Effect of various nutrient management approaches for cassava (*Manihot esculenta* Crantz.) production

ABHISHEK PRATAP SINGH, P.K. SINGH, R.B. VERMA AND S.S. SOLANKEY

See end of the article for
authors' affiliations

Correspondence to :

ABHISHEK PRATAP SINGH
Department of Vegetable
Science, N.D. University of
Agriculture and Technology,
Kumarganj, FAIZABAD
(U.P.) INDIA.

ABSTRACT

The present study was carried out to standardize the nutritional requirement of Sree Prakash; a short duration cassava variety, planted on 28th April, 2005 in randomized block design with three replications at a spacing of 75 x 75 cm. Results revealed that the response of variety vary with different nutrient management options, and found to respond upto 100:50:100 kg NPK/ha + 10 tonnes FYM/ha. Economic evaluation revealed that the application of 100:50:100 kg NPK + 10 tonnes FYM/ha gave an additional return of Rs. 14753/ha over control and benefit cost ratio of 1.12, indicating the suitability of nutritional requirement of cassava.

Key words : Cassava, Sree Prakash, Nutrient management growth, Economics.

Cassava (*Manihot esculenta* Crantz.) which is generally known as Tapioca, Mauioca, and Yuca, is a major starchy root crops of tropics belonging to family Euphorbiaceae. It is a subsistence food crop grown in more than 80 countries in the world with an annual production of 164.75 million tonnes from an area of 16.37 m ha. (The Hindu Survey of Indian Agriculture, 2005). It is an important crop in the Agricultural economy of Kerala, Tamil Nadu and Andhra Pradesh. Now it is gainning popularity with increasing the demand for starchy tubers of domestic as well as industrial purposes are increasing. It is generally grown in soil which are poor inorganic matter and available N, P and K status. Application of organic manures improves the Chemical and physical properties of soil as it supplies trace of nutrients also however, indiscriminate use of fertilizers leads to soil and health hazards. Therefore, balance fertilization is necessary in order to exploit the full potential of cassava as well as to reduce health risk. Keeping these facts in mind, the present experiment was excuted to find out the suitable nutrient management options for growth, yield and quality of cassava, along with economic analysis.

MATERIALS AND METHODS

The study was carried out at MES, Vegetable Research Farm, N.D. university of Agriculture and Technology, Kumarganj, Faizabad during 2005. The soil of experimental plot was silt loam in texture having a pH of 8.7, organic carbon 0.30 per cent, low available N (120.90 kg ha^{-1}) and P (13.70 kg ha^{-1}) and rich in available K (220.15 kg ha^{-1}). The experiment was arranged in randomized block design with three replications and following treatment combinations.

T_0 = Control
T_1 = 50:50:50 kg NPK + 5 tonnes FYM ha^{-1}
T_2 = 50:50:50 kg NPK + 10 tonnes FYM ha^{-1}
T_3 = 75:50:75 kg NPK + 5 tonnes FYM ha^{-1}
T_4 = 75:50:75 kg NPK + 10 tonnes FYM ha^{-1}
T_5 = 100:50:100 kg NPK + 5 tonnes FYM ha^{-1}
T_6 = 100:50:100 kg NPK + 10 tonnes FYM ha^{-1}
T_7 = 125:50:125 kg NPK + 5 tonnes FYM ha^{-1}
T_8 = 125:50:125 kg NPK + 10 tonnes FYM ha^{-1}

Manures and fertilizers were applied as per treatment by adopting the principles of fertilizer application. Half of nitrogen and full of FYM, phosphorus and potassium were applied at the time of planting. Remaining dose of nitrogen was applied through top dressing in two installments at 60 and 120 days after planting.

The stems of Sree Prakash; a short duration variety of cassava having 2-3 cm thickness were planted at the spacing of 75 cm x 75 cm on 28th April, 2005. The recommended cultural and plant protection measures were adopted as and when required. The observations recorded on growth, yield and quality parameters were analysed statistically following the standard procedures of Panse and Sukhatme (1989). The economic feasibility