REGISTRATION OF PARENTAL LINES

REGISTRATION OF ND265 PARENTAL LINE
OF MAIZE

ND265 (Reg. no. PL-154, PI 546494) is a yellow dent maize (Zea mays L.) inbred line developed at the Agricultural Experiment Station, North Dakota State University, Fargo. ND265 (tested as ND85-18) was selected from NDSA(FS)C2, an improved version of NDSA. NDSA was developed by intercrossing eight elite, early-maturing inbreds that had been selected for good general combining ability and intermating for two generations (1). NDSA(FS)C2 was developed by two cycles of reciprocal full-sib selection with NDSB, a synthetic released in 1979 (1), as the reciprocal tester population. The S1 parent of ND265 was selected on the basis of its full-sib family performance. It was self-pollinated for eight generations, with selection for desired plant and ear traits. This line was evaluated for yield and agronomic performance as a line per se and in hybrid combinations. ND265 was released in March 1989 because of its demonstrated potential to produce early hybrids with high yield to maturity ratios. This inbred is capable of producing hybrids adapted to short-season areas such as central and eastern North Dakota.

ND265 typically produces medium-tall plants with ears slightly below the midpoint of the stalk. Plants have medium-long, narrow leaves and moderately good extrusion of the tassel above the flag leaf. Long slender ears with 10 to 14 rows of small kernels are borne on short shanks. ND265 silks = 4 d earlier than CM105 and is AES200 maturity. At Fargo in 1988, ND265 exhibited below average grain yields, much below average ear moisture at harvest, low tillering, and no smut [incited by Ustilago zeae (Beckm.) Unger] or stalk lodging (2).

ND265 was tested in four hybrid combinations across two environments in 1986 and eight hybrid combinations across five environments in 1988. This line produced highest yields in crosses with ND301 and ND240 in 1986 and with ND474 and A654 in 1988 (2). These four hybrids with ND265 produced grain that was drier at harvest, yet yields were comparable to those of commercial check hybrids Pioneer brand 3978 and Topfarm brand TFSX87. ND265 also showed good overall performance in hybrids with ND246 and CM105. Estimates of general combining ability (GCA) across five environments in 1988 indicates that, of seven standard inbreds tested in a diallel with ND265, only ND257 had significantly better GCA effects for low harvest moisture than ND265, and only ND250 had better GCA effects for grain yield. No line had significantly better GCA effects for root lodging, but ND246, CM105, ND256, and ND474 had better GCA effects for stalk lodging resistance than did ND265.

Breeder seedstocks are maintained by the North Dakota Agricultural Experiment Station and can be obtained in Fargo in 1988, ND265 exhibited below average grain yields, much below average ear moisture at harvest, low tillering, and no smut [incited by Ustilago zeae (Beckm.) Unger] or stalk lodging (2).

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