



## Research Article

# Effect of cultivar and graded levels of fertilizer on quality and yield of soybean

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**Abstract :** The field experiment was conducted at Department of Agronomy, College of Agriculture, Latur (M.S.), during *Kharif* season of 2008-2009. The experiment comprised of five soybean cultivars in main plots and 3 levels of fertilizer in sub plots of split plot design was replicated thrice. Results clearly indicated that cultivar MAUS-71 at fertilizer level 30:60:30 NPK kg ha<sup>-1</sup> recorded significantly more seed yield, stalk yield, harvest index, oil yield, protein yield and phosphorus uptake.

**Key Words :** Graded levels of fertilizer, Phosphorus, Potash correction, Soybean

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## INTRODUCTION

Soybean is the crop of warm temperature to tropical zone, thriving 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 most intensive cropping coupled with increased use of nitrogen and phosphorus, 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<sub>1</sub> JS-335, V<sub>2</sub> MAU-47 were taken, three graded levels of fertilizer viz., F<sub>1</sub> 15:30:15 kg NPK/ha, F<sub>2</sub> 30:60:30 kg NPK/ha and F<sub>3</sub> 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 and potash was drilled at

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