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Research Paper

Role of micronutrients on growth, yield and quality production of turmeric

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ABSTRACT

Turmeric is very important spice crop commercially grown throughout the country from last many centuries; it is used in various commercial industries as well as in pharmaceutical industries. It has a great demand in domestic as well as in international market. Due to various schemes sponsored by Spice Board of India and National Horticulture Mission its acreage significantly increased in last few years especially in central India. Considering the importance of turmeric crop it is well documented fact that micronutrients especially zinc and iron played very important role in almost all horticultural crops. In respect of turmeric it was found that zinc and iron alone with FYM played very important role in mother-rhizome production as well as fresh yield of rhizome and fingers and many more related attributes.

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KEY WORDS : Turmeric, Micronutrients, Farm yard manure, Growth, Yield, Quality

Turmeric (*Curcuma longa*) is very important spice crop commercially grown throughout the country from last many countries, it is used in various commercial industries as well as in pharmaceutical industries. It has a great demand in domestic as well as in international market, due to its wider adaptability and also various schemes sponsored by spice board of India and National Horticulture Mission. Its acreage significantly increased in last few years especially in Central India.

It is a well documented fact that micronutrients especially zinc and iron played very important role in almost all horticultural crops. Considering importance of turmeric crop the present experiment was undertaken to study the role of micronutrients on growth and quality production of turmeric.

RESEARCH PROCEDURE

The experiment was conducted at Main Garden, Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. Experiment was laid in Randomized Block Design with three replications. The treatments were T_1 – 20 t FYM ha^{-1}, T_2 – 20 t FYM + 15 kg Zn ha^{-1}, T_3 – 20 t FYM + 30 kg Zn ha^{-1}, T_4 – 20 t FYM + 15 kg Fe ha^{-1}, T_5 – 20 t FYM + 30 kg Fe ha^{-1}, T_6 – RDF (200:100:100 kg NPK ha^{-1}), T_7 – control (without any application of manures/fertilizers). Turmeric rhizomes were planted at the sides of ridges having plot size 5.40 x 4.50 m^2 (gross plot) and 4.95 x 4.25 m^2 (net plot) with spacing of 45 x 25 cm.

Initial soil status was soil pH (8.57), soil EC (0.38 dSm^{-1}, organic carbon (0.73%), available N, P_2O_5 and K_2O (157.89, 20.16 and 418.88 kg ha^{-1}).

Calculated quantity of fertilizers and FYM with respective quantities of micronutrient were applied as per the treatments. The fertilizers of urea, single super phosphate and muriate of potash were used as source of N, P_2O_5 and K_2O, respectively for T_6 treatment. One fifth of N and K_2O and full dose of P_2O_5 were applied as basal dose. The remaining quantity of N and K were applied as top dressing in split dose of 30, 60, 90 and 120 days after planting. Calculated quantities of FYM with respective dose of micronutrient as per treatment were also applied. Keeping T_7 as control (without any application of fertilizer/ manure).

Growth, yield and quality parameters were recorded with following observation.

Growth:

Height of plant, number of leaves, girth of stem, number of tillers, length of leaf and breadth of leaf.