-7, have been selected from the sexuals because of their higher rate of sexuality, vigor, and agronomic performance and have been used extensively in our breeding program.

Limited amounts of vegetative material of these four clones are available upon request. Open-pollinated seed that will segregate for mode of reproduction and other traits is available from a number of sexual plants that will permit screening for the best-adapted sexual plants for specific areas and conditions. However, use of this seed would require determination of re-production mode to isolate sexual plants useful in a breeding program.

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REGISTRATION OF GERMPLASM

The male components of the population include 134 varieties and 32 breeding lines from 11 African countries and a male sterile source. Source material included:

Cameroon

I.S. 511

Sudan

I.S. 9290

Camerouns

I.S. 3574

Sorgho 137-64

Nigeria

Ex. Sokoto

Guinea

51-69

Pons

West African Based Composite

I.S. 9290

Upper Volta

I.S. 3574

Sorgho 29

I.S. 6991

The named varieties are recent developments from our hybridization program or are improved selections from various. The components with numbers were not used in breeding programs while those with I.S. numbers were selected for their potential as breeding stocks. The components from the major sorghum groups. Only plants were selected from crosses of Short Kafir, 'Kafir', 'Hegari' X Farafara, and 'Feterita'. To these selections was added that from cross 'B Combine Kafir-60' X 'Farafara' X Farafara, and the seed of these selections was added that from the cross 'B Combine Kafir-60' X population was random mated through four cycles of bulking seed set from the late male sterile plants. WABC population was formulated by the addition of IS 6882, IS 7452, IS 2816, IS 12625, IS 511, and 502. The male-sterile source for PR1BR was a male sterile line of Striga hermontheca. Each component was crossed in Puerto Rico in June 1975. Contributed by the Florida Exp. Stn., Journal Series No. 5917.