REGISTRATION OF NDSAB(MS)C8(LM)C3, NDSD(FS)C1(LM)C4, AND NDSM MAIZE GERMPLASMS

THREE MAIZE (Zea mays L.) (Reg. no. GP-227, PI 542099; GP-228, PI 542100; and GP-229, PI 542101) breeding populations developed at the Agricultural Experiment Station, North Dakota State University, Fargo, were released in February 1990 for breeding programs developing germplasm for short-growing-season areas. Breeder seedstocks are maintained by the North Dakota Agric. Exp. Stn. and can be obtained in germplasm quantities (200 kernels) from H.Z. Cross, Crop and Weed Sciences Dep., North Dakota State University, Fargo, ND 58105.

NDSAB(MS)C8(LM)C3 (Reg. no. GP-227) is a yellow dent synthetic developed from NDSAB(MS)C8 (GP-208, PI 533626) by three cycles of selection for low ear moisture at approximate physiological maturity using the selection procedure described by Cross et al. (7). Equal numbers of seeds from 30 ears (half-sib families) were composited to give an improved population each cycle. Selection intensity was ≈10% from among plants evaluated for ear moisture content at 40 d post pollination. NDSAB(MS)C8(LM)C3 averaged 51.7 g kg⁻¹ lower ear moisture at harvest and 10.4% less root lodging than the previously released version, NDSAB(MS)C8, but maintained similar yield and stalk lodging resistance in tests averaged across nine environments in 1988 and 1989. NDSAB(MS)C8 was developed from NDSAB by eight cycles of mass selection based on dried grain yield per unlodged plant (6). NDSAB was derived from 20 full-sib families between NDSA and NDSB, synthetics released in 1979 (1,2).

NDSD(FS)C1(LM)C4 (Reg. no. GP-228) is a yellow dent synthetic derived from NDSD(FS)C1 (GP-135) by four cycles of selection for low ear moisture at approximate physiological maturity using the selection procedure described by Cross et al. (7). Seed was bulked from 30 ears (half-sib families) with the lowest ear moisture content each cycle to give an improved population. Selection intensity was ≈10% from among plants evaluated for ear moisture content at 40 d post pollination. NDSD(FS)C1(LM)C4 averaged 71.0 g kg⁻¹ lower ear moisture at harvest and 10.4% less root lodging than the previously released version, NDSD(FS)C1, but did not differ for yield and lodging resistance when averaged over nine environments. NDSD(FS)C1(LM)C4 seems to be equal to or better than the previously released versions—they should be promising as productive source populations—ND247 and ND258 were developed from NDSD(FS)C1, and NDSAB(MS)C8(LM)C3 and NDSG(MS)C8 have been the highest yielding synthetics in previous tests (5), indicating that improved versions should be capable of producing early, high-yielding hybrids. NDSM had lower ear moisture than other synthetics and the commercial check hybrids and had high yields and low ear moisture, indicating that it is a promising source population with a high potential for producing early inbreds with exceptional lodging resistance. NDSM synthetics appear to be early AES200 maturity.

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References and Notes


REGISTRATION OF B96 GERmplasm Line OF MAIZE

INBRED B96 (Reg. no. GP-223, PI 270297) maize (Zea mays L.) inbred line known 17 years as 41:2504B. It originated from J.A. Schacht's program at the Institute of Genetics, Buenos Aires, Argentina. H.K. Hayes, University of Minnesota, in 1942 and gave a sample to USDA-ARS-Iowa State University Maize Breeding Project to transfer resistance from B96 to several susceptible inbreds with good agronomic characteristics. This effort succeeded in the development and release of several resistant inbred lines for resistance from B96 to several susceptible inbreds with good agronomic characteristics. In 1950, breeding was started by the USDA-ARS Research Unit, Toledo, OH, and today, B96 is a widely grown hybrid in the United States and Europe.


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