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SEED YIELD AND ITS COMPONENTS IN POLE BEANS (*Phaseolus vulgaris* L.) IN THREE TYPES OF TRELLISES

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The use of trellises is becoming increasingly popular in the cultivation of pole beans in Mexico. The present work evaluates the seed yield and its components for three types of 2 m high trellises used by farmers: Type A (Fig. 1-A), one plane vertical; Type B (Fig. 1-B) two planes in inverted V shape; Type C (Fig. 1-C) ("teepee") conical type. *Arundo donax* was used to construct the trellises.



Fig. 1-A

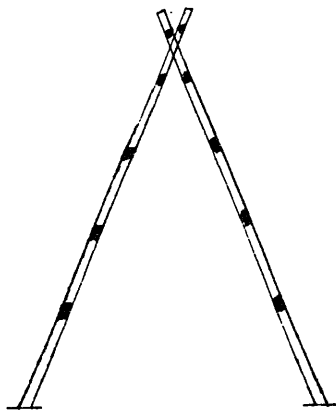


Fig. 1-B

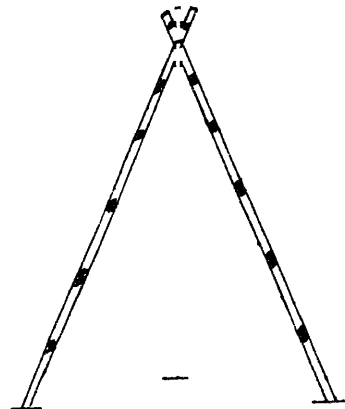


Fig. 1-C

A 150-day cycle pole bean cv. Negro-150 was planted in rows 1.6 m apart. Twenty eight plants per square meter were used with types A and B trellises and one plant per square meter for type C. These were the best population densities determined by previous works, based on seed yields.

In order to get a better land use, an earlier (90 day-cycle) bush bean at 22 plants per square meter was planted, in rows between the rows of trellises. A randomized block with 4 replications was used. Fertilizer at the rate 100-100-60 (NPK) was applied for the entire crop.

RESULTS: No significant yield difference was found between types A and B trellises, which gave respectively 427 and 478 g of seeds per square meter. These yields, as well as the number of pods and seeds at harvest, were higher than those for type C, (287 g of seeds per square meter).

The bush beans gave 191, 118 and 180 g of seed per square meter when associated with trellises of type A, B and C. respectively.

It was concluded that trellises of types A and B were equally satisfactory. However, from the standpoint of mechanical resistance, the latter is more favorable. Type C was less satisfactory.

The association with an early bush bean adds to the yield per square meter and enables a more efficient use of the land.

ANATOMY OF FLOWER BUDS WITH HIGH AND WITH LOW POTENTIAL FOR ABSCISSION IN Phaseolus vulgaris L.

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In beans (Phaseolus vulgaris L.) abscission of reproductive organs, buds, and young pods, accounts for the loss of up to 80% of potential seeds. Abscission of reproductive organs has been related to abnormalities in the development of the ovule and the embryo sac. However, most of these observations come from studies with woody perennial plants. In the present study, we compared anatomically the ovules from flowers buds with high potential for abscission with those of buds with low potential in order to verify whether ovule and embryo sac development is related to fruit set or bud abscission.