REGISTRATION OF GERMPLASM

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 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.

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Registration of SDML 89107 Brown Midrib Pearl Millet Germplasm

SDML 89107, FORAGE PEARL MILLET [Pennisetum glaucum (L.) R. Br.] (Reg. no. GP-28, PI 561857), was developed by Southern African Development Coordination Conference (SADCC)/International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). This line was approved for registration in October 1991 by the ICRISAT Plant Materials Identification Committee as it provides a source of the brown midrib (bmr) trait which increases in vitro dry matter digestibility (IVDMD).

In an accession, IP 16493, collected from Zimnyama, Zimbabwe on 12 April 1988, a brown midrib plant was identified and seed was increased with selection by selfing. The phenotype of the $S_2$ generation was adequately uniform and harvestable seed was bulked to form SDML 89107. This bmr line has been extensively used as the non-recurrent parent for transferring the bmr trait into selected pearl millet cultivars/composites to improve IVDMD.

At 50% flowering, whole-plant IVDMD of SDML 89107 is 10.7% higher (690 g kg$^{-1}$ vs 623 g kg$^{-1}$) than that of its non-bmr counterpart while its stem IVDMD is 16.2% higher. Similar differences for whole-plant IVDMD in a bmr mutant from Purdue were previously reported (1); however, when these bmr stocks were compared with their normal counterparts, Matopos and Henderson in Zimbabwe, no differences in IVDMD of the Purdue lines were observed. SDML 89107 produced higher green fodder and dry matter yields as compared to its non-bmr counterpart.

The plant color of SDML 89107 is light green with purple nodes. The leaves are broad and intermediate in attitude with higher brown pigmentation on the leaf sheath. SDML 89107 is of medium height (1.8-2.8 m) with robust stems which are resistant to lodging. It flowers in 61 to 93 d and matures in 95 to 120 d. The anther color is purple. Spikes are medium long (27-43 cm), with thickness of 25 to 35 mm. Spikes are cone-shaped, and have short bristles. Grain is medium sized (8.3-10.3 mg grain$^{-1}$), globular, and yellow in color with a partly corneous endosperm. Seed dormancy and tolerance to mold damage when ripening in humid conditions are adequate.

Breeder seed will be maintained and supplied by SADCC/ICRISAT, Bulawayo, Zimbabwe. Duplicate seed will be positioned for long-term conservation at the Genetic Resources Unit, ICRISAT, India.

References and Notes


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Registration of Germplasm Lines Developed from Composite Crosses of Sugarbeet × Beta maritima

C48, C50, and C58 are sugarbeets (Beta vulgaris L.) germplasm lines (Reg. no. GP-140, PI 538251; Reg. no. GP-141, PI 564243; and Reg. no. GP-142, PI 560341) developed by the USDA-ARS in cooperation with the Beet Sugar Dev...