

1

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

RELEASE OF A DRY BEAN BREEDING GERM PLASM LINE
4M-99

The Agricultural Research Service, U.S. Department of Agriculture and the Agricultural Experiment Station of the University of Puerto Rico announce the release of the dry bean breeding germ plasm line 4M-99 which has been outstanding for multiple disease resistance, especially angular leaf spot (Isariopsis griseola), wide adaptability and high yield potential in Puerto Rico. This line has 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).

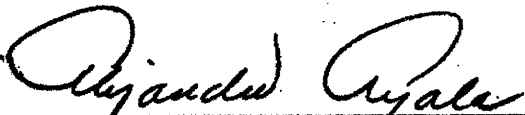
This line originated from an F₂ selection from a multi-cross attempting to combine 3 sources of tropical rust resistance. The female parent was the F₁ of a double cross containing the linked-gene set for rust resistance from Mex. 309 and the male was the F₁ of a 3-way cross involving the two polygenic rust tolerant lines Ecuador 299 and MITA-6383 (M-1). The resulting line was subsequently selected for multiple disease resistance and rogued through the F₃ and F₄ generations at several locations with high disease incidence.

Field trials during 4 years at 3 locations in Puerto Rico and 1 year at 15 locations in the Dominican Republic have shown that this line is uniformly highly resistant or resistant to rust, angular leaf spot (Isariopsis griseola), powdery mildew, bean common mosaic virus, rugose virus, and root rots. It is slightly tolerant to common blight.


Yields have been equal to or superior to those of the best local black bean cultivars, and it has often produced the best yields of the lines tested when disease incidence was severe. The 4-year yield average at three locations in Puerto Rico was 1359 K/Ha at a 1 m row spacing. A somewhat narrower row spacing is recommended. The plant

has a semi-vine, somewhat sprawling, type II plant type. It blooms in 35-40 days and matures in 80-90 days after planting. Seed is khaki-brown to dark brown and weighs about 24 g/100 seed.

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



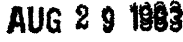
Director, Agricultural Experiment Station,
University of Puerto Rico



Date



Administrator, Agricultural Research Service



Date