

## DRY MATTER PARTITIONING IN COMMON BEAN SOLE CROP AND INTERCROP WITH SUNFLOWER

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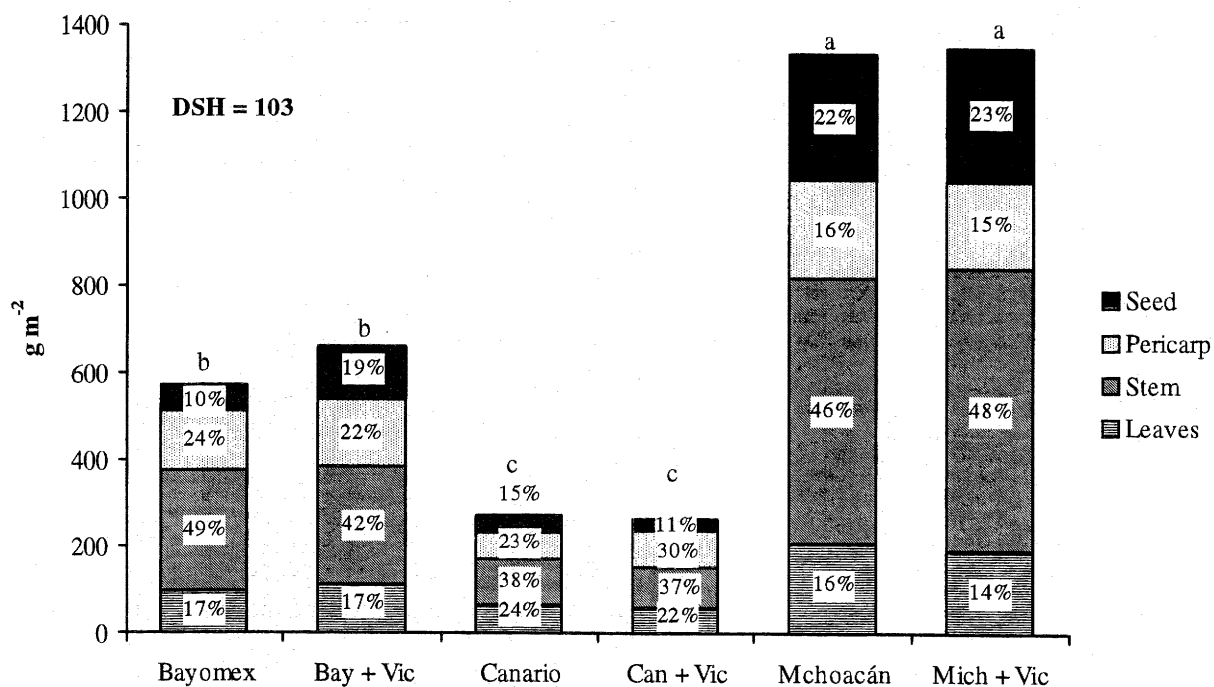
**Introduction.** The production of common bean intercropped with maize is one of the farming systems more used by the small farms, nevertheless, when is associated with this maize exists a reduction in the production of biomass with respect to sole crop (Kandel *et al.* 1997). The objective of this study was to determine whether the production and dry matter partitioning of common bean are reduced when they are sown with sunflower.

**Material and Methods.** The study was conducted in Montecillo, Méx., in summer, 2002. There were six treatments: three intercrops of common bean (*Phaseolus vulgaris* L.) cvs. Canario, Bayomex (determinate type) and Michoacan (indeterminate type) and one of sunflower (cv. Victoria), and three sole crops of common bean. Pure stands and intercrops were sown at population density of 8.3 (bean) and 4.2 (sunflower) plants m<sup>-2</sup> on 25 may, 2002 in a dry clay soil with pH 7.8 and content of organic matter and total nitrogen of 3.8 % and 47 kg ha<sup>-1</sup> respectively. All experiment was fertilized with 100-100-0 NPK. The experimental design was randomized blocks with factorial arrangement, with 4 replicates. At physiological maturity we evaluated total biomass and dry matter partitioning.

**Results and Discussion.** The analysis of variance (ANOVA), it did not show to significant changes due to the factor sowing system (S), nor for the interaction you cultivars \* sowing systems (C\*S). Differences between bean cultivars (C) were observed. At physiological maturity the production of total biomass of the cv. Michoacan in sole crop (1336 g m<sup>-2</sup>) and intercrop with sunflower (1346 g m<sup>-2</sup>) was upper to the remaining treatments, this as a result of a greater allocation of dry matter in leaf, stem, pod and seed..

In all cultivars, the greater dry matter partitioning happened in the stem. In cultivars of determinate type (Canario and Bayomex) the greater proportion of dry matter after the stem it corresponded to pericarp, to the leaves and the seed (figure 1). Opposite tendencies were found

by Escalante and Kohashi (1980), in where report that the greater partition of biomass in the common bean cv. Michoacan 12-A-3 was in the leaves, seed, stem and pericarp. With respect to Michoacan (indeterminate type) in figure 1, it is observed that the major dry matter partitioning after the stem , it happened in the seed (which was reflected in a greater harvest index), pericarp and leaf, similar results were found by Martinez and Kohashi (1990) in bean cv. Negro 150.



**Figure 1. Biomass, allocation and dry matter partitioning in common bean sole crop an intercrop. Montecillo, Méx. Summer 2002.**

### Literature cited

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