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RESEARCH PAPER

Nutritional effect on different growth functions in soybean

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Abstract **:** Soybean [*Glycine max* (L.) Merrill.] is a native of China. It is considered as both pulse as well as oilseed. It was introduced in India during the year 1970-71 mainly for rich protein and edible oil. The experiment was laid out in Randomized Block Design (RBD) with three replications. There were eight treatments of different nutrient application. The mean leaf area per plant increased up to 60 DAS and after it declined. The rate of dry matter accumulation was slow during initial stage up to 30 days, fast thereafter up to harvest. The effect of nutrient on dry matter accumulation was noticed after 45 days onwards. This might be due to participation of reproductive parts. Leaf area index of soybean was slow up to 30 days. It was increased rapidly up to 60 DAS then it was decreased. The treatments T_4 showed greater leaf area index (100% RDF + 5 t FYM/ha) over the control. The reduction in leaf area under control may be due to more soil moisture stress as compared to nutrient and FYM application. Various growth parameters like absolute growth rate for height, absolute growth rate for dry matter and relative growth rate for height were recorded from 30 DAS up to harvest at 15 days of interval. The growth parameters showed more value in nutrient application over the control. This might be due to more availability of nutrients and soil moisture under other treatments. Based on the results it can be concluded that treatment T_4 (100 % RDF + 5 t FYM/ha) was found beneficial in improving growth, yield of soybean as compared to other treatments.

Key Words **:** RGR, AGR, LAI, Harvest index, Biological yield, Soybean, Nutritional effect

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INTRODUCTION

Soybean [*Glycine max* (L.) Merrill.] is a native of China. It is consider as both pulse as well as oilseed. It was introduced in India during the year 1970-71 mainly for rich protein and edible oil. Soybean contains high amount of protein *i.e.* 40.00 per cent and oil 20.00 per cent. Soybean oil contains more percentage of unsaturated fat and it is cholesterol free. Therefore, it is recommended to heart patients. Soya milk is prepared from soybean which is easy to digest than cow milk. Several snacks and sweets are prepared from soya milk. The soybean oil is recommended in stomach disease and diabetes. It is also used as raw material in production of drying oil and soups.

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 largest consumer of soybean in world (Anoymous, 2010). Maharashtra ranks second in production of soybean after Madhya Pradesh in the country. Soybean has profitably replaced the main pulses of state and other legume like mung bean and black gram. Fertilizer play an important role in crop production. A substantial increase in production can be obtained by use of fertilizers. However, due to high cost of fertilizers only a few farmers can afford to apply chemical fertilizers as per recommended doses. With this view in mind, the present investigation entitled nutritional effect on different growth function in soybean was carried out at A.I.C.R.P., Dry land, M.A.U., Parbhani

MATERIALS AND METHODS

The present experiment was laid out in Randomized

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