REGISTRATION OF PARENTAL LINE OF MAIZE

ND261 (Reg. no. PL-97) (PI 510674) is a yellow dent maize (Zea mays L.) inbred line developed at the Agricultural Experiment Station, North Dakota State University, Fargo, ND. This line was evaluated for yield and agronomic performance as a line per se and in hybrid combinations. Inbred ND261 was released in March 1987 because of its apparent potential to produce early hybrids with high yields, low grain moisture at harvest, and high levels of lodging resistance. It should be capable of producing hybrids adapted to short-season areas such as central and eastern North Dakota. Breeder seedstocks are maintained by the North Dakota Agricultural Experiment Station and can be obtained in germplasm quantities (50 kernels) from H.Z. Cross, Agronomy Department, North Dakota State University, Fargo, ND 58105.

ND261 was selected from NDSD(FS)C1 (1). NDSD(FS)C1 was produced by one cycle of reciprocal full-sib selection from NDSD, a synthetic developed at North Dakota State University as a potential source of inbreds with improved stalk lodging resistance (2). ND261 was self-pollinated for eight generations with selection for desired plant and ear traits. This inbred silks about 4 d later than ND246 at Fargo. ND261 typically produces medium-height plants with ears below the mid-point of the stalk. Plants have medium-long, moderately wide leaves and medium-sized tassels. Ears with 16 to 18 rows of small kernels are borne on rather long shanks. ND261 is AES200 maturity in terms of the North Central Corn Breeding Research Coordinated Trials classification system. In a 1984-85 experiment, ND261 had average grain yield, no root or stalk lodging, and high grain moisture.

ND261 was tested as one of five inbreds in an experiment grown in six environments at the North Dakota State University Experimental Farm, Fargo, ND, in 1986. With respect to test weight, none of the line-by-environment interaction (GCA) effects better than those for ear height. The traits evaluated (grain yield, grain moisture, stalk resistance, stalk lodging resistance, GCA effects for grain yield were significant in the environments CM105, ND246, ND250, ND256. GCA effects for low grain moisture were significant in the environments A654, CM105, ND250, ND256. GCA effects for low stalk lodging were significant in the environments CM105, ND246, ND250, ND256.

Reference:

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REGISTRATION OF MAIZE PARENTAL INBRED LINES NC252, NC254, AND NC256

Parental lines NC252, NC254, and NC256 (Reg. no. PL-98 [PI 511309], PL-99 [PI 511310], and PL-100 [PI 511311], respectively) are yellow corn (Zea mays L.) inbreds developed cooperatively by the North Carolina Agricultural Research Service and the USDA-ARS; each demonstrates good general combining ability and reasonable lodging resistance, both equivalent to or better than their parents (B73 and Pa91) under North Carolina conditions.

NC252, NC254, and NC256 are B73-type lines with good seed quality and standability. They were independently derived from B73 × (B73 × (B73 × Pa91)) by selfing in the ear-to-row system and tested as BB11, BB15, and BB25, respectively. Pa91 was chosen as a parent on the basis of ear and seed quality. Emphasis during traditional pedigree selection was on ear height and yield. These lines are improved over B73 and the parent NC254 is a somewhat poorer parent than NC252.

Yields of each inbred are generally equal to, or under North Carolina conditions, equal to or better than, the yield of the hybrids derived from NC252. These lines can be crossed with inbreds and hybrids developed in North Carolina to produce hybrid combinations with improved yield, ear height, and ear standability.

Seeds are available in 50 g quantities from the USDA GRIN, Plant Genetic Resources Unit, Beltsville, MD 20705-2350, or from the North Carolina Agricultural Research Service, Raleigh, NC 27615.

M. M. GOODMAN, D. L. MILLER

Reference: