



Effect of foliar spray of micronutrients and plant growth regulators on growth and yield of turmeric (*Curcuma longa* L.)

M.M. DHANOJI

ABSTRACT

The field experiment was conducted during the *Kharif* season 2004 and 2005 at Agril. Research Station, Bheemarayangudi under irrigated condition to know the effect of foliar spray of Fe, Zn and plant growth regulators on growth and yield in Turmeric. Two years pooled data revealed significant increase in the fresh yield of turmeric with lihosin 0.05% spray followed by alar 0.05% and FeSO_4 -0.5%+ ZnSO_4 -0.05% spray as compare to control. The increase in yield of turmeric due to lihosin spray may be attributed to its primary effect on restructuring of plant so as to produce optimum photosyntheses and improving the source-sink relation there by improvement in the yield. It is evident from the results that decrease in plant height and leaf length and improvement in the size and number of fingers per plant was due to lihosin spray.

Correspondence to :

M.M. DHANOJI
Department of Crop
Physiology, College of
Agriculture,
BHEEMARAYANGUDI
(KARNATAKA) INDIA

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India is called as the “Spice bowl of the World” for production of variety of spices with superior quality. Turmeric is called as Indian saffron and is the largest producer and consumer of turmeric (*Curcuma longa* L.) in the world. Turmeric had been grown throughout the country in 18 states. Karnataka occupies fourth position which contributes 3.94 per cent of the total turmeric production in India. The instability in turmeric production were examined in terms of area and productivity in important states of South India more so with Karnataka (Angels and Hosmani, 2005). Hormones and nutrients play an important role on the vegetative and reproductive growth of any plant. At present, several synthetic hormones are employed by the farmers to boost the growth in the vegetative phase and subsequently to increase the yield. The application of PGRs and nutrients decreases the leaf senescence by retaining more leaf nitrogen and chlorophyll (Srinathan *et al.*, 2006). Accordingly, this trail was laid out to study the influence of PGRs and micro nutrients on the productivity of turmeric in Krishna CADA area of Northern Karnataka.

MATERIALS AND METHODS

The field experiment was conducted during the *Kharif* season 2004 and 2005 at Agricultural Research station, Bheemarayangudi. The experiment was laid out

in Completely Randomized Block Design with three replications involving BDT -1 variety. Seeds were sown in rows 45 cm apart with plant to plant spacing of 10 cm. There were nine treatments including control and water spray. The micronutrients like FeSO_4 -0.5% and ZnSO_4 -0.05% and their combination effect was studied. Among the plant growth regulators, alar- 0.05%, lihosin- 0.05%, agri gold 0.05%, and BA⁶-0.002% were used. The treatments were imposed as a foliar spray to 120 days old crop. The plant height was recorded from base of the plant to tip of the leaf. The leaf area per plant was computed by graphic method. Number of leaves per plant, plant height, leaf length, maximum leaf width, fingers per plant were worked out from the tagged five plants and average was computed and presented on per plant basis.

RESULTS AND DISCUSSION

Significantly higher turmeric fresh yield was recorded with lihosin -0.05% spray (15.2t/ha) followed by alar 0.05% spray (14.8 t/ha) and foliar spray of FeSO_4 -0.5%+ ZnSO_4 -0.5% as compare to control (11.9 t/ha) (Table 1). The increase in the turmeric yield upon lihosin spray may be attributed to significant increase in the yield parameters like size (fingers length and width), finger numbers per plant as compared to control. Thus, it indicates that lihosin spray might have maintained internal