REGISTRATION OF PARENTAL LINES

REGISTRATION OF SD42 PARENTAL LINE OF MAIZE

SD42 (Reg. no. PL-95) (PI 508277) is a yellow dent maize (Zea mays L.) parental line developed at the Agricultural Experiment Station, South Dakota State University, Brookings. This line was evaluated for agronomic performance and in hybrid combinations for yield and moisture. SD42 was released in March 1986, because of its potential to produce competitive hybrids for central and southern South Dakota.

SD42 was derived by selfing an individual plant of the cross SDP232 × H96. Selfing was practiced for 10 generations with selection for desirable plant, ear, and root types. SD42 was evaluated for 5 yr at Brookings, and as a line, would be considered intermediate to late flowering because it silked 2 days after A632, 5 days after A619, and 8 days after CM105 and A654.

At Brookings, plants are approximately 1.50 m tall with ear placement about 0.85 m from the ground. It is dark green in appearance and has average (10 cm) width leaves, average to large tassels, and a red cob. Ear length is about 15 cm and ears are borne on 18-cm shanks. There are 16 to 18 rows of medium-sized kernels on each cob. Moisture content of the seed generally has averaged 18%, 60 days after pollination. It has good vigor, average ear fill, good to excellent stalk strength, average stay green, very loose husks, stiff stalks, and average root strength. It combines well with A632 producing a 5-yr average of 6.72 Mg ha⁻¹, compared to 7.10 Mg ha⁻¹ for Pioneer 3901 and 6.33 Mg ha⁻¹ for Pioneer 3732 when tested at Brookings. Full location and year data are available on request.

Corn borer (Ostrinia nubilalis Hübn er) resistance ratings on a 1 to 9 scale averaged 3.33 in trials conducted in 1984 to 1986. SD42 has good resistance to northern corn leaf blight [caused by Exserohilum turcicum (Pass.) Leonard & Sugis] and resistance to Diplodia stalk rot [caused by Diplodia maydis (Berk.) Sacc.]. Breeder seedstocks are maintained by South Dakota Foundation Seeds and can be obtained in germplasm quantities (50 kernels) from South Dakota State University Foundation Seed, Box 2125, Brookings, SD 57007.

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References and Notes

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REGISTRATION OF B89 PARENTAL INBRED LINE OF MAIZE

INBRED B89 (Reg. no. PL-96) (PI 509542) is a yellow, dent maize (Zea mays L.) inbred line developed cooperatively by the Iowa Agriculture and Home Economics Experiment Station and the USDA-ARS. The line was released in 1987 because of its potential value in the production of hybrid seed and in breeding programs of the hybrid seed industry. Breeders seed of the line, produced by self-pollination, is maintained by the Iowa Agriculture and Home Economics Experiment Station and distributed (100 seeds per sample) by the Committee for Agricultural Development, Department of Agronomy, Iowa State University.

Inbred B89 was developed from a population of 'Iowa Stiff Stalk Synthetic' [BSSS(R)C7] that was improved in a reciprocal recurrent selection program for seven cycles (1). The other population in the recurrent selection program was 'Iowa Corn Borer Synthetic no. 1' [BSCB1(R)C7]. The line was developed by selection and self-pollination in the ear-to-row system at a relatively high plant density (approximately 59,000 plants ha⁻¹) for more than eight generations. The first hybrid evaluation was in an S₃ plant × BSCB1(R)C7 test-cross in the reciprocal recurrent selection program, and evaluations with inbred line testers have continued in successive generations of selfing, beginning with the S₁ line. In evaluations for hybrid performance at four locations in south central and southern Iowa for 3 yr, 1984–1986, its best performance was in crosses with inbred Mo17 (Iowa Agriculture Experiment Station strain). Single-cross B89 × Mo17 yielded 4% more than B73 × Mo17 and had 8 g kg⁻¹ less grain moisture. The incidence of root lodging was 13.8 percentage points less for B89 × Mo17, and counts for broken stalks and dropped ears were slightly lower. Inbreds B73 and B89 are not sister lines; B73 × B89 yielded only 5.0% less than B73 × Mo17.

Dates of tassel shedding and silk emergence for B89 are similar to those for B73. Pollen and seed productions are good under moderate climatic conditions. Plant and ear heights for B89 are approximately 35 cm lower than for B73. Plants produce one ear per stalk at moderately high plant densities and usually do not have a second ear even at low densities. Kernels have greater depth than width, tend to be angular, smooth dent, and intermediate yellow. The seed has good quality, and kernel weight and yield are slightly less than for B73. The ear has a red cob and is relatively short and thick; there are 20 kernel rows per ear, and the length is shorter than for B73. With artificial infestations of first-generation European corn borer (Ostrinia nubilalis Hübn er), the resistance rating is 3 (1 = highly resistant and 9 = highly susceptible); however, it is susceptible to second-generation European corn borer. Under Iowa conditions, B89 has good plant health. It seems to be a line that can be used as either male or female in the production of single-cross seed. Maturity classification is AES800.

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REGISTRATION OF PEARL MILLET INBRED PARENTAL LINES, TFT 85Dₐ, AND TFT 85Dₐ, TIFT 85Dₐ, (Reg. no. PL-16) (PI 508273) and TIFT 85Dₐ, (Reg. no. PL-17) (PI 508274) pearl millet [Pennisetum glaucum (L.) R. Br.] inbreds were developed cooperatively by USDA-ARS and the University of Georgia, Coastal Plain