



Effect of brassinosteroids and micronutrients on the yield and nutrients uptake by tomato

K. SUHATHIYA AND R. SINGARAVEL

ABSTRACT

A field experiment was carried out during January-April 2007 in Annamalai University, Experimental Farm to study the effect of Brassinosteroids and micronutrients on the yield and uptake of nutrients by tomato. The experimental soil was sandy loam, with pH-7.80, EC-f.30 dS m⁻¹, organic carbon - 7.10 g kg⁻¹ and OPA extractable Zn - 0.98 mg kg⁻¹ and hot water B - 0.47 mg kg⁻¹. The following nine treatments T₁ -absolute control, T₂ -water spray, T₃ -foliar spray of 0.5% ZnSO₄ + 0.1 % borax, T₄ - steroidal plant growth regulator TOE 520 @ 150 ml ha⁻¹, T₅ - steroidal plant growth regulator TOE 520 @ 175 ml ha⁻¹, T₆ -steroidal plant growth regulator TOE 520 @ 200 ml ha⁻¹, T₇-T₄ + foliar spray of 0.5% ZnSO₄ + 0.1 % borax, T₈ - T₅ + foliar spray of 0.5% ZnSO₄ + 0.1 % borax and T₉ - T₆ + foliar spray of 0.5% ZnSO₄ + 0.1 % borax were studied in randomized block design with three replications. Tomato var PKM-1 was grown as test crop. The results of the study indicated that the foliar application of micronutrients along with brassinosteroids significantly increased the yield and nutrient uptake by tomato. Among all the treatments, the combined application of ZnSO₄ @ 0.5% + Borax @ 0.1 % along with Brassinosteroids @ 200 ml ha⁻¹ recorded significantly higher content and uptake of N, P, K, Zn and B besides improving the yield.

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INTRODUCTION

Tomato (*Lycopersicon esculentum* L.) belongs to the family Solanaceae is an important vegetable crop. It contains rich source of vitamins, minerals and essential amino acids. Application of growth regulator and micro nutrients on improvement of growth and nutrient uptake of tomato was reported by Gupta and Raj (1986) and Pinaka Paneswara Reddy (2002). Vegetables require a wide range of nutrients for growth and development, so as to express their maximum genetic potential. Zinc plays an important role in chlorophyll synthesis, auxins synthesis, water uptake, photo synthesis and in turn improving the yield. Boron as essential micro nutrients, it governs the significant functions of translocation of sugar, reproduction and germination of pollens fruits and seed setting. In Tamil Nadu, India about 41 and 33 per cent of the total area is

deficient zinc and boron, respectively. Growing of, tomato in such nutrient deficient soil is also one of the reason for low productivity. Hence, the present study was carried to find out the effect of Brassinosteroids and Micronutrients on the nutrient content and uptake of tomato.

MATERIALS AND METHODS

A field experiment was conducted during Jan-April 2007 in the vegetable complex of the Horticulture, Annamalai University, and Tamil Nadu. The soil of study area was well drained sandy loam with pH-7.80, EC-1.30 dSm⁻¹, Organic carbon-7.10 g kg, available N-245.14kg ha⁻¹, available P-12.08 kg ha⁻¹ and available K-319.42 kg ha⁻¹. The DTPA extractable Zn was 0.98 mg kg⁻¹ and hot water B was 0.47 ml kg⁻¹. The following

Correspondence to :

K. SUHATHIYA, Department of Soil Science and Agricultural Chemistry, Faculty of Agriculture, Annamalai University, ANNAMALAI NAGAR (T.N.) INDIA

Authors' affiliations:

R. SINGARAVEL, Department of Soil Science and Agricultural Chemistry, Faculty of Agriculture, Annamalai University, ANNAMALAI NAGAR (T.N.) INDIA