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3-1984

Registrationo f NP22 Sudangrass Germplasm

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Gorz, Herman J.; Haskins, Francis A.; Kindler, S. D.; and Sotomayor-Rios, A., "Registrationo f NP22 Sudangrass Germplasm" (1984). *Agronomy & Horticulture -- Faculty Publications*. 224.
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Piper following selection for resistance to the C-biotype greenbug [*Schizaphis graminum* (Rondani)] and to maize dwarf mosaic virus. The *ms₃* gene was obtained from other Kansas lines that resulted from an initial cross and one backcross of several sudangrass cultivars to NP2B, a random-mating population of grain sorghum [*Sorghum bicolor* (L.) Moench]. Male-sterile segregates from the Kansas lines were hand crossed for two generations to selected individual plants of low dhurrin content, most of which were from the Piper-derived lines. The best low-dhurrin segregates from these crosses were then random mated for three generations. Each random mating included the addition of bulked selfed seed of the best low-dhurrin lines available at that time to provide a more diverse pollen source. After the third random mating 220 S₁ families were assayed for dhurrin content, and equal volumes of seed of the 100 S₁'s lowest in dhurrin were composited and planted in isolation for seed increase. The released bulk is a composite of all seed harvested.

The hydrocyanic acid (HCN) potential of field-grown plants of NP22 has not been determined, but use of the spectrophotometric assay with first leaves from young seedlings indicated that NP22 seedlings averaged 318 ± 14.3 ppm HCN (fresh weight basis) compared to 367 ± 16.8 for Piper and 526 ± 10.4 for 'Greenleaf' seedlings grown in the same test.

Seed of NP22 will be maintained and distributed in small quantities by the Dep. of Agronomy, Univ. of Nebraska, Lincoln, NE 68583.

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References and Notes

1. Gorz, H.J., W.L. Haag, J.E. Specht, and F.A. Haskins. 1977. Assay of *p*-hydroxybenzaldehyde as a measure of hydrocyanic acid potential in sorghums. *Crop Sci.* 17:578-582.
2. Supervisory research geneticist, USDA-ARS; George Holmes professor of agronomy, Dep. of Agronomy, Univ. of Nebraska, Lincoln, NE 68583; research entomologist, USDA-ARS, Lincoln, NE; and supervisory research agronomist, USDA-ARS, Mayaguez, PR 00709, respectively. Registration by the Crop Sci. Soc. of Am. Cooperative investigations of USDA-ARS and the Nebraska Agric. Exp. Stn. Published as Paper no. 7095, Journal Series, Nebraska Agric. Exp. Stn. Accepted 28 Oct. 1983.

REGISTRATION OF NP22 SUDANGRASS GERMPLASM

'NP22' SUDANGRASS [*Sorghum bicolor* (L.) Moench] [formerly *S. sudanense* (Piper) Staph] (Reg. No. GP138), a random-mating population carrying the *ms₃* gene and selected primarily for low dhurrin content, is generally similar in appearance to 'Piper' sudangrass with mostly dry stalks (white midrib) and purple plant color. Seed color is heterogeneous and includes straw, sienna, mahogany, and black glumes. NP22 was developed cooperatively by USDA-ARS and the Nebraska Agricultural Experiment Station and released in May, 1982.

NP22 resulted from the transfer of sudangrass germplasm that had been selected for low dhurrin content into a random-mating population containing the *ms₃* gene. The selection of individual low-dhurrin seedlings was based on a spectrophotometric procedure (1) that did not destroy the seedlings. These selections were made in several generations of self- and open-pollinated progeny of sudangrass germplasm obtained from the Wisconsin and Kansas Agricultural Experiment Stations. The Wisconsin lines served as the primary source of low dhurrin content and were derived from the same breeding program that gave rise to the cultivar Piper. The Kansas lines were derived from