REGISTRATION OF CROP GERMPLASMS

REGISTRATION OF SD104, SD105, SD106, SD107, AND SD108 GERMPLASM LINES OF MAIZE

FIVE WHITE DENT inbred maize lines were developed at the Agricultural Experiment Station, South Dakota State University, Brookings, SD: SD104 (Reg. no. GP-218; PI 538240), SD105 (Reg. no. GP-219; PI 538241), SD106 (Reg. no. GP-220; PI 538242), SD107 (Reg. no. GP-221; PI 538243), and SD108 (Reg. no. GP-222; PI 538244). These lines were evaluated for agronomic performance and in hybrid combination for yield and moisture. They were released, in March 1988, because they contain genes for white kernels in genetic backgrounds not otherwise available.

These lines were developed by crossing each of several yellow dent inbred lines with SD316W, a white dent South Dakota line, then backcrossing nine times. The yellow dent lines were the recurrent female parents. Because yellow kernels pollinated with pollen carrying the gene for white endosperm (a xenia effect) can be distinguished from kernels pollinated with pollen carrying the gene for yellow endosperm, those kernels carrying the white gene were identified in each cycle without selfing. Only those kernels identified as carrying the white gene were selected to be used as male plants in the next cycle of backcrossing to the recurrent parent. In each cycle, the nonrecurrent parent was heterozygous for endosperm color. In each line, the white dent inbred was produced by selfing the ninth backcross and selecting only white kernels.

Plants of SD104, whose recurrent parent is W182B, are ~92 cm tall, with ear placement ~48 cm above the ground. Tassels are medium in size, and ears have red cobs. Ears, ~36 cm long, are borne on 15-cm shanks and have 12 rows of flinty kernels on a red cob. The line has good root strength and loose husks, but has less than optimum vigor, ear fill, and stalk strength. SD104 is AES300 maturity.

Plants of SD105, whose recurrent parent is W117, are ~112 cm tall, with ear placement ~58 cm above the ground. Tassels are medium in size. Ears, ~25 cm long, are borne on 18-cm shanks and have 14 rows of flinty kernels on a red cob. The line has good root strength and loose husks, but has less than optimum vigor, ear fill, and stalk strength. SD105 is AES300 maturity.

Plants of SD106, whose recurrent parent is A641, are ~122 cm tall, with ear placement ~61 cm above the ground. Tassels are small, and ears have red cobs. Ears are ~31 cm long and are borne on 13-cm shanks. There are 14 rows of dent kernels. The line has good root strength, vigor, stalk strength, and loose husks, but has less than optimum ear fill. SD106 is AES400 maturity.

Plants of SD107, whose recurrent parent is A634, are ~158 cm tall, with ear placement ~91 cm above the ground. Tassels are small, and ears have red cobs. Ears, borne on 15-cm shanks, are ~38 cm long. There are 14 rows of dent kernels. The line has good root strength, vigor, stalk strength, and loose husks, but has less than optimum ear fill. SD107 is AES400 maturity.