THE ASIAN JOURNAL OF HORTICULTURE
Volume **8** | Issue 2 | December, 2013 | 696-700

Research Paper

Article history **:**
Received : 04.09.2013
Revised : 19.10.2013
Accepted : 10.11.2013

Studies on effect of plant growth regulators and micronutrients on growth, floral characters and yield of tuberose (*Polianthes tuberosa* L.) cv. 'PRAJWAL'

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ABSTRACT : Field experiment was conducted during May 2009 to April 2010 in tuberose cv. Prajwal to study the growth and yield as influenced by plant growth regulators and micronutrients in Factorial Randomized Block Design. The treatment comprised of dipping the bulbs in two growth regulators namely, GA_3 @ 200 ppm for 12 h, CCC @ 5000 ppm for 1 h were given at planting and foliar spray of micronutrients namely, H_3BO_3 0.1 %, $ZnSO_4$ 0.5 % and $FeSO_4$ 0.2 % were applied either alone or in combinations on 60, 120, 180 and 240 days after sprouting. Observations were recorded on sprouting, growth, flowering and yield parameters. The results revealed that dipping of bulbs in GA_3 @ 200 ppm for 12 hours recorded 100 per cent sprouting and early sprouting by 5 days over control (12.75 days). Dipping the bulbs in GA_3 @ 200 ppm and foliar spray of all the micronutrients (B, Zn and Fe) recorded highest plant height (49.56 cm) at first spike emergence, total leaf area per clump (2317.20 cm2), spike length (100.59 cm), number of flowers per spike (45.74), improved flower length (7.24 cm), enhanced flower yield per hectare (16.24 t) and highest estimated net income of Rs. 6,44,444 per hectare. The dipping treatments with CCC@ 5000 ppm for 1 h significantly increased the number of leaves at first spike emergence (25.29), diameter of unopened flower bud (3.78 cm) and extended duration of flowering (21.38 days). The increase in yield is resulted by the assimilatory power of growth regulators and contributory role of all the micronutrients involved. Economic analysis also revealed that micronutrient sprays at 60, 120, 180 and 240 days after sprouting could be beneficial when dipping of bulbs in GA_3 @ 200 ppm for 12 h and this will be quite profitable to the farmers cultivating in the marginal soils.

KEY WORDS : Tuberose, Gibberellic acid, Cycocel, Boric acid, Zinc sulphate, Ferrous sulphate

HOW TO CITE THIS ARTICLE : Ganesh, S., Soorianathasundaram, K. and Kannan, M. (2013). Studies on effect of plant growth regulators and micronutrients on growth, floral characters and yield of tuberose (*Polianthes tuberosa* L.) cv. 'PRAJWAL'. *Asian J. Hort.*, **8**(2) : 696-700.

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