

Freeman

- UNITED STATES DEPARTMENT OF AGRICULTURE
Science and Education Administration
and
Agricultural Experiment Station of the
University of Puerto Rico

ANNOUNCE

THE RELEASE OF FOUR BLACK BEAN CULTIVARS: B-128, B-190, B-351, and
2B-5-1

The Science and Education Administration, Agricultural Research, United States Department of Agriculture, and the Agricultural Experiment Station of the University of Puerto Rico (UPR) announce the release of four improved black bean cultivars: B-128, B-190, B-351 and 2B-5-1. These improved cultivars have been developed by a cooperative research program between the Mayaguez Institute of Tropical Agriculture (MITA), AR, SR, SEA and the University of Puerto Rico (Project C-457 entitled "Improvement of Tropical Production of Beans and Cowpeas Through Disease and Insect Control") supported in part by the Agency for International Development, Contract AID/ta-C-1296.

These four black beans were developed by crossing the following varieties in various combinations: the white bean "Bonita" and the black beans 15R-55, 50600, La Vega, Jamapa and Mex. 309. The new cultivars generally combine the best characteristics of their parents including the ability to establish and maintain plant stand, good general disease tolerance, adaptability to different environments and a high yield potential. Several of the new cultivars have particularly high disease tolerance and resistance and a shorter, more erect plant habit when compared with their parents.

A summary of each cultivar's pedigree and improved characteristics is as follows:

B-128 From a cross of 15R-55 x 50600 (15R-55 is a multiple disease resistant small black, released in 1974 by N. G. Vakili, USDA, Mayaguez, and 50600 is a small black from Costa Rica), a single plant selection in F₂, reselected for single plant in F₄ and increased for 2 generations. Resistant to systemic mosaic strain of BCMV. It has a low rusting (Uromyces appendiculatus) characteristic in Puerto Rico, retaining foliage through maturity and is highly resistant to three virulent races endemic in the U.S. It has exceptionally low seed damage at harvest and a fairly high total protein content (23.7%). In trials with no disease control the yield average for three locations 1977 to 1979 inclusive in P.R. was 1,600 Kg/Ha at a one meter row spacing. A row spacing trial for two seasons indicated maximum yields could be obtained with narrow (35-40 cm) rows in P.R. The dull black seed weighs 21.3 g/100 seed.

B-190 From a cross of Mex. 309 x 50600 (Mexico-309 is immune to both soil-borne complex of diseases and to bean rust in P.R. and 50600 is a small black from Costa Rica), a single plant selection in F₂, rogued and bulked through F₆. It has field resistance to virus but is slightly susceptible to CpMV. It is immune to bean rust in P.R., and is resistant to three virulent races endemic in the U.S. It has the field tolerance of the parental 50600. In trials with no disease control the yield average for three locations 1977 and 1979 in P.R. was 2,100 Kg/Ha at a one meter row spacing. The fairly large semi-vine plant habit should give maximum yields at medium to wide row spacings of 50-100 cm in P.R. The dull black seed weighs 24.4 g/100 seed.

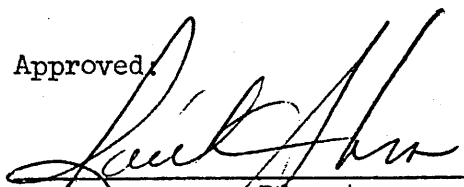
B-351 From a cross of Bonita x Jamapa (Bonita is a standard white bean variety from Puerto Rico and Jamapa is a standard black variety from Mexico), a single plant selection in F₂, reselected for single plant in F₄ and increased for 2 generations. It is resistant to systemic mosaic of BCMV. It has a low rusting (Uromyces appendiculatus) characteristic in Puerto Rico, retaining foliage through maturity and is resistant to three virulent races endemic in the U.S. It has a very short semi-vine habit. In trials with no disease control the yield average for three locations 1977 to 1979 inclusive in P. R. was 1,900 Kg/Ha at a one meter row spacing. A row spacing trial for two seasons indicated maximum yields could be obtained with narrow (35-40 cm) rows in P. R. The shiny black seed weighs 22.8 g/100 seed.

2B-5-1 From a double cross using as female the F₁ of the cross La Vega x 15R-55 and as the male the F₁ of the cross Mex. 309 x La Vega (La Vega is a multiple disease resistant, medium-seeded black bean of very good yield potential at nearly all locations that was released in 1973 by N. G. Vakili, USDA, Mayaguez), a single plant selection in F₂, rogued and bulked through F₆. It has field resistance to virus but is slightly susceptible to CpMV. It is highly resistant to bean rust in field plantings in P. R., and to three virulent rust races endemic in the U. S. In trials with no disease control the yield average for three locations 1978 to 1979 inclusive in P. R. was 1,900 Kg/Ha. It has a medium semi-vine habit which should give the highest yields at medium to wide row spacings of 50-100 cm in P. R. The dull black seed weight 23.6 g/100 seed.

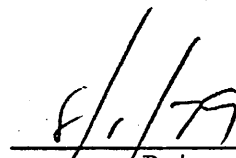
These improved black bean cultivars with different combinations of disease resistances and plant and seed types offer a diversity of characteristics suggested for cultivation in the tropics.

Limited amounts of seed are available on a pro-rata basis to qualified persons who request it in writing from Mayaguez Institute of Tropical Agriculture, AR, SR, SEA, P. O. Box 70, Mayaguez, Puerto Rico 00708.

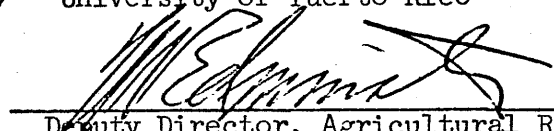
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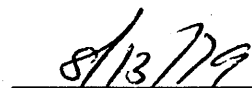
Director
Agricultural Experiment Station
University of Puerto Rico



Date



Deputy Director, Agricultural Research
Science and Education Administration



Date