Soybean Adaptability to Newly Reclaimed Sandy Calcareous Soil in Egypt as Affected by Bradyrhizobia, Nitrogen and Phosphorous. (A06-joshi091836-Poster)

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Abstract:

Soybean has been recently adopted as a potential economic food legume crop in Egypt where about 90% of edible oil and 60% of food protein are imported. In order to evaluate soybean productivity in calcareous sandy soils that represent about 92% of the Egyption soils, field experiments were conducted to examine the effects of seed inoculation with Bradyrhizobium japonicum strains MIRCIN 503 and USDA 110, and chemical fertilization with various rates and forms of nitrogen and phosphorus on growth, seed yield and seed composition of two soybean genotypes, Giza 35 and Giza 82. Bradyrhizobial inoculation and nitrogen fertilization separately significantly enhanced soybean growth and yield. This enhancement was greater when soil was amended with calcium super-phosphate. When Giza 82 and Giza 35 were inoculated with bradyrhizobia and fertilized with 214 kg N/ha, they produced 3540 and 2420 kg/ha of seed yield, 22.4 and 19.6 % of oil, and 46.8 and 48.2 % of protein, respectively. Soybean yield was significantly affected by the various treatments. This effect varied significantly based on plant genotypes, bacterial strains, and types of chemical fertilizers.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 732

Keywords:

Soybean, Sandy Calcareous Soil, Legume inoculants, Bradyrhizobium japonicum