

Research Article

Distribution of DTPA-extractable micronutrient and their relationship with soil properties of Sawaimadhopur tahsil, district Sawaimadhopur, Rajasthan

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Summary

This manuscript focuses on the available micronutrients (Fe, Cu, Zn, Mn and B) status and their relationship with soil properties. Seventy surface soil samples and plant samples, each collected from wheat growing fields of representing 29 villages of Sawaimadhopur Tahsil, District Sawaimadhopur, Rajasthan in India were analyzed for the basic soil parameters viz., pH, EC, and OC. The available micronutrients (DTPA extractable) viz., Fe, Mn, Cu, Zn and B were investigated by Fe, Cu, Zn, Mn and B using atomic absorption spectrophotometer (ECIL, AAS-4129). Collected soil samples have fewer than three categorized as loamy, sandy loam clay and clay loam. The soils were moderately calcareous in nature and having 3.50-9.50 % CaCO₃, low in organic carbon (0.30-0.72%), cation exchange capacity (20-30 coml (p⁺)/kg), pH (7.50-8.90) and EC (0.15-0.89 dS/m) values indicated that soils were found to be non-saline and moderately alkaline in nature. The availability of micronutrients and their relationship with soil properties were also studied. Only 4 % of analyzed soil sample were marginal and only 72 % soil were found sufficient in zinc and their values from 0.40-5.14 mg/kg. While the remaining micronutrients (Fe, Co, Mn and B) shown to be sufficient and their values ranged between 3.60-10.00, 0.26-3.97, 3.72-10.77 and 0.72-4.77 mg/kg, respectively. DTPA excreable micronutrients indicating significantly positive correlated with silt, clay, organic carbon and CEC of soils, whereas, significantly negative correlated with sand, calcium carbonate and pH of the soils. The availability of micronutrients in wheat grains and straw positively correlated with silt, clay, organic carbon and CEC and negatively correlated with sand, CaCO₃ and pH of soils.

Key words : Micronutrients, Physico-chemical, Seed, Sufficient straw, Non-saline

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