

Research Article

Soil fertility status of tomato (*Lycopersicon esculentum*, Mill) grown in areas of Hassan district, Karnataka

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Received : 22.08.2012; Revised : 26.09.2012; Accepted : 31.10.2012

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Summary

Hassan and Belur taluks are the major tomato growing areas in the district and hence, this study was restricted to these two talukas. Surface soil samples from a depth of 0-15 cm were collected from 80 tomato-grown plots. Study revealed that the soil pH ranged from neutral to alkaline range (6.9 - 8.5) while, the electrical conductivity was in the range of 0.05 to 0.95 dS m⁻¹. The soil organic-C content varied to a large extent 1.3 to 12.8 g kg⁻¹. The soil organic-C content was low in more than 50 per cent of tomato soils. The available nitrogen content ranged from 205.0 to 376.3 kg ha⁻¹. More than 70 per cent of tomato fields were found low in nitrogen. In contrast, both available phosphorus and potassium contents were found higher in majority of tomato grown soils. The available phosphorus was found high in almost all soils. Similarly, the available potassium content was higher in 90 per cent plots. None of the tomato grown soils were found lower in calcium while, 9 per cent of the fields recorded magnesium in lower. The available sulfur content was low in almost 68 per cent of tomato soils (5.6 ± 2.5 mg kg⁻¹) and only 9 per cent of fields recorded higher sulphur content. The DTPA-Fe, Mn, Cu and Zn were found higher in 93, 91, 57 and 68 per cent of the tomato grown soils, respectively

Key words : Soil fertility, Tomato, Nutrient status

How to cite this article : Raj, T.S. Punith, Nagaraja, M.S. Dhumgond, Prabhudev, Reddy Sharan Bhoopal and Shivakumar, K.M.(2012). Soil fertility status of tomato (*Lycopersicon esculentum*, Mill) grown in areas of Hassan district, Karnataka. *Asian J. Soil Sci.*, 7(2): 288-291.

Introduction

Tomato, an important solanaceous fruit vegetable plays a vital role in Indian diet by virtue of its nutrients, delicious taste and various modes of consumption and uses. Among vegetables, tomato (*Lycopersicon esculentum*, Mill) is an important crop grown throughout the world. Soil fertility is a major constraint that affects all the aspects of crop production (Mbah, 2006). Higher production of tomato depends upon native soil fertility status, adoption of high yielding varieties,

appropriate crop management techniques including precise and balanced fertilization, timely irrigation, control of diseases and insect pests. The farmers are growing tomato with excess application of fertilizers. A preliminary survey in vegetable growing areas of Hassan revealed that the farmers are applying about 340:360:390 kg ha⁻¹ of N:P₂O₅:K₂O, the nutrient application which is almost 1½ times the recommendation. Excess application of major nutrients are known to exhibit antagonistic effect on secondary and micro-nutrient (Mengel and Kirkby, 1982). There are specific reports on phosphorus