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Response of soybean cultivars to graded level of fertilizers

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SUMMARY

A field experiment to evaluate the response of soybean hybrids to fertilizer levels was conducted at Farm of Department of Agronomy, College of Agriculture, Latur (M.S.) under rainfed condition, during *Kharif* season of 2008-09. The experiment comprised of six soybean cultivar in main plots and 3 levels of fertilizers in sub plots of split plot design was replicated thrice. The results of experiment revealed that the hybrid MAUS-71 recorded significantly maximum growth attributes, yield and consequently resulted in highest monitory gain over rest of the cultivars, while MAUS-81 variety found to be at par on it in respect of seed yield and gross returns. Application of 30:60:30 kg NPK/ha recorded significantly higher growth, yield attributes and economics compared to other levels of fertilizers.

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KEY WORDS : Soybean cultivars, Effect of fertilizers, Yield attributes, Performance of cultivation

Soybean is the crop of warm temperature to tropical zone the thrising best in wide range of pH and soil types. There must be good conditions for obtaining higher yield, good yield can be achieved by balanced nutrition along with N and adequate supply phosphate and potash is highly important. Nitrogen is essential constituent of protein and chlorophyll, which is present in many other compounds of great physiological importance in plant metabolism such as nucleotide, phospholipids, enzyme, hormones vitamins, etc. Phosphorus plays important role in growth, development and maturity out of total uptake of phosphorus comes into grain, therefore, application of phosphorus is must in intensive cropping coupled with increased use of nitrogen and phosphrous, lower use of organic manures and very low rates of application or practically no application of K. The resources of K and S in most of the soil of this region have started depleting and are limiting of soil productivity, low seed production and inferior quality of oil and protein of oil seed crops are also due to various constraints. Keeping these views, the present investigation was undertaken.

EXPERIMENTAL METHODS

The field experiment was conducted during *Kharif* season 2008-09 at the experimental farm, Agronomy Section, College of Agriculture, Latur (M.S.). The soil of experimental field was clayey in texture, medium in available nitrogen (205 kg/ha) medium in available phosphorus (15.70 kg/ha), high in available potassium (479 kg/ha) and low in sulphate. The soil was slightly alkaline in reaction (8.05). The experiment was laid out in split plot design with three replications, in main plot treatments five different cultivars *viz.*, V_1-JS-335, V_2-MAUS-47, V_3-MAUS-71, V_4-JS-93-5 and MAUS-47 were taken, three graded levels of fertilizer *viz.*, F_1-15:30:15 kg NPK/ha, F_2-30:60:30 kg NPK/ha and F_3-45:90:45 were included in sub-plot. The precipitation received during crop growth season was 398.9 mm and distributed over 22 rainy days during the course of experimentation, sowing was done on 26 July 2008. The sowing was done by dibbling with 2 seeds per hill at a distance of 45 x 5 cm at about 2.5 cm depth. The complete dose of nitrogen, phosphorus sand potash was drilled at sowing uniformly in the plot.

EXPERIMENTAL FINDINGS AND ANALYSIS

The results obtained from the present investigation as well as relevant discussion have been presented under following heads :

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