

LEGUME INOCULATION WITH RHIZOBIA: FIELD TRIALS

Third Place, Crop and Soil Science Section,
Professional Category

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This field experiment, a collaborative work of the Philippine Council for Agriculture and Resources Research and Development (PCARRD) and NIFTAL Project of the University of Hawaii, U.S.A., was conducted at the experimental area of the Bureau of Plant Industry, La Granja Experiment Station, La Carlota City to determine the inoculation requirements of soybean, mungbean and peanut and to evaluate the performance of legume inoculants in the field.

Inoculated, uninoculated and uninoculated plus nitrogenous fertilizer treatments were compared at two fertility levels, farm fertility (30-30-30 kg NPK/ha) and maximal fertility (100-100-100 kg NPK/ha) levels.

Legume seeds were inoculated with multi-strain inoculants supplied by the NIFTAL Project at the rate of 100g/kg of soybean and peanut and 90g/kg of mungbean.

Significant influences were detected on bean yield of soybean and mungbean for 2 seasons (1982-83 dry and 1982 wet).

Inoculation-30-30 kg NPK/ha obtained mean yields of 1.48 and 2.27 t/ha for soybean, and 1.31 and 1.76 t/ha for mungbean, respectively, with increases of 180 and 470 kg/ha for soybean and 140 and 110 kg/ha for mungbean over the uninoculated control at farm fertility level.

Significant effects were observed in peanut yield for 3 seasons (1981-82 dry, 1982-83 dry and 1982 wet). Inoculation-30-30 kg NPK/ha with mean yields of 1.68, 1.45 and 2.31 t/ha, respectively, gave increases of 420, 110 and 380 kg/ha over the uninoculated control at farm fertility level.

On soybean, mungbean and peanut, Inoculation 30-30 kg NPK/ha consistently produced the heaviest weight of dry matter and highest number of effective nodules.

These results indicate that yield increases could be achieved by seed Inoculation with P and K fertilization at farm fertility level. Therefore, Rhizobium technology offers an alternative to the increasing cost of nitrogenous fertilizers.

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