

Research
Paper

Growth studies of soybean under different nutritional requirement

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ABSTRACT

A field investigation entitled "Growth studies of soybean [*Glycine max* (L.) Meril.] cv. MAUS-71 under different nutritional requirement" was conducted during *Kharif* season 2009-10 at AICRP for Dryland Agriculture, M.A.U., Parbhani. The experiment was laid out in Randomized Block Design (RBD) with three replications. There were eight treatments with following details. T₁-75% RDF without FYM, T₂-75% RDF with FYM @ 5 t/ha, T₃-100 % RDF without FYM, T₄-100% RDF with FYM @ 5 t/ha, T₅-125% RDF without FYM, T₆-125% RDF with FYM @ 5 t/ha, T₇- FYM @ 10 t/ha and T₈- Absolute control. Growth attributes viz., plant height, number of leaves per plant, number of branches per plant, Significantly recorded more in treatment T₄ (100 % RDF + 5 t FYM/ha). The grain yield and straw yield was also more significantly in treatments T₄ (100% RDF + 5 t FYM/ha). Based on the results it can be concluded that the treatment T₄ (100 % RDF + 5 t FYM/ha) was found beneficial in improving growth and yield of soybean. Treatment T₄ (100 % RDF + 5 t FYM/ha) recorded double yield than absolute control.

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INTRODUCTION

In India, though area is large but the productivity is very low *i.e.* 900 kg ha⁻¹ as compared to world productivity 1900 kg ha⁻¹. Average consumption of soybean in India is 4812 thousand metric tonne gaining the sixth rank in the consumption of soybean in the world. (Anonymous, 2010). Maharashtra ranks second in production of soybean after Madhya Pradesh in the country. Soybean has profitably replaced the main pulses of state other legume like mung bean and black gram. Soybean was introduced in Maharashtra state during the year 1984-1985 and it was grown only on 5.6 lakh hectare till 1994, but today the area has increased rapidly. In Maharashtra, area under soybean cultivation during 2009-2010 was 30.3 lakh hectare with total production of 29.7 lakh metric tonnes with an average productivity of 982 kg per hectare.

At present FYM which is organic source helps in increasing the yield of crop. So the different nutrient combination helps in increasing yield as well as soil physical

condition. Nutrient are second most important limiting factor of crop production after water. Most of the soil in the rainfed regions are not only thirsty but also hungry. It was well established after going high yields. The nutrient demand of crop could be met from application of recommended dose of fertilizer as well as FYM application. They help in increasing yield as well as increasing physico-chemical properties of soil. The variety MAUS-71 was recommended by Marathwada Agricultural University, Parbhani. MAUS-71 (Samrudhi) is recommended under rainfed condition in Marathwada region. Hence, MAUS-71 variety was taken in the study.

MATERIALS AND METHODS

The details of the material used and methods adopted during the course of investigation are presented in this chapter. A field experiment was conducted during *Kharif* season in 2009-10 at AICRP for Dryland Agriculture, Marathwada Agriculture University, Parbhani. The present