

INTERCROPPING RYE GRASS (*Lolium multiflorum*) ON BEANS: AN ALTERNATIVE PRODUCTION SYSTEM FOR SMALL FARMERS IN SONORA, MEXICO.

Pedro F. Ortega M. and Jaime Macías C. Campo Exp. Costa de Hermosillo. Apdo. Postal 1031. Hermosillo, Sonora and Campo Exp. Sierra de Sonora. Apdo. Postal 38, Moctezuma, Sonora, México. INIFAP.

Intercropping is a common practice in many agricultural production systems around the world. It aids to maximize land use and makes more efficient the production systems. In the Mountains of Sonora, Mexico, there are about 30,000 ha of irrigated land where is produced maize, beans, wheat, and several forage species in monocrop. The objectives of these experiments were to know the feasibility of intercropping rye grass on beans, and its effect on yield of both crops.

In Aconchi, Sonora, in a commercial bean field, rye-grass seeds were broadcasted during the flowering period of the bean plant (early October, 1989 and 1991) after a cultivation and prior to irrigation of beans. Fertilizers were applied preplanted on beans at the rate of 60 kg N ha<sup>-1</sup> and 80 kg P ha<sup>-1</sup>. Beans were planted August 15 and harvested November 25. No experimental design was used; four samples (10 m<sup>2</sup>) were taken to estimate yield of both crops.

Yield of both crops were not affected by intercropping. Beans yielded 1.5 t ha<sup>-1</sup> and rye-grass 4 t ha<sup>-1</sup> in dry matter basis. Under this production system, rye-grass was harvested 30 days earlier than planted in the conventional planting pattern, which elucidates a greater efficiency in land use. The production costs were reduced, since land preparation for rye grass was not necessary under the intercropping system, and accounts for about 30% of total production costs. Some remarks in the intercropping system are: it can be used only by smallholders since bean cutting has to be done by hand, in order to avoid damage to rye-grass plants. Beans need to be harvested the earliest to fertilize and irrigate rye grass. In conclusion, the intercropping system is feasible under our production conditions, and future research has to be done on fertilizers management.

#### REFERENCES

- Karel, A.K. 1990. Influence of plant population on insect pests of common beans intercropped with maize. Ann. Rept. of the Bean Improvement Cooperative. 33:156-157. USA.
- Mbanga, M.E.T. and O.T. Edge. 1992. Effects of maize planting pattern on maize and bean productivity in an intercrop. Ann. Rept. of the Bean Improvement Cooperative. 35:171-172. U.S.A.