REGISTRATION OF A/BTxARG-1 SORGHUM

A/BTxARG-1 SORGHUM [Sorghum bicolor (L.) Moench] parental line (Reg. no. PL-235, PI 561072) was developed and released in 1991 by the Texas Agricultural Experiment Station, Department of Soil & Crop Sciences, Texas A&M University, College Station, TX, and Instituto Nacional de Tecnología Agropecuaria (INTA), Estación Experimental Agropecuaria, Manfredi, Argentina. The maintainer line was derived from an intentional cross between MR807, an Indian breeding stock, and BTx624. The complete pedigree is [(MR807/BTx624)bulk F1]-5-5-1-2-bk-bk-1-bk with five backcrosses into A1, cytoplasm. Ing. Agr. C. Domanski selected the original F2 and F3 plants at Manfredi, Argentina, from a germplasm observation nursery from ICRISAT (International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India) designated as B/A line Observation Nursery (BON). Seed was obtained in 1987 from INTA for the Texas Agricultural Improvement Program’s sorghum improvement program by the senior author during a visit to Manfredi. Following introduction into Texas, three additional backcrosses were made using paired plant selection to complete the sterilization of this A1, cytoplasmic—genetic male-sterile parental inbred line. A/BTxARG-1 is genetically 3-dwarf (dw,dw,dw,dw,dw), and has excellent exertion, medium white to translucent seed color, nonpigmented testa, awnless lemmas, and straw colored glumes. The line has good resistance to fusarium head blight (caused by Fusarium spp.). A/BTxARG-1 flowers at about the same time as A/BTx631, and the maintainer sheds an excellent quantity of pollen. Sterility of the A-line under bag is complete and does not appear to be affected by high or low temperature or drought. A/BTxARG-1 has tan necrotic plant color (ppQQ), and leaves exhibit a juicy midrib. The caryopses are round, have a thin mesocarp, and possess an intermediate vitreous waxy (wxwxwx) endosperm. The line has excellent tropical adaptation. The line has a good combine height and in hybrid combinations rarely produces hybrids too tall for mechanical harvest. ATxARG-1 has shown excellent general combining ability in hybrid combinations for yield, drought resistance, and general disease resistance. This line should greatly increase the possibilities for tan plant color, white semi-translucent grain, 3-dwarf sorghum hybrids for both human food use and poultry or livestock feed. Hybrids made with ATxARG-1 appear to be adapted across an array of environments in the USA, Argentina, and Africa. Furthermore, hybrids with ATxARG-1 have acceptable maturity, clear bright grain color and quality, satisfactory to superior height and standability, tropical adaptation, and improved disease resistance. Breeder seed will be maintained at Texas A&M University.

REGISTRATION OF A/BTx635 SORGHUM

‘A/BTx635’ (Reg. no. PL-234, PI 561073) is a nesnascencing, tropically adapted, short 2-dwarf sorghum [Sorghum bicolor (L.) Moench] with exceptional foliage disease resistance, food quality grain, and yield potential. It was developed in collaboration with ICRISAT (International Crops Research Institute for the Semi-Arid Tropics), CENTA (Centre de Tecnologia Agricola de Salvador), and the Texas Agricultural Experiment Station. The plants that eventually gave rise to A/BTx635 were selected originally in breeder nurseries of ICRISAT—Hyderabad, India, and designated as A-5621. A-5621 was derived from Cycle 2 of the RS/R population (see ICRISAT Annual Reports for 1973–1974 for the origin of this population) and was known in ICRISAT records as RS/R-S10-20-682-5-1. It was selected from S1 trials in the 1975 kharif season. A single selection from this S1 family was advanced to S2 in 1975 rabi, and then advanced under pedigree selection to S3 in 1978 rabi using alternate kharif and rabi nurseries. Pedigree for the line at this stage was RS/R (C2) S3 102-1-2-4-7-1-5-1. It was then bulked and advanced as such until 1979 rabi, when it was test-crossed to a cytoplasmic male-sterile line. When the testcross was grown in 1980 kharif and found to be sterile, a backcross was made on a plant-to-plant basis to convert to sterility. Seeds of the -5 pair of A and B plants were taken to CENTA in El Salvador in 1980, where four additional backcrosses were made. In 1983, seed of the pair was introduced into the Texas Agricultural Experiment Station’s Sorghum Improvement Program via ICRISAT–Mexico (LASIP). The line was found to be irregular in height when grown in Texas in 1984. Subsequent pair A/B plants were selected and continued via backcrossing to produce the line A/BTx635. This line has tan plant color, straw glumes,