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THE EFFECT OF DIFFERENT LEVELS OF PHOSPHORUS AND POTASSIUM ON NITROGEN FIXATION AND YIELD OF SOYBEANS (Glycine max)

BY

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ABSTRACT

The importance of phosphorus and potassium in growth and development of soybeans is undisputed. Moreover, it is believed that the symbiotic nitrogen fixation is largely assosiated with the availability of these elements in soils. Since limited information is available concerning the phosphorus and potassium fertilization for soybeans in regosols, a field experiment was designed and conducted at the university farm to determine the rates of above fertilizer nutrients for maximum nitrogen fixation and optimum seed yield. Phosphorus fertilizer at rates 40, 70 and 100kg P_2O_5/ha and potassium fertilizer at rates 20, 40 and 60kg K_2O/ha, as basal application to inoculatedplants were tried in the experiment.

Results of this study indicate that the greater level of fertilizer phosphorus, the higher the rates of growth and development and the process of nitrogen fixation. The application of potassium at the rate of 40kg/ha tends to be more effective than 20kg/ha, but it's efficiency decreases when the rate is increased to 60kg/ha. Results also indicate that optimum seed yield of soybeans under local conditions is possible with 70kg/ha of phosphorus and 40kg/ha of potassium.

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