

## Registration of NP26 Sorghum Population

NP26, a random-mating sorghum [*Sorghum bicolor* (L.) Moench] population (Reg. no. GP-383, PI 583834), was jointly developed by the USDA-ARS; the University of Georgia, Georgia Agricultural Experiment Station; and the Agricultural Research Division, Institute of Agriculture and Natural Resources, University of Nebraska. It was released in March 1994. This unique population, derived from the broadly based random-mating population NP20BR (1), has resistance to anthracnose [caused by *Colletotrichum graminicola* (Cesati) G.W. Wilson].

NP20BR, a composite of several populations with various grain quality attributes including high protein content, high lysine, and yellow endosperm, was subjected to one cycle of selection for metabolizable energy prior to release. NP20BR contained a small frequency of the antherless gene (*al*), but the primary male-sterility gene for recombination was *ms<sub>3</sub>*. NP26 was developed from NP20BR using five cycles of recurrent selection for disease resistance [primarily anthracnose pathotypes common to Georgia (2)]. For each cycle of selection in NP20BR, 10 to 100 of the most disease-resistant plants were selected at Griffin, GA, and equal amounts of open-pollinated seed were bulked from each selection. The bulk was grown in isolation at Mead, NE, where 45 to 200 male-sterile panicles were tagged in each cycle of random mating throughout anthesis. Equal amounts of outcrossed seed from the selected male-sterile plants were bulked, and the bulk returned to Georgia for another cycle of selection. The antherless trait has not been observed in NP26, but a small frequency (<5%) of *al* could still be present. Frequency of the *ms<sub>3</sub>* gene is approximately 2 *ms<sub>3</sub>*:1 *MS<sub>3</sub>* in NP26.

NP26 has improved anthracnose resistance and much higher yields at Griffin when compared with NP20BR. At Griffin, yield was equivalent to ATx399/RTx430. At Mead, no differences in yield or disease resistance were observed between NP26 and NP20BR during 1992. NP26 reached 50% anthesis 5 d later than NP20BR at Griffin, and 11 d later than NP20BR at Mead. At Mead, NP26 was much more variable for height and days to 50% anthesis than NP20BR.

NP26 should have value as a source of high grain quality in an anthracnose-resistant population. Since NP20BR is known to provide a higher frequency of R lines than B lines with inbreeding, a similar ratio of R to B lines should be expected when self-pollinating within NP26. The population also offers a diverse germplasm base for selecting parental lines in a range of environments.

Seed of NP26 will be maintained and distributed by the USDA-ARS-NPA Wheat, Sorghum, and Forage Research Unit, Lincoln, NE. Germplasm amounts will be provided without cost to each applicant on written request. Recipients of seed are asked to make appropriate recognition of the source of the germplasm if used in development of a new population, parental line, cultivar, or hybrid.

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### References and Notes

1. Ross, W.M., J.W. Maranville, G.H. Hookstra, K.D. Kofoid, and G.D. Tiffany. 1987. Registration of six sorghum germplasm random-mating populations. *Crop Sci.* 27:614.
2. Cardwell, K.F., P.R. Hepperly, and R.A. Frederiksen. 1989. Pathotype of *Colletotrichum graminicola* and seed transmission of sorghum anthracnose. *Plant Dis.* 73:255-257.
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