Registration of 'Negro Tacana' Common Bean

Negro Tacana, a black-seeded common bean (*Phaseolus vulgaris* L.) cultivar (Reg. no. CV-13, P1 591068), was developed in a Collaborative Regional Project for Central America, Mexico, and the Caribbean basin (PROFRIOJAL) with partial financial support from the Swiss Commission for Development (COSUDE) and technical advice from the International Center for Tropical Agriculture (CIAT). Negro Tacana was released in 1995 by the National Research Institute for Forestry, Agriculture, and Livestock (INIFAP) of Mexico as a bean golden mosaic virus (BGMV) resistant cultivar for the tropical lowlands of Mexico. It was selected for disease resistance using the modified pedigree method from an F₂ population made at CIAT (Cali, Colombia) in 1986.

Negro Tacana originated from the double cross (DOR 364/G 18521)/(DOR 365/LM-30630). Bred lines DOR 364 and DOR 365 are adapted to the tropical lowlands of Central America, while G 18521 and LM-30630 were bred for Brazil. All four parents were selected for a degree of resistance to BGMV. Individual plant selections were made at CIAT (Palmitina, Colombia) in the F₂, based on plant type. Selections were increased in F₃, and F₄ families were planted at Coyuta, Guatemala, where individual plants were selected for reaction to BGMV. Families in the F₃ were planted at Monjas, Guatemala. Fifteen plants were taken in selected families, seeds bulked, and planted at Jutiapa, Guatemala. In the F₅ generation, selection was performed on best families. Selections from the F₄ to F₅ generations were based on disease reactions: scores less than 3 (on a scale of 1 to 9, where 1 = symptomless and 9 = dead plant), mainly against BGMV.

Negro Tacana is of indeterminate bush growth habit Type II (1), with relatively small leaves and purple flowers. It matures 1 and 3 d earlier than 'Jamapa' and 'Negro Cotaxtla 91', respectively, and is adapted to similar latitudes (approximately 16 to 25°N) (2). It has a more erect, compact growth habit than all other tropical bred cultivars grown in Mexico. Prior to release, Negro Tacana was designated as DOR 390 and was distributed for yield testing in Central America and Mexico in 1989. From 1992 to 1994, Negro Tacana was tested at several locations in the humid tropics of Mexico. In the state of Veracruz, averaged over 3 yr, it produced 9 and 27% more than Negro Cotaxtla 91 and Jamapa, respectively. In uniform yield trials conducted in several states of the tropical lowlands of Mexico, Negro Tacana averaged 997 kg ha⁻¹, compared with 916 and 724 for Negro Cotaxtla 91 and Jamapa, respectively. In tests at Tapachula, Chiapas, under a strong pressure of BGMV, Negro Tacana outyielded all local landraces and cultivars from 26 to 200%. In eight commercial plots (1 ha each) established at different locations in the state of Veracruz, Negro Tacana, Negro Cotaxtla 91, and Jamapa yielded an average of 1214, 1142, and 867 kg ha⁻¹, respectively.

The average flowering date of Negro Tacana is 38 d after planting, which is similar to most tropical landraces and cultivars. In the lowland tropics of Mexico, Negro Tacana is resistant to BGMV and anthracnose [caused by *Colletotrichum lindemuthianum* (Sacc. & Magnus) L.-ans.-Scrib.] and rust [caused by *Uromyces appendiculatus* (Pers.-Pers.) Unger var. *appendiculatus*]. Negro Tacana has an opaque black seed coat, and its 100-seed weight averaged 18 g, similar to most landraces and cultivars in its class. The technological and nutritive quality of Negro Tacana showed no differences to that of previously released cultivars Jamapa, Negro Veracruz, Negro Huasteco 81, and Negro Cotaxtla 91. Its seed protein content (25.1%, dry weight basis) and its crude fiber content (8.8%) are superior to those of most cultivars in its class.

Breeder seed is maintained by the Cotaxtla Experiment Station, Veracruz of INIFAP and is available upon request from E. López-Salinas. Small quantities of seed of DOR 390 can also be obtained from the bean program at CIAT.


References and Notes


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Registration of 'ICMV 88904' Pearl Millet

ICMV 88904, a grain cultivar of pearl millet [*Pennisetum glaucum* (L.) R. Br.] (Reg. no. CV-13, P1 591068), was developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India. ICMV 88904 was released on 17 Aug. 1993 by the Government of India under the designation 'ICMV 221' as a higher-yielding alternative to 'ICTP 8203' (2) in all pearl millet producing regions of India except central and western Rajasthan and northern Gujarat that receive <400 mm mean annual precipitation. ICMV 88904 was tested under the experimental designation MP 221 by the All India Coordinated Pearl Millet Improvement Project (AICPMIP).

In the 1987 dry season, 1000 cycle-3 S₃ progenies of the ICRISAT Bold Seeded Early Composite (BSEC) (4) were evaluated under postflowering drought stress conditions at ICRISAT Asia Center. We selected 124 S₃ progenies for superior threshing percentage (grain mass as a percentage of panicle mass) among progenies having grain yield above the mean of the trial. Remnant seeds of the selected progenies were sown as a bulk in an irrigated isolation plot during the 1988 dry season, and the plants were allowed to random-mate to produce an experimental population designated ICMV 88904. During this and one subsequent random-mating, mass selection was applied against late, tall plants and weak plants. ICMV 88904 was evaluated in 21 trials across nine locations in India during the 1988 rainy season. Grain yield averaged 2.7 ± 0.2 t ha⁻¹, 15% more than ICP 8203 (2.3 ± 0.1 t ha⁻¹).

ICMV 88904 was subsequently tested as MP 221 in 79 replicated trials conducted by AICPMIP over 3 yr (1989–1991). In the 72 trials at locations in AICPMIP's Zone B (corresponding to all pearl millet producing regions in India that receive >400 mm mean annual precipitation), ICMV 88904 yielded 2.07 t ha⁻¹ of grain, 14% more than 'WC-C75' (1). In the third year of these trials (across 20 locations), ICMV 88904 yielded 15% more grain than ICP 8203 and 24% more than WC-C75. On average, ICMV 88904 flowered in 46 d (31 d for WC-C75) and had a plant height of 165 cm (177 cm for WC-C75). ICMV 88904 has thick, semicom pact to compact, lanceolate to oblanceolate panicles that often taper sharply toward the apex.