

Research Article

Nutrient status of sugarcane growing soils of Theni district, Tamil Nadu- A soil series based study

■ M. VIJAYA KUMAR AND A.R. MOHAMED HAROON

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MEMBERS OF RESEARCH FORUM :**Corresponding author :**

M. VIJAYA KUMAR, Department of Soil and Environment, Agricultural College and Research Institute, Tamil Nadu Agricultural University, MADURAI (T.N.) INDIA
Email: vijayagri1985@gmail.com

Co-authors :

A.R. MOHAMED HAROON, Department of Soil and Environment, Agricultural College and Research Institute, Tamil Nadu Agricultural University, MADURAI (T.N.) INDIA

Summary

Sugarcane is the most important commercial crop of Tamil Nadu and Theni district of this state produces on an average about 4.67 lakh tonnes every year. The three major soil series in which sugarcane is cultivated are taken as a basis for organizing the survey and collection of soil samples and farmers data during 2012-13 to diagnose the potentials and constraints of soils and to assess the fertility and cane productivity. About 400 soil samples collected from 0-30 cm depth were subjected to physical, physico-chemical and chemical analysis adopting standard analytical procedures. Correlation was worked out between important soil parameters. The study indicated that the average yield of cane in this district was 70-75 t ha⁻¹, however extreme yields of 154 t ha⁻¹ and 45 t ha⁻¹ are also being obtained in some packets of the district. Variations in yield were assessed and soil series based nutrient survey indicated that the low organic matter content and available N status along with increasing deficiency of available sulphur in cane growing soils were the major limitations in achieving the maximum cane yield. Among the soil series, the Palaviduthi series registered average available higher N, P, K, S and Zn contents of 209, 56, 540, 20 kg ha⁻¹ and 1.60 mg kg⁻¹, respectively indicating the better prospects of higher yields of sugarcane in the soils of this series. The low available S status (less than 10 mg kg⁻¹) in 52 per cent of soil samples of this series has to be managed for achieving higher cane productivity. However, the results of the study showed invariably higher P and K status in all the sugarcane growing soils of the district necessitating the need for refinement of P and K fertilizer schedule in this dominant sugarcane zone of Tamil Nadu.

Key words : Sugarcane, Fertility, Productivity, Deficiency, Tamil Nadu

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