

SUMMARY

Effect of organic fertilization on the bean crop (*Phaseolus vulgaris* L.) and its profitability in the center of Veracruz state.

Mexico is considered one of the centers of origin of beans (*Phaseolus vulgaris* L.) and is one of the main producing countries. Bean cultivation in Mexico is considered an strategic product for the rural and social development of the country; since it represents a whole productive and consumer tradition, fulfilling functions of a nutritional nature and for socioeconomic development. The low yield of grain in bean crop is due to the degradation of soils, and causes a decrease in production systems based on self-sufficiency or traditional ways, and its recovery will improve the system productivity. The objective of the present study was to evaluate the effect of three organic fertilizers (Bionat, Root Impeller and Biomacross, Bio-Ferti-L) and a control (Urea with 18-12-06) on the black bean variety Nayarit. During the Spring-Summer 2016 cycle, an essay with eight treatments under an experimental design of blocks completely randomized with four repetitions, was established in the municipality of Amatlán de los Reyes, Ver. The following variables were evaluated: yield, flowering, plant height, number of pods, spad units and visual qualification. The results showed that the effect of organic fertilization under residual humidity conditions was similar to chemical fertilizer, demonstrating its effectiveness. Bionat biofertilizer at 50 and 100% presented the best effects in the evaluated variables, surpassing and competing with the applied control. The profitability analysis showed that, with the Bionat organic fertilizer, the highest net profit was obtained with a cost-benefit of \$ 2.47; which indicates that for each peso that is invested, \$ 1.47 pesos are recovered. Likewise, it is possible to reach the investment equilibrium point faster. The use of organic fertilizer should be done initially as a complement to chemical fertilization, with the idea of replacing it in the medium or long term according to the soil conditions, management and response of the crop.

Key words: *Phaseolus vulgaris* L., organic fertilizers, fertilization.