the fusarium wilt-rootknot nematode complex usually give satisfactory yields in the Southeast.

Breeder seed may be obtained by bonafide seed breeders upon written request to USDA-ARS, Pee Dee Res. and Educ. Ctr., P. O. Box 271, Florence, SC 29503.

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References and Notes

REGISTRATION OF NGSDCRW1(S2)C4 MAIZE GERMPLASM

NGSDCRW1(S2)C4 MAIZE (Zea mays L.) (Reg. no. GP 137) germplasm was released jointly by the USDA-ARS and the Agricultural Experiment Station, South Dakota State University, Brookings, in 1984.

The parent SDCRW1SYN population was synthesized in 1965 by mixing equal amounts of single-cross hybrid seed from selected matings (primarily based on flowering times) among 57 diverse germplasm stocks. The stocks included mid-season and early Corn Belt inbred lines and hybrids, germplasm from Pioneer HiBred International (including West Indian lines, broad-based Mexican lines, Zaplote lines, and Corn Belt lines with good stalk quality), unreleased breeding lines, and early inbred lines selected for root-rot resistance in South Dakota. In 1967, single-cross hybrid R802 × R109B was interplanted into the open-pollinated population to introduce the opaque-2 gene. The population was grown in isolation without conscious selection for five generations and released as early maturing "corn-rootworm composite" SDCRW1CO in 1970. This released germplasm was predominantly yellow dent. Subsequently, the population has undergone one cycle of S1 family selection [NGSDCRW1(S1)C1] followed by two cycles of S2 family selection [NGSDCRW1(2)C2 and C3] for large root size as determined by anchorage ("wiggle test") ratings (2) and by root-pull resistance measurement (1). NGSDCRW1(2)C4 was produced by selecting S2 lines from C3 on the basis of both root-damage caused by western corn rootworm (WCR, Diabrotica virgifera virgifera LeConte) larvae and root-pull resistance in previously infested (200 seeds each) of the diallel-hybrid composite also was provided until the available seed supply is exhausted.

REGISTRATION OF ND304W GERMLASM LINE OF MAIZE

ND304W (Reg. no. GP-138) is a white, dent, germplasm line of maize (Zea mays L.) developed at the Agricultural Experiment Station, North Dakota State University, Fargo. ND304W was selected from a cross of (ND408 × B73) × W23yw. It was self-pollinated for six generations with selection for desired plant and ear traits. This inbred silks about 1 day later than CM105 and about the same time as ND408 at Fargo, ND. ND304W typically produces medium-tall plants with ears borne on short shanks about midway up the stalk. The medium-long ears are thick and have 18 to 22 rows of kernels borne on a white cob. Kernels have white endosperm of a medium-hard, dent texture. ND304W is AES300 maturity.

This line was evaluated in four hybrid combinations with yellow, dent inbreds (ND245, CM105, ND301, and ND230) for yield and agronomic performance at three locations in 1983. Based on its general combining ability for high yield (similar to ND474), low grain moisture at harvest (similar to ND474), and low stalk lodging percentage (significantly

REGISTRATION OF NGSDCRW1(S2)C4

NGSDCRW1(S2)C4 MAIZE (Zea mays L.) developed at the Agricultural Experiment Station, North Dakota State University, Fargo. NGSDCRW1(S2)C4 was produced by selecting S2 lines from 

In 1983, evaluation trials at Brookings showed that root pull resistance increased with recurrent selection. Mean root-pull measurements tended to be greater in later cycles in both uninfested (225.8 ± 4.5 in CO and 241.5 ± 3.9 in C4) and infested (199.3 ± 5.4 in CO and 229.6 ± 3.8 in C4) plots. Mean root ratings of plants from infested plots ranged from 4.8 ± 0.2 in C1 to 3.7 ± 0.1 in C4. The mean root rating for the check hybrid A619 × A632 was 5.9 ± 0.2.

The results suggest that population NGSDCRW1(S2)C4 has potential for further improvement with respect to root pull resistance. It is expected to be a useful, early (AES 300–500 maturity) germplasm source for plants with good root systems, good potential for new compensatory root growth which results in good standability after root damage by WCR, and for plants with good resistance (tolerance) to feeding damage caused by WCR.

Seeds of randomly mated plants of NGSDCRW1(S2)C4 grown in isolation will be maintained and distributed in 500 seed-lot samples by the USDA-ARS, Northern Grain Insects Res. Lab., Brookings, SD 57006. Smaller seed-lots (200 seeds each) of the diallel-hybrid composite also will be provided until the available seed supply is exhausted.

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