

## Effect of integrated nutrient management on nutrient uptake, fruit yield and quality of Tomato (*Lycopersicon esculentum* L)

T. Chaitanya, G. Padmaja, P. Chandrasekhar Rao and K.B.Suneetha Devi

Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, ANGRAU, India

Tomato is one of the important vegetable crops grown in India. According to National Horticultural Board (2010), tomato is cultivated in 0.61 million hectares with a production of 11.97 million tonnes and productivity of 19.3 tonnes per hectare. In Andhra Pradesh it is cultivated in 0.74 lakh hectares with production and productivity of 1.4 million tonnes and 19 tonnes per hectare respectively. A field experiment was conducted during kharif with 10 treatments in Randomised Block Design and replicated thrice, with a view to study the effect of integrated nutrient management on nutrient uptake, fruit yield and quality of tomato. The initial soil was sandy loam in texture, slightly alkaline (7.9 pH) in reaction, non saline (0.13 dS m<sup>-1</sup>), low in organic carbon (4.6 g kg<sup>-1</sup>) and available nitrogen (230.7 kg N ha<sup>-1</sup>), medium in available phosphorus (25.4 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup>) and potassium (284.5 kg K<sub>2</sub>O ha<sup>-1</sup>). The highest total N uptake (106.35 kg ha<sup>-1</sup>) was recorded from the treatment receiving 100% RDNF through inorganic fertilizer. Whereas P uptake (17.40 kg ha<sup>-1</sup>) and K uptake (61.82 kg ha<sup>-1</sup>) were highest in treatments receiving RDNF through 75% inorganic fertilizer + 25% VC. The fruit yield (84.97 q ha<sup>-1</sup>) of tomato was also highest in treatment receiving RDNF through 75% inorganic fertilizer + 25% VC and was on par with treatments receiving RDNF through 75% inorganic fertilizer + 25% PM and also 100% inorganic fertilizer. With regard to quality parameters, the ascorbic acid content varied from 23.83 to 30.83 with a mean value of 28.27 mg 100g<sup>-1</sup> of fruit. The lycopene content varied from 2.09 to 4.05 with a mean value of 3.63 mg 100g<sup>-1</sup> of fruit. The highest values of ascorbic acid (30.83 mg 100g<sup>-1</sup>) and lycopene (4.05 mg 100g<sup>-1</sup>) were recorded from treatment receiving 50% Vermicompost + 50% Poultry manure. Based on the results obtained, it can be concluded that the combined use of 75% RDNF through inorganic fertilizers + 25% RDNF through vermicompost or poultry manure is ideal for obtaining higher tomato fruit yield when grown on light textured soils.

### Biography

T.Chaitanya studying Ph.D in Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, Rajendranagar, ANGRAU, Hyderabad, Andhra Pradesh.

[tukkanichaitanya@gmail.com](mailto:tukkanichaitanya@gmail.com)