single cross, ‘Bayo Victoria’/‘Olathe’, made in 1988. The cross was designed to combine disease resistance and local adaptation with semiupright plant architecture. Bayo Victoria is a midseason cultivar of indeterminate growth habit (type III) developed for the semiarid highlands of Mexico. Olathe (B23/5958-B-1) is a pinto bean with a semiupright indeterminate type II plant architecture (in the highlands of Mexico) released by the bean program at Colorado State University (Wood and Keenan, 1982). The F1 plants were advanced in the field, and early generation selection was practiced in the F2 population and then in the F4 and F6 families, following the pedigree method. Individual plants were selected on the basis of plant vigor, pod load, and disease resistance. The F5, F7, and F9 families were advanced in a winter nursery at Los Mochis, Sinaloa, on the west coast of Mexico. F4, F6, and F8 families were planted in rows at the Valle del Guadiana Experiment Station in Durango, Mexico, and selections were made between and within rows based on disease reaction, plant vigor, earliness, and commercial seed traits. The F10 breeding line PT91325 was entered into replicated trials in 1993.

Mestizo was tested extensively in 35 environments of the semiarid highlands of Mexico (trials conducted at locations above 1800 m above sea level) for yield and agronomic traits at varied locations from 1993 to 1997. In the semiarid highlands, Mestizo averaged 1399 kg ha−1 and outyielded Pinto Nacional, the main landrace in its seed class in the region, by 30%. At locations with irrigation, Mestizo averaged 2213 kg ha−1 with a highest yield of 3713 kg ha−1.

Mestizo averaged 40 cm tall and exhibits a short vine type III indeterminate growth habit, with pod distribution in the lower half of the canopy. Mestizo has white flowers and blooms 40 d after planting. Mestizo is a short-season cultivar that matures 89 d after planting, with a range in maturity from 76 to 91 d, depending on season and altitude. Mestizo matures 7 d earlier than ‘Villa’, and earlier than most landraces in its commercial seed class. In the semiarid Highlans of Mexico, Mestizo is resistant to all prevalent races of anthracnose [caused by Colletotrichum lindemuthianum (Sacc. & Magnus) Lambs.-Scrib.] except race 1472, a race found in localized areas in the Mexican highlands (Balardín et al., 1997; Gonzalez et al., 1998). It is resistant to rust [caused by Uromyces appendiculatus (Pers.:Pers.) Unger] in spite of the large number of physiological races detected in the region (Araya et al., 1996). Mestizo is tolerant to common bacterial blight [caused by Xanthomonas campestris pv. phaseoli (Smith Dye)] and root rots [primarily caused by Sclerotium solani (Mart.) Sacc. f. sp. phaseoli (Burk.) Snyder & H.N. Hans. and Rhizoctonia solani Kühn).

Mestizo has a medium pinto seed size that averages 40 seed−1 (range is from 38–44 100 seed−1). The seed has an elliptical nonuniform shape, with an average weight concentration on a dry weight basis of 21%, similar to the cultivars in its seed class. Breeder and Foundation seed of Mestizo is maintained at the Valle del Guadiana Experiment Station, and small samples for research purposes can be obtained from the corresponding author.


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References


