Registration of B97 and B98, Two Parental Inbred Lines of Maize

Arnel R. Hallauer  
*Iowa State University*, hallauer@iastate.edu

Kendall R. Lamkey  
*U.S. Department of Agriculture*, krlamkey@iastate.edu

W.A. Russell  
*Iowa State University*

Paul R. White  
*Iowa State University*

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Registration of B97 and B98, Two Parental Inbred Lines of Maize

Abstract
Inbreds B97 (Reg. no. PL-169, P1 564682) and B98 (Reg. no. PL-170, P1 564683) are yellow dent maize (Lea mays L.) lines developed cooperatively by the Iowa Agriculture and Home Economics Experiment Station and the USDA-ARS. The lines were released (on 20 Mar. 1992) because of their potential value in the production of hybrid seed and as sources of germplasm in pedigree selection breeding programs of the hybrid seed industry.

Disciplines
Agricultural Science | Agronomy and Crop Sciences | Plant Breeding and Genetics

Comments

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5. Crop Pests Res. Program, ICPE, P.O. Box 30772, Nairobi, Kenya. Registration by CSSA. Accepted 31 July 1993. *Corresponding author.

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Registration of Fasciated Soybean Germplasm Line BARC-10

Soybean [Glycine max (L.) Merr.] germplasm line BARC-10 (Reg. no. GP-157, PI 572270) was developed by the USDA-ARS at Beltsville, MD, and released in 1993 for subsequent cycles of improvement of fasciated soybean and for studies on expressivity and penetrance of the ff genes.

BARC-10, evaluated as MD87L-3882(2), was developed from the cross "Hobbit" (1)/L78-2206 made by ARS at Urbana, IL in 1981. L78-2206 was developed from the cross L67L-113 [C1128 ("Wabash") (3)"Hawkeye"] (3)/L58-2080 (Hawkeye/"Lincoln") (3)/3/PI 243541. The original source of the recessive gene f conditioning fasciation, PI 243541, exhibits a broadened and flattened stem with most of the pods at the stem tip.

BARC-10 is an F2 line of late Group IV maturity, the highest-yielding of all reselections from 3000 F2 lines from six crosses of Hobbit × first cycle improved fasciated parental lines (2). The mean seed yields of BARC-10 and "Ripley" in eight environments at Landisville, PA and Beltsville and Queenston, MD, 1988-1992, were 3131 and 3353 kg ha⁻¹, respectively [LSD (0.05) = 214 kg ha⁻¹]. In these same environments, BARC-10 was 5 d later in maturity and 7.5 cm taller than Ripley. Lodging and seed quality scores were 2.0 and 1.5 for BARC-10 and 1.4 and 1.3 for Ripley. Seed weights of BARC-10 and Ripley were 144 and 136 mg seed⁻¹, respectively. Seed protein and oil of BARC-10 were similar to those of commercial cultivars in Middle Atlantic Tests (P.B. Cregan, personal communications, 1990,1991). BARC-10 has tawny pubescence and yellow seeds with black hila.

The penetrance and expressivity of the ff genes in BARC-10 are greatly reduced: most of the plants exhibited only slightly broadened stem tips with most of the pods at the stem tip but with some pod development distributed irregularly along the main stem. Possibly selection for higher yields included selection of modifying genes that decrease the penetrance and expressivity of the ff genes. F2 populations from crosses between such attenuated fasciated genotypes and determinate lines Hobbit, Ripley, "Essex", and "Dorman" have exhibited the complete range of fasciated phenotypes (R.C. Leffel, unpublished data).

Seeds of BARC-10 (100 seeds) may be obtained from the USDA-ARS Soybean and Alfalfa Res. Lab. (4) for at least five years.

R. C. LEFFEL* (4)

References and Notes


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REGISTRATION OF PARENTAL LINES

Registration of B97 and B98, Two Parental Inbred Lines of Maize

Inbreds B97 (Reg. no. PL-169, PI 564682) and B98 (Reg. no. PL-170, PI 564683) are yellow dent maize (Zea mays L.) lines developed cooperatively by the Iowa Agriculture and Home Economics Experiment Station and the USDA-ARS. The lines were released on 20 Mar. 1992 because of their potential value in the production of hybrid seed and as sources of germplasm in pedigree selection breeding programs of the hybrid seed industry.

Inbred B97 was developed from a population of Iowa Corn Borer Synthetic No. 1 (BSCB1) after nine cycles of reciprocal recurrent selection [BSCB1(R)C9-2] (1). The other population in the recurrent recurrent selection program was Iowa Stiff Stalk Synthetic lines than with lines that include Lancaster Sure Crop germplasm. Based on 17 year lo-
was increased from the original cross without further within-specific cross (Cross 17) between two plants. Line C762-17 were widely used as parental lines. C762-17 traces to one Population-755 was released as C310. C546 and C718 on the basis of early testing for curly top re-
yellows virus complex) and lettuce infectious yellows virus. It demonstrated moderate resistance to bolting and beet western
dew, caused by Erwinia carotovora or tolerance to virus yellows (beet yellows and beet western
sucrose concentration traits. As a line, it has a small, compact,
ity (hybrid performance) for root and sugar yield. It has low
(A-.aa). It (A-.aa) regate at a low frequency for genetic male sterility
self-fertile (Sf) line that will seg-
type, green hypocotyl
roduced and is available. C762-17 is a monogerm
(O- mm), developed and is available. C762-17 is a monogerm
line was released in 1989 for potential use as a parent in hy-
brid development, 23 Curtiss Hall, Iowa State University, Ames, IA
and Home Economics Experiment Station and distributed (100
seeds per request) by the Committee for Agricultural Devel-
monogerm (mm) and the virus yellows complex (beet yellows and beet western
color. C790-6 and C790-15 segregate for hypocotyl color. All
have fair to moderate resistance to bolting, curly top virus,
sterility C790-54 is homozygous for red hypocotyl (aa).
and they segregate for genetic male
erm testers and have adaptation throughout California.
ARS in cooperation with the Beet Sugar Development Foun-
dation and the California Beet Growers Association. These
lines are known to combine well with multig-
brids. These lines are known to combine well with multig-
dation and the California Beet Growers Association. These
Sugarbeet (Beta vulgaris L.) parental line C762-17 (Reg. no.
Breeder seed is maintained by the USDA-ARS and will be
provided to Sugarbeet breeders in quantities adequate for re-
backcrossed to produce a CMS near-equivalent, and retested
hybrid performance and reaction to disease can be identified
in variety and disease nursery trials. The performance of this
line in experimental hybrids and disease nurseries suggests that
a two-ear tendency and produce at least one good ear under
heat and drought stress. Yellow, flinty kernels are produced
in the plants' good health under Iowa conditions. Plants have
average resistance to plant diseases and to first-
and second-
Registration of C762-17, a Parental Line
of Sugarbeet

Registration of C790-6, C790-15, and C790-54
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