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VERTICAL DISTRIBUTION OF DTPA-EXTRACTABLE MICRONUTRIENTS AND ITS CORRELATION WITH SOIL PROPERTIES IN SELECTED SOIL PROFILES OF BIRBHUM DISTRICT OF WEST BENGAL

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The present study was undertaken to assess the vertical distribution of DTPA-extractable micronutrients viz. zinc, copper, iron and manganese in relation to soil properties in five selected soil profiles, one each from Sainthia, Suri II, Rampurhat II, Md Bazar and Nalhati I block of Birbhum district of West Bengal. Collected soil samples were analysed for pH, electrical conductivity, organic carbon, textural class (% sand, silt, clay) and DTPA- extractable micronutrients using standard analytical methods. The soil texture varied from silt loam to silt. Based on the fertility ratings, pH of the profile soils was strongly acidic to neutral, showing increasing trend with depth. Its value ranged from 5.012- 7.121. Electrical conductivity was found in normal range. Low to medium organic carbon content was found and its distribution was found decreasing with increasing depth. Iron, manganese and copper were estimated to occur above critical level, whereas low to medium available zinc was found. The available zinc, iron, manganese and copper contents in soils ranged from 0.264 - 1.618 mg/kg, 5.158- 51.820 mg/kg, 1.788- 20.720 mg/kg and 0.324- 3.364 mg/kg respectively. In general, all the micronutrients show decreasing trend with increase in depth. The pH of the collected soil samples showed significant and negative correlation with available iron (r= -0.603) and manganese (r= -0.524*) whereas pH correlated non-significantly and negatively with available zinc (r= -0.343) and copper (r= -0.484). Soil organic carbon showed significant and positive correlation with all the micronutrients. Non-significant and negative correlation was found between electrical conductivity and available micronutrients except available iron which showed significant and negative correlation with electrical conductivity (r= -0.560*).*