

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Mayaguez, Puerto Rico
and
University of Puerto Rico
Mayaguez, Puerto Rico

RELEASE OF TWO KIDNEY BEAN BREEDING GERM PLASM LINES
3M-150 and 3M-152

The Agricultural Research Service, U.S. Department of Agriculture and the Agricultural Experiment Station of the University of Puerto Rico announce the release of two kidney bean breeding germ plasm lines with multiple disease resistance and adaptation to the hot and humid conditions of the tropics. These lines have been developed by a cooperative research program between the Tropical Agriculture Research Station (ARS/USDA) and the University of Puerto Rico (supported in part by the Agency for International Development through contracts AID/CM/TA-C-73-26 and AID/TA-C-1296, and lately by Grant AID/DSAN/XII-G-0261, Bean/Cowpea CRSP). 3M-150 is being released as a mixture of solid color and pinto seed patterns and 3M-152 is a light red kidney seed type. These lines are recommended to be used for increasing disease resistance and reducing genetic vulnerability of the kidney and cranberry bean types being grown in the U.S.

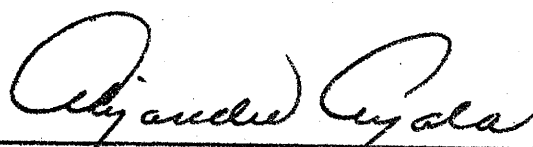
These lines originate from F₂ single plant selections from a cross between the Mexican line Michoacan 68-B-1 (a progenitor of the Mexican cultivar Canario 101) and 27-R, a light red kidney line showing wide adaptability during many years of trials in the PCCMCA Central American nurseries. These lines combine the disease resistance of Michoacan 68-B-1 with the seed type and wide adaptability of 27-R.

3M-150 and 3M-152 have been tested for disease resistance in field trials at 3 locations in Puerto Rico for 5 years. They have been resistant to root rots, angular leaf spot (Isariopsis griseola), and bean common mosaic virus. They are slightly susceptible to moderately susceptible to rugose viruses and powdery mildew, but are highly susceptible to bacterial blights. They have been inoculated at Beltsville with 14 U.S. rust races and show a uniformly moderate resistance with the exception of being very susceptible to race 72-16.

The plants are determinate, producing several to many branches and will grow to 30-40 cm tall. They are very resistant to lodging with good root systems and strong stems. These lines require good conditions of fertility and moisture, thus yields will be considerably reduced under


conditions of low fertility or excessive rainfall. Yields over 5 years at the best location in Puerto Rico, under irrigation at 1 m row spacing, averaged 1748 K/Ha for 3M-150 and 1731 K/Ha for 3M-152; however narrower row spacings are recommended. They are daylength insensitive, blooming in 35 to 40 days and mature in 75 to 80 days after planting during all seasons in Puerto Rico. Seed weight for 3M-150 is 43-44 g/100 seed and 3M-152 is about 42 g/100 seed.

Breeder seed is available from Tropical Agriculture Research Station, ARS/SR/USDA, P. O. Box 70, Mayaguez, Puerto Rico 00709.



Director, Agricultural Experiment Station,

8/4/83
Date



Administrator, Agricultural Research Service

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Date