 Registration of Sugarbeet Germplasm Lines C78, C80, and C82

Sugarbeet (Beta vulgaris L.) germplasm lines C78 (Reg. no. GP-182, PI 593671), C80 (Reg. no. GP-183, PI 593672), and C82 (Reg. no. GP-184, PI 593675) were developed by the USDA-ARS in cooperation with the Beet Sugar Development Foundation and the California Beet Growers Association. These lines are diploid (2x = 18), multigerm, self-sterile, and segregate for hypocotyl color. They combine multiple disease resistance and segregate for resistance to rhizomania (Rz). C78 was derived from composite crosses among six breeding lines and selected for rhizomania resistance into C31/6, an advanced line from C31 (1). Line C54 was provided to sugarbeet researchers in quantities adequate for reproduction, upon written request to the author. Also available are bulks (50 g) of fertile or male-sterile panicles of the corresponding Cycle 1 MS1 of all four populations.

C80 is similar to C54, a broad-based population developed as line Y54 in the multiple disease resistance program. It was derived from composite crosses among six breeding lines that collectively comprised germplasm from C31 (5), 32%, and C01 (1), 23%. Except for the choice of C01 as recurrent parent, C80 was developed similarly to C78 but under better environments prone to final water stress, it is an average of 5 d earlier in flowering than AD9B(MS1)C2, AD11B(MS1)C2, or Northrup King hybrid NK-180.

Breeder seed (50 g) composited from the male-sterile panicles of the four populations may be obtained from the corresponding author. Also available are bulks (50 g) of fertile or male-sterile panicles of the corresponding Cycle 1 MS1 of all four populations.


References and Notes

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Published in Crop Sci. 37:1036-1037 (1997).

Registration of Sugarbeet Germplasm Lines C78, C80, and C82

Sugarbeet (Beta vulgaris L.) germplasm lines C78, C80, and C82 were released in 1994. With line improvement and progeny evaluation procedures, it should be feasible to extract parental lines from this material relatively quickly to obtain various new combinations of disease and bolting resistance and traits for Bolting conditions. Based on yield, disease, and bolting data, eight families were selected based on rhizomania resistance into C31/6, an advanced line from C31 (1), line R76 was developed. The third-cycle synthesis of each of these eight half-sib families was evaluated as breeding lines similar to R678, R578, R278, and R278Y.

C80 is similar to C54, a broad-based population developed as line Y54 in the multiple disease resistance program. It was derived from composite crosses among six breeding lines that collectively comprised germplasm from C31 (5), 32%, and C01 (1), 23%. Except for the choice of C01 as recurrent parent, C80 was developed similarly to C78 but under better environments prone to final water stress, it is an average of 5 d earlier in flowering than AD9B(MS1)C2, AD11B(MS1)C2, or Northrup King hybrid NK-180.

Breeder seed (50 g) composited from the male-sterile panicles of the four populations may be obtained from the corresponding author. Also available are bulks (50 g) of fertile or male-sterile panicles of the corresponding Cycle 1 MS1 of all four populations.


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