REGISTRATION OF C35/1 AND C35/2
SUGARBEET GERMLASMS

SUGARBEET (Beta vulgaris L.) germplasms C35/1 (Reg. no. GP88) and C35/2 (Reg. no. GP89) were released in 1983. These lines were developed by USDA-ARS, in cooperation with the California Beet Growers Association, Ltd., and the Beet Sugar Development Foundation. Both of these lines have a high level of resistance to bacterial vascular necrosis and rot incited by Erwinia carotovora betavasculorum and moderate resistance to powdery mildew incited by Erysiphe polygoni D. C. type (= E. betae Weltz.). Although not tested for commercial use, one or the other of these lines could have the potential to supersede C36 (Reg. no. PL13) to produce mildew resistant ‘US H11’ type hybrids. Seed stock will be maintained at the U. S. Agric. Res. Stn., P. O. Box 5098, Salinas, CA 93915. Small quantities of seed will be provided to sugarbeet breeders upon written request.

C35/1 is a green hypocotyl, self-sterile, multigerm line developed from the Erwinia resistant lines derived from C13 (Reg. no. PL5) that were used to produce C36. Whereas C36 is highly susceptible to E. polygoni, C35/1 is moderately resistant. C35/1 was developed by a combination of mass and selection based on progeny testing from greenhouse and field evaluations for powdery mildew resistance (1). After two cycles of mass selection in the greenhouse for resistance, half-sib families were evaluated in field plots and individual plants were selected from one family. The fourth cycle of selection for resistance was a greenhouse mass selection. In a fifth cycle, individual plant selection for yield and sucrose was made from a field plot where powdery mildew was present. This line is similar to C36 in resistance to Erwinia, virus yellows, and bolting and should be similar in resistance to curly top, but this has not been tested. This breeding line should find utilization where resistance to E. polygoni, Erwinia, curly top virus, virus yellows, and bolting are desirable in developing lines for commercial sugarbeet production.

C35/2 is a sister line of C35/1 but derived from a different half-sib family in the third cycle of selection. Otherwise, the selection procedures were the same as for C35/1.