Registration of GT-MAS:gk Maize Germplasm

MAIZE (Zea mays L.) germplasm population GT-MAS:gk (reg. no. GP-241, PI561859) is a yellow-kernel population released cooperatively by USDA-ARS and the Georgia Agricultural Experiment Stations in 1992. The original source material of this population was composited from less than one-half the kernels on a single open-pollinated ear from a hybrid of unknown parentage which appeared to be non-infected on an ear otherwise infected by Aspergillus flavus Link:Fr. The population has been maintained by bulk sibbing of at least 100 plants without selection in each generation. A sister population was also developed from the same original ear by bulk sibbing of plants generated from infected kernels.

GT-MAS:gk has consistently had lesser amounts of kernel aflatoxin contamination, whether obtained from field- or laboratory-inoculated samples, when compared with the sister population (2). Testcrosses of GT-MAS:gk with southern adapted lines have equal or less contamination than the testcrosses with its sister counterpart (1). Additionally, in tests with adapted commercial hybrids, the hybrids sustain as much or more kernel contamination than GT-MAS:gk. Furthermore, contamination of the commercial hybrid is always greater than GT-MAS:gk when protection of the husk is removed.

GT-MAS:gk is intended for use as a source of resistance to accumulation of aflatoxin in maize grain. The data on resistance have given evidence of having both a physical and chemical basis.

GT-MAS:gk is variable for most agronomic traits. Plants vary in maturity from late AES1000 to early AES1100. The population is susceptible to ear-feeding insects and has poor resistance to mold damage when ripening in humid conditions. Yield potential is good compared with other breeding populations and their crosses, while ear heights vary in maturity from late AES1000 to early AES1100. The average from 0.75 to 0.80 m and plant height varies between 1.7 and 1.8 m.

Breeder seed of GT-MAS:gk will be maintained by and supplied in 100 g lots by the corresponding author.


References and Notes


Arid Tropics (ICRISAT). This line was deposited for long-term conservation at the Genetic Resources Unit, ICRISAT, India.

S. C. Gupta, * E. S. Monyo, and S. Apparao (2)

References and Notes

2. S. C. Gupta and E. S. Monyo, SADCC/Ford Foundation Improvement Program, Bulawayo, P.O. Box 529. 1992. Registration of SDML 89107 Brown Midrib Pearl Millet Germplasm. SADCC/Ford Foundation Improvement Program, Bulawayo, P.O. Box 529.