selection for virus-yellows resistance and sugar yield. C22 is moderately resistant to virus yellows and bolting but possesses only fair resistance to curly top. C22 has good root yield but only average sucrose concentration. Its combining ability for sugar yield is similar or slightly better than that of C17.

C10 (Reg. No. GP 24) is a self-sterile, multigerm line derived by mass selection for yellows resistance from a cross between C563 and a multigerm, type-O line with fair resistance to virus yellows. From four multigerm, type-O plants, the line was advanced six times by bulk increases, including one cycle of mass selection for yellows resistance. C718 is moderately susceptible to virus yellows and has moderate to good resistance to curly top and bolting. Field tests have shown that C718 has very good combining ability for root and gross sugar yield.

C718 CMS (Reg. No. GP 26) is a cytoplasmic male-sterile equivalent of C718 derived from the fifth backcross to the CMS source.

C706 (Reg. No. GP 27) is a self-sterile, red hypocotyl, monogerm line derived from a cross between C563 and a multigerm, type-O line with high resistance to curly top. This line has been used to develop a collection of miscellaneous high-sugar lines crossed with the Polish variety, ‘Udca’. A limited quantity of cultivar ‘US20’ has consistently been 1 to 3 percent higher than that of any other inbred tested. It has excellent general combining ability and has consistently increased sugar percentage in all hybrids for which it was used as a parent. This inbred is equal to cultivar ‘US33’ in curly top resistance. It is susceptible to cercospora leaf spot.

C705 CMS (Reg. No. GP 28) is a cytoplasmic male-sterile equivalent to C705, derived from the fifth backcross to the CMS source.

L36 (Reg. No. GP 33) is an S5, green hypocotyl, self-sterile, monogerm, Type O line derived from a C1586 population. This line resulted from four generations of inbreeding and selection from the greenhouse and field for curly top resistance. L36 is rated 1.5 to 2 on the 1 to 9 scale for curly top, and it shows good combining ability for root yield and sugar percentage. It is about equal to cultivar ‘US41’ in curly top resistace with a rating of 5 on the 1 to 9 scale. This line has also shown excellent combining ability for low respiration rate during root storage.

C563 CMS (Reg. No. GP 35) is a cytoplasmic male-sterile equivalent of L36 developing by crossing L35 with a male-sterile line and backcrossing four times to L35. This line has slightly more vigor than L35 and has shown excellent performance in hybrid combinations.

C705 (Reg. No. GP 30) is a Type O inbreds with high resistance to curly top. L38 has very good combining ability for root and gross sugar yield. It resulted from five generations of inbreeding and selection from a crossing of SLC129, a parent line of cultivar USH20, with a group of nematode-resistant selections received from American Crystal Sugar Company in 1960. This line has excellent general combining ability for root yield. It is equal to US41 in curly top resistance.

L38 (Reg. No. GP 38) is an S2, green hypocotyl, self-sterile, multigerm, Type O line. It is derived from a synthetic, with a complex pedigree that includes CT5 and CT9 which are multigerm, near Type O line. It is derived from a synthetic, with a complex pedigree that includes CT5 and CT9 which are curly-top-virus resistant selections; ‘GW304’, a cultivar of Great Western Sugar Company; SP6322-0, a line resistant to cercospora leaf spot and a parent line of USH20; and a curly-top-resistant selection from the cultivar US22/5. This line has good combining ability for yield, and it has curly top resistance equivalent to that in cultivar US41.

REGISTRATION OF EIGHT GERmplasm LINES OF SUGARBEET1
(Reg. Nos. GP 31 to 38)
J. C. Theurer2

Eight sugarbeet (Beta vulgaris L) breeding lines were developed by SEA, USDA, Logan, Utah. These lines were evaluated in cooperation with the Beet Sugar Development Foundation and the Utah Agric. Exp. Stn. A limited quantity of breeder seed of these lines is available for pro-rata distribution to bona fide sugarbeet breeders upon request to SEA, USDA, Sugarbeet Research, Crops Research Laboratory, UMC 63, Logan, UT.

L35 (Reg. No. GP 31) is an S5, self-sterile, green hypocotyl, Type O monogram line derived from a heterogeneous population composed for resistance to the curly top virus. This line was developed by three repeated selections for curly top resistance in an inoculated field nursery with one selection for Type O. L35 has shown outstanding resistance to all presently known races of curly top having a reading of 1 on a (resistant) to 9 (susceptible) scale. This line has been used to develop Type O combiners with high resistance to curly top.

L35 CMS (Reg. No. GP 32) is a cytoplasmic male-sterile equivalent of L35 developed by crossing L35 with a curly-top-resistant, male-sterile line, followed by three successive backcrosses to L35.

REGISTRATION OF TWO GERmplasm LINES OF SUGARBEETS1
(Reg. Nos. GP 39 to GP 40)
J. C. Theurer2

Two pollen-restorer breeding lines of sugarbeet (Beta vulgaris L) were developed by SEA, USDA, at Logan, Utah. They were evaluated as parental lines in double-cross hybrids in cooperation with the Utah Agricultural Experiment Station. A limited supply of breeder seed of these lines is available for pro-rata distribution to bona fide sugarbeet breeders upon request to SEA, USDA, Sugarbeet Research, Crops Research Laboratory, UMC 63, Logan, UT.

L60 (Reg. No. GP 39) is an S5, self-sterile, multigerm, pollen fertility-restorer inbred. It was derived from cultivar US201 by repeated hybridization to a cytoplasmic-male-sterile inbred followed by selection of plants with normal pollen fertility and excellent pollen dehiscence. This inbred has good resistance to cercospora leaf spot (caused by Cercospora beticola Sacc.), but it is highly susceptible to curly top virus disease. Pollen fertility restoration is governed by two genetic factors. In ex-

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