

REGISTRATION OF ICGS 11 PEANUT CULTIVAR

ICGS 11, A SPANISH-TYPE PEANUT cultivar (*Arachis hypogaea* L. ssp. *fastigiata* var. *vulgaris*) (Reg. no. 38; PI 478788), was released in 1986 by the Central Sub-Committee on Crop Standards, Notification, and Release of Varieties, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, for the post-rainy season cultivation in central and peninsular India. It has produced an average of 29% higher pod yield than the control cultivar SB XI in on-farm trials (2). The average pod yield of ICGS 11 in these trials was 2050 kg ha⁻¹.

ICGS 11 was bred at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh 502 324, India. It was later designated as ICGV 87123 for release in India.

ICGS 11 originated from a single plant selection in a natural hybrid population of the Indian cultivar Robut 33-1 (also known as Kadiri 3) in 1977-1978. This plant was grown in progeny rows for two seasons by pedigree method and later advanced to uniformity by bulk pedigree method (3). Its pedigree is (Robut 33-1)-18-8-B₁-B₁-B₁-B₁-B₁. Robut 33-1 is an early-maturing Virginia-type peanut. The other parent of ICGS 11 is unknown, but might have been a Spanish-type cultivar, because the natural hybrids were identified on the basis of the presence of flowers on the main axis and because sequentially branched Spanish forms were observed in segregating generations.

ICGS 11 has Decumbent 2 growth habit (1) with dark green, medium to small, elliptic leaflets. The number of primary branches ranges between five and nine and of secondary branches, between zero and three. It matures in ~120 d and has 70% meat. It has two-seeded, medium sized, smooth pods with no beak and slight to moderate constriction. Its seed are tan in color, weigh 60 g per 100 seed, and contain 49% oil and 22% protein.

ICGS 11 has field tolerance to bud necrosis disease caused by Tomato Spotted Wilt Virus. It possesses above average tolerance to end-of-season drought and is photoperiod insensitive (2).

The ICRISAT Center, Patancheru, maintains breeder seed.

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References and Notes

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REGISTRATION OF 'M-103' RICE

'M-103' RICE (*Oryza sativa* L.), (Reg. no. 79; PI 527566), was developed by the California Cooperative Rice Research Foundation, Inc., at the Rice Experiment Station, Biggs, CA, and released jointly by the California Agricultural Experiment Station and USDA-ARS. M-103 is a photoperiod-insensitive, very early-maturing, semidwarf, translucent, medium-grain cultivar. It was tested in the University of

California Cooperative Extension statewide trials from 1984 to 1988 with the experimental designation 84-Y-9. M-103 is a pure line selection from the cross R6115, made in the winter of 1979-1980. Its pedigree is 78-D-18347/'M-302'. The 78-D-18347 was a very early, semidwarf, chalky, short-grain selection from the cross SD7/'Earlirose'/'Reimei' (PI 318644). SD7 is a cold-tolerant, late-maturity, semidwarf, medium-grain selection from 'CS-M3'/'Calrose 76'. The male parent (Earlirose/Reimei) of 78-D-18347 was a selection derived from the cross R191, made in the summer of 1969. M-302, Earlirose, CS-M3, and Calrose 76 are obsolete California cultivars. M-103 is the product of pedigree breeding. Two consecutive winter nurseries in Hawaii were used to accelerate generation advance and purification.

M-103 has the same maturity as 'M-101' (1), as indicated by heading in 87 d and harvest grain moisture and heads 6 d earlier than 'M-202' (2). The average plant height of M-103 is 87 cm, which is 3 cm shorter than M-101 and M-202. M-103 lodging resistance is superior to M-101 (11 vs. 39% lodging) and similar to M-202 (15%). M-103 has glabrous leaves and hulls, except for a few hairs on the leaf margins and lemma keel. No plant parts of M-103 show anthocyanin pigmentation.

Panicles of M-103 normally are exerted completely from the leaf sheaths. The new cultivar has good seedling vigor, although it is less vigorous than M-101 and M-202, as indicated by average seedling vigor scores of 4.4, 4.6, and 4.5 on a scale of 1 to 5 (5 = most vigorous) for M-103, M-101 and M-202, respectively. M-103 is similar to current California rice cultivars in tolerance to recommended rice herbicides. Reaction of M-103 to sterility caused by cool night temperatures 10 to 14 d before heading is excellent and is better than M-101 (9 vs. 19% sterility). In five tests, M-103 was significantly less susceptible than M-101 to stem rot (caused by *Sclerotium oryzae* Catt.) with average scores of 5.3 and 6.4, respectively, on a scale of 1 to 10. M-103 and M-101 are moderately susceptible to aggregate sheath spot [caused by *Rhizoctonia oryzae-sativae* (Saw.) Mordue]. Reaction of M-103 to other diseases that are not prevalent in California is unknown.

Brown rice kernels of M-103 are slightly smaller than those of M-101, averaging 22.3 mg per kernel, 6.0 mm long, and 2.7 mm wide as compared to 23.2 mg, 6.1 mm, and 2.8 mm for M-101. Milled kernels are translucent. Hulled kernels of M-103 have light brown pericarp and white, nonwaxy, non-aromatic endosperm. Physicochemical tests conducted at the USDA Rice Quality Laboratory at Beaumont, TX, indicated that the apparent amylose makes up 188 mg g⁻¹ (18.8%) of the endosperm starch, which has a low gelatinization temperature, as evidenced by an alkali spreading score of 7.0. These values are typical of U.S. medium-grain cultivars (3). A 3-yr study of whole-grain (% head) milling yields indicated that M-103 has superior milling yields. M-103 and M-101 head-rice yields averaged 610 (61%) and 440 (44%) mg g⁻¹, respectively, for a range of harvest moistures in 1986 to 1988. Total milled rice (% total) was 690 (69%) and 670 mg g⁻¹ (67%) for M-103 and M-101, respectively. Taste panelists and various marketing agencies indicate the raw (uncooked) appearance of M-103 is equal to M-202. They rated the cooked product as acceptable for the reprocessing and traditional Calrose medium-grain package markets.

M-103 was evaluated in 18 tests conducted in cooperation with University of California Cooperative Extension from 1985 through 1988. M-103 averaged 10.048 Mg ha⁻¹ (8971 lb acre⁻¹) of paddy (rough) rice at 120 mg g⁻¹ (12%) grain moisture and M-101 averaged 9.045 Mg ha⁻¹ (8076 lb acre⁻¹) which is 1.003 Mg ha⁻¹ (895 lb acre⁻¹) or 11% greater than M-101. M-103 yielded slightly less than the widely grown early medium-grain cultivar M-202, which averaged 10.375 Mg ha⁻¹ (9263 lb acre⁻¹). The very early maturity, superior whole grain and total milled rice, and excellent resistance to cool-temperature-induced blanking of M-103 make it a good

alternative cultivar to both M-101 and M-202 in the very coldest rice production areas and for late plantings in the warmer areas.

The 1986 M-103 panicle rows from the 1985–1986 winter nursery were uniform for short height and very early maturity. The 1988 foundation field contained 0.21% off-types that were rogued. Major off-types were glabrous medium-grains that were taller, later, and had more erect and flatter flag leaves than M-103. These particular off-types were also segregating for pink apiculus. A few off-types were taller and later pubescent medium-grains, and smooth long-grains with a pink apiculus; these off-types were the result of outcrossing and undetected rogues in the Hawaii winter nursery. The 1988 breeder seed planted in the foundation seed field was relatively free of these off-types. The 360 headrows produced in 1988 expressed uniform heading and maturity except for four taller and later rows that were removed.

Classes of seed will be breeder, foundation, registered, and certified, to be produced in California. Foundation seed can be used to produce foundation seed when necessary. Application is being made for protection of M-103 under the Plant Variety Protection Act, Title V. Headrow seed will be produced as necessary for breeder seed. Breeder and foundation seed will be maintained by the California Cooperative Rice Research Foundation, Inc., P.O. Box 306, Biggs, CA 95917.

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REGISTRATION OF 'QUIRIEGO 88' SAFFLOWER

'QUIRIEGO 88' SAFFLOWER (*Carthamus tinctorius* L.) (Reg. no. 16; PI 537110) was developed at the Northwest Agriculture Research Center (CIANO), Yaqui Valley Agricultural Experiment Station, Cd. Obregón, Sonora, Mexico. It was released by CIANO-INIFAP-SARH (Sonora State Ctr. for Agric. Animal Husbandry and Forestry Res., Secretariat of Agric. and Water Development) in 1989 as a high-yielding, widely adaptable cultivar for commercial production in northwest Mexico.

Quiriego 88 originated from the cross CM-106-SI (1)1/PCOy/'Gila' made in 1980. CM-106-SI(1)1 was obtained as a mutant selection in Line 106 from the World Safflower Collection and originated in India. The mutant plant was selected for its dwarfness and earliness in the Culiacán Valley, Sinaloa, Mexico. The two characters are conditioned by single recessive genes (1). PCOy is an introduction resistant to rust [incited by *Puccinia carthami* Cda.] (2). Gila is a commercial cultivar adapted to the growing conditions of northwest Mexico.

Quiriego 88 originated as an F₄ single plant selection from

a segregating population managed by the pedigree method of selection. Seed of the selected F₄-derived line was bulked in the F₅ generation and tested in regional and national safflower yield trials from 1985 to 1988. It was tested at several locations in the states of Baja California, Chihuahua, Coahuila, Jalisco, Nuevo León, Sinaloa, Sonora, and Tamaulipas.

Quiriego 88 is intermediate in flowering and maturing, with moderate resistance to alternaria leaf spot (incited by *Alternaria carthami* Chow.) and rust compared to Gila, which is susceptible to both diseases. The flowers are yellow in the bud, full bloom, and wilt stages. Plants of Quiriego 88 have spines on the tip and along the margin of the leaves and involucre bracts. The involucre bracts of Quiriego 88 are short, averaging 3.6 cm long and 1.3 cm wide. The average head diameter is 2.8 cm. Quiriego 88 plants average about 3 d later in flowering and maturity than Gila. In the Yaqui Valley of Sonora, the average number of days to maturity is 145. Mature plants average 5 cm taller than Gila under irrigated conditions.

Seeds of Quiriego 88 have a smooth white hull. The seed size is slightly larger than Gila, averaging 7 mm long and 4 mm wide. The test weight of Quiriego 88 averaged 521 g/L compared to 516 g/L for Gila in tests conducted at Cd. Obregón and Navojoa over a 3-yr period.

Compared to Gila, Quiriego 88 has improved oil content. In tests conducted over a 3-yr period at Cd. Obregón, the meal protein content of Quiriego 88 averaged 18.1%; this is similar to Gila, which averaged 18.5%. The seed oil content of Quiriego 88 is one percentage point higher than Gila under irrigated conditions. Quiriego 88 is low in oil iodine number and linoleic acid content, averaging 124.6 and 55.4%, respectively, compared with 139.6 and 75.1% for Gila. Quiriego 88 has an oleic acid content averaging 35.4%, compared with 16.5% for Gila. The seed yield and oil percentage of Quiriego 88 over a 3-yr period averaged 3020 kg/ha and 38.1%, compared with 2504 kg/ha and 37.2% for Gila.

Seed of Quiriego 88 was distributed to seed-producing organizations in Sonora in 1989. Breeder seed will be maintained by CIANO, Apartado Postal 515, Cd. Obregón, Sonora, Mexico. Additional information on the performance and characteristics of Quiriego 88 has been published (3).

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REGISTRATION OF 'SAHUARIPA 88' SAFFLOWER

'SAHUARIPA 88' SAFFLOWER (*Carthamus tinctorius* L.) (Reg. no. 17; PI 537111) was developed at the Northwest Agriculture Research Center, (CIANO), Yaqui Valley Agricultural Experiment Station, Cd. Obregón, Sonora, Mexico. It was released by CIANO-INIFAP-SARH (Sonora State Ctr. for Agric. Animal Husbandry and Forestry Res., Secretariat