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Research Article

Effect of potassium and integrated nutrient management on quality and economics of soybean

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Abstract : The quality components *viz.,* oil, oil yield, protein and protein yields were found to be superior under potassiun and integrated nutrient management over rest of control and other treatments. The application of 50 kg N + 75 kg P_2O_5 + 50 kg K_2O + 5 t FYM ha^{-1} was found to be superior over other treatments. The highest gross income (Rs. 36420), net monetary returns (Rs.18210) and B : C ratio (2.00) was observed in the application of 50 kg N + 75 kg P_2O_5 + 50 kg K_2O + 5 t FYM ha^{-1}. Increasing the levels of fertilizer in combination of K_2O and FYM levels enhanced the quality as well as economic of soybean.

Key Words : Integrated nutrient management, Yield, Quality soybean and economic returns, FYM

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INTRODUCTION

Soybean [*Glycine max* (L.) Merrill] is one of the important pulse and oilseed crops of the world. It becomes miracle crop of twentieth century and designated as "Golden Bean". It has high nutritive value and it is extensively grown is verusol of India because of its wider adaptability to agro-climatic condition and high market value.

The crop soybean was introduced in sixties as supplementary oilseed crop to overcome the edible oil shortage in the country. Among all oilseed crops, soybean occupied third position in the edible oil scenario of India. It contains high quality of protein 43.2 per cent and oil 19.5 per cent. It also contains 26 per cent carbohydrates, 4 per cent minerals and 2 per cent phospholipids (Halvankar *et al.,* 1994). It is rich source of Vitamin A, B and D. Being best and cheapest source of high quality protein amongst vegetable and animal protein source. The protein from soybean is equivalent to that of milk product, eggs and meat in quality, hence it is called as "poor man's meat".

Imbalance nutrition is one of the important constraints of soybean productivity in North Indian Plains. Continuous use of high level of chemical fertilizers has led to problems of soil degradation, which is proving detrimental to soybean production. A crop producing 6,720 kg / ha biomass removed about 614 kg N: 148 kg P and 486 kg K/ha. Therefore, adequate and balanced fertilization is necessary to increase productivity and quality of soybean. The supplementary and complimentary use of organic manures and bio-fertilizer improve soil physical, chemical and biological properties, fertilizer use efficiency, mitigates short supply of micro nutrients, stimulates the proliferation of diverse group of micro-organisms and plays and important role in the maintenance of soil fertility and improves the ecological balance of rhizosphere. Hence an experiment was conducted to study the performance of soybean with different integrated nutrient management systems in terms quality and economics of soybean. Fertilizers play an important role in crop production. A substantial increase in production can be

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