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Research Article

Distribution of DTPA-extractable and total micronutrients in association with properties of some reclaimed salt affected soils of southwest Punjab, India

JAGMOHAN SINGH **AND** N.S. DHALIWAL

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MEMBERS OF RESEARCH FORUM :

Corresponding author :
JAGMOHAN SINGH, Krishi Vigyan Kendra (P.A.U.), MUKTSAR (PUNJAB) INDIA
Email: jagmohanpau@gmail.com

Co-authors':
N.S. DHALIWAL, Krishi Vigyan Kendra (P.A.U.), MUKTSAR (PUNJAB) INDIA

Summary

An investigation was carried out to study surface and profile distribution of total and diethylenetriamine penta acetic acid (DTPA) - extractable zinc, copper, manganese and iron in some reclaimed salt affected soils of southwest Punjab. The Southwestern zone of Punjab is deficient in available micronutrients, but has large reserve of micronutrients. These soils were originally salt affected and were found in relatively low-lying terraces at varying stages of deterioration. During the last 20-25 years, these soils have been reclaimed by the application of gypsum followed by heavy irrigation (flooding) to leach down soluble salts from the solum. In order to study DTPA-extractable and total micronutrients and their association with soil properties, four pedons representing different categories of reclaimed salt affected soils were taken from the Southwest Punjab. Total and DTPA-extractable micronutrients were higher in surface horizons and decreased in subsurface horizons. The total content varied from 26 to 76 mg/kg for zinc, from 9 to 42 mg/kg for copper, from 300 to 475 mg/kg for manganese and from 1.99 to 3.82 per cent for iron. The total content of micronutrients increased with increase in clay content and cation exchange capacity (CEC), whereas DTPA- extractable micronutrient increased with increase in organic carbon content and CEC, and decreased with increasing pH and sand content. The total reserve of Zn and Cu showed an influence on availability of these respective micronutrients.

Key words : DTPA-extractable, Micronutrients, Reclaimed, Solum, Leached.

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