REGISTRATION OF A3Tx398 SORGHUM

'A3Tx398' SORGHUM, Sorghum bicolor (L.) Moench, (Reg. no. PL117) male-sterile A-line was developed by USDA-ARS and Texas Agricultural Experiment Station and released in 1983. A3Tx398, also referred to as A3 Martin, has a cytoplasm that induces a sterility response different from that of lines with A1 (milo) and A2 (IS12662C) cytoplasms and provides an opportunity to diversify the cytoplasm and the female parentage of sorghum hybrids.

A3Tx398 was developed by crossing IS1112C, a group Durra-Subglabrescens (group no. 41-50), race Durra-(Durra-Bicolor) line from India, as a female with IS2266C. The sterile plants were backcrossed to IS2266C, and subsequent steriles were crossed to B Martin for five generations. Therefore, A3Tx398 has the cytoplasm of IS1112C and a nucleus similar to BTx398. A3Tx398 is similar in appearance to BTx398 but is not quite as uniform in height. Anthers are yellow, intermediate in size, and very rarely contain stainable pollen grains.

A3Tx398 was testcrossed to many lines and the results indicated that the A3 cytoplasm differs from A1 and A2. Nearly all lines tested produced completely male-sterile F1's when crossed onto A3Tx398. Among those tested were 'Tx430,' 'TAM428,' 'Combine 7078' (SA7078), and 'Tift Sudangrass,' all of which restore fertility to hybrids when crossed to male steriles with milo (Al) cytoplasm. When IS1112C was used as the male parent in crosses with A3Tx398, the F1's had 60 to 100% fertility.

Seed can be obtained in germplasm lots from the Foundation Seed Service, Texas Agric. Exp. Station, TX 77843.

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References and Notes