

Effect of nitrogen levels on growth and yield of turmeric

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Received 11 February 2002; Revised 02 December 2003; Accepted 20 June 2003

Abstract

An experiment was conducted during 2000-2001 to study the response of two turmeric varieties (Krishna and Selam), five levels of nitrogen (0, 40, 80, 120, 150 kg ha⁻¹) on growth and yield. The results indicated that variety Krishna responded favourably for all the characters to the application of 120 kg N ha⁻¹. The maximum rhizome yield of 277.87 and 225.43 q ha⁻¹, respectively was harvested by the application of 120 kg N ha⁻¹ with turmeric variety 'Krishna'. The interaction of nitrogen x variety was significant only for fresh weight of fingers per plant.

Keywords : crop yield, *Curcuma longa*, nitrogen, turmeric

Turmeric (*Curcuma longa* L.) plays a vital role in earning foreign exchange for the country. It is grown in rainfed and irrigated regions of Maharashtra. Planting of turmeric in these areas commences from April and continues upto the end of July. Similarly, different varieties grown in the state and nitrogen is used at different levels by the cultivators for turmeric. No systematic research has been done on these aspects of turmeric cultivation. Therefore, these studies were initiated at Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola to determine suitable variety and nitrogen level to achieve higher production of turmeric.

The experiment was conducted during kharif season of the year 2000-2001. The treatments comprised of two turmeric varieties (Krishna and Selam) and five levels of nitrogen (0, 40, 80, 120, 150 kg ha⁻¹) and their combinations in a factorial Randomised Block Design with four replications. The mother rhizomes

of these varieties were planted in the first week of June in ridges and furrows at 8 to 10 cm deep with a spacing of 30.0 cm x 22.5 cm. The net plot size was 3.0 m x 2.25 m. Half dose of nitrogen as per the treatment in the form of urea and full dose of P₂O₅ and K₂O in the form of single super phosphate and muriate of potash, respectively, were applied at the time of planting. Remaining half dose of nitrogen was applied, 45 days after planting.

Data were recorded from five plants selected at random in each plot. The observations on plant height, leaf area prior to harvest of rhizomes and fresh weight of mother rhizomes, number of fingers per plant, length of fingers per plant, girth of fingers per plant, fresh weight of fingers per plant and fresh yield per hectare after harvesting the crop were recorded. Leaf area was computed by multiplying the product of length and breadth of the leaf with conversion factor (0.72).

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cultivated with the application of nitrogen @ 120 kg ha⁻¹ for obtaining better growth and higher yield under Akola conditions.

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