single cross, ‘Bayo Victoria’/Olathe’, made in 1988. The cross was designed to combine disease resistance and local adaptation with semi-upright plant architecture. Bayo Victoria is a midseason cultivar of indeterminate growth habit (type III) developed for the semiarid highlands of Mexico. Olathe (B23/5988-B-1) is a pinto bean with a semi-erect 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 F3 and F5 families, following the pedigree method. Individual plants were selected on the basis of plant vigor, pod load, and disease resistance. The F3, F5, and F7 families were advanced in a winter nursery at Los Mochos, Sinaloa, on the west coast of Mexico. F3, F5, and F7 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 F9 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, 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 Highlands 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 (Balardíñ 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 *Fusarium solani* (Mart.) Sacc. f. sp. *phaseoli* (Burkholder) W.C. Snyder & H.N. Hans. and *Rhizoctonia solani* Kühn].

Mestizo has a medium pinto seed size that averages 42 g 100 seed\(^{-1}\) (range is from 38–44 g 100 seed\(^{-1}\)). The seed has an elliptical nonuniform shape, with an average protein concentration on a dry weight basis of 21%, similar to most cultivars in its seed class. Breeder and Foundation seed of Pinto Mestizo is maintained at the Valle del Guadiana Experiment Station, and small samples for research purposes can be obtained from the following author.


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REGISTRATIONS OF GERMPLASM

Registration of GEMS-0001 Maize Germplasm Resistant to Leaf Blade, Leaf Sheath, and Collar Feeding by European Corn Borer

GEMS-0001 (Reg. no. GP-363, PI 614124) maize (*Zea mays* L.) germplasm, which is resistant to damage caused by the European corn borer [*Ostrinia nubilalis* (Hübn.)], was released by the Agricultural Research Service, USDA, in July 2000. GEMS-0001 is derived from the cross Piura 144 (PI 503806) × B94. Breeding lines from PI 503806 × B94 were advanced by three generations of backcrossing to B94. Throughout the breeding program, donor plants were selected by evaluating their resistance to feeding by European corn borer larvae on leaf blades and on leaf sheaths and collars. Plants were artificially infested with larvae, and selected plants with reduced feeding were carried forward in the breeding effort. Seeds from the third-generation backcross were grown in Ames, IA, in 1999, and plants were full-sib mated to obtain a seed increase for release and distribution.

The recurrent parent, B94 (Russell et al., 1971), is an AES 800 maturity stiff-stalk synthetic inbred line selected for its high-yield performance in single-cross tests. GEMS-0001 flowered 5 d later than B94 at Ames, IA, in 1998, and 3 d later than B94 at Stoneville, MS, in 1999. The donor parent, PI 503806, is a tropical maize from northwestern Peru chosen for its resistance to leaf-blade feeding damage caused by first-generation European corn borer (Abel et al., 1995) and leaf-sheath and collar-feeding damage caused by the second generation of this insect (Abel et al., 1998). The resistance expressed in PI 503806 is not based on high levels of 2,4-hydroxy-7-