Registration of 'San José 89' Safflower

'San José 89' safflower (Carthamus tinctorius L.) (Reg. no. CV-19, PI 561703) was developed at the Northwest Agricultural Research Center (CIANO), Yaqui Valley Agricultural Experimental Station, Cd. Obregón, Sonora, Mexico. It was released in 1990 by CIANO-INIFAP-SARH (Sonora State Ctr. for Agric., Animal Husbandry and Forestry Res., Secretariat of Agric. and Water Development) for commercial production in northwest Mexico as a high-yielding, widely adapted cultivar.

San José 89 was selected from the cross SI-CEN 1368/SI-CEN 1178/981-5. SI-CEN 1368 and SI-CEN 1178 are introductions from the World Safflower Collection. '981-5' was developed by Pacific Oilsseeds Inc., and is resistant to Alternaria leaf spot (incited by Alternaria carthami Chowd.).

The original cross was made during the 1976-1977 growing season. San José 89 originated as an F₁ single-plant selection, using the pedigree method of selection. Seed of the F₂-derived line was bulked in the F₃ generation during 1979-1980. San José 89 was tested in regional yield trials in the Yaqui Valley of Sonora, Mexico, during the 1980-1981 to 1984-1985 growing seasons and in the Safflower National Uniform Trials of Mexico during the 1985-86 to 1988-89 growing seasons at various locations in northern and central Mexico.

San José 89 has intermediate maturity and moderate resistance to Alternaria leaf spot and rust [incited by Puccinia citratae DC. var. centaureae (DC.) Cummins] compared with Gila, which is susceptible to both diseases. Flowers are yellow in the bud and full bloom stages, and red when wilted. Plants of San José 89 have spines on the tip and along the leaf margins and involucral bracts. The involucral bracts of San José 89 are 1.2 cm shorter than 'Sahuaripa 88' (1), averaging 4.2 cm long and 2.7 cm wide. The average head diameter and number of seeds per head is similar to those of Sahuaripa 88, averaging 2.7 cm and 36, respectively.

San José 89 plants are phenotypically similar to Sahuaripa 88 and average 5 d later in flowering and maturity than Gila. In the Yaqui Valley, San José 89 matures in 150 d, compared with 145 d for Gila. Mature plants are 10 cm taller than Gila under irrigated conditions. The stem is erect, branched, rigid, and tolerant to lodging.

Seeds of San José 89 are white, medium sized, and oval, with normal hulls. The seeds of San José 89 are slightly longer than Gila, averaging 8 mm long and 4.1 mm wide. In tests conducted over a 3 yr period in Cd. Obregón, the test weight of San José 89 averaged 523 g L⁻¹, which is 15% more than Gila. The 1000-seed weight of San José 89 is 372 g. Seed oil content of San José 89 averaged 376 g kg⁻¹, compared with 374 g kg⁻¹ for Gila. San José 89 had an average protein content of 177 g kg⁻¹. The oil of San José 89 averages 526 g kg⁻¹ linoleic acid content, 334 g kg⁻¹ oleic acid, and has an iodine index value of 130.5.

San José 89 produced consistently high seed yields in the regional and national safflower trials. In the Yaqui Valley, averaged over a 4-yr period, San José 89 outyielded the check variety Gila by 20%. In the Safflower National Uniform Trial, over a 4-yr period, San José 89 produced an average seed yield of 2934 kg ha⁻¹, which is 15% more than Gila.

Seed of San José 89 was distributed to seed producing organizations in Sonora in 1990. Breeder seed will be maintained at the Northwest Agricultural Research Center (CIANO), Apartado Postal 515, Cd. Obregón, Sonora, Mexico, CP 85000.

References and Notes


G.L. GRAEF, J.E. SPECHT, D.M. WHITE, AND L.L. KORTE (2)

Published March, 1993