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Distribution of available Potassium in soils of Rainfed areas Representing different Agro climatic Zones of Jammu and Kashmir

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Abstract

Soil samples from thirty profiles (depth wise) from rain fed areas representing three agro-climatic zones (viz. sub-tropical, intermediate and temperate zone) of extreme north-west India were collected and analyzed for physical and chemical characteristics and available K content. Soils were slightly acidic to basic in nature and the texture varied from sandy loam to clay loam. The organic carbon content of the soils was in the range of 0.30 to 1.08 per cent. The available potassium ranged from 47 to 187 mg kg^{-1} in the surface and 32 to 155 mg kg^{-1} in sub-surface soils. The available K content in the soils was in the order temperate > intermediate > sub-tropical zone soils. The range of this form of K in the soils under investigation varied between 32 to 85, 48 to 139 and 99 to 187 mg kg^{-1} in sub-tropical, intermediate and temperate zone soils, respectively. A decreasing trend in available K with increasing depth was observed in all the thirty soils under study. Available K was positively and significantly correlated to organic carbon ($r = 0.814^{**}$ in surface and $r = 0.707^{**}$ in sub-surface soils), silt ($r = 0.477^{**}$ in surface and $r = 0.409^{**}$ in sub-surface soil), clay ($r = 0.551^{**}$ in surface and $r = 0.536^{**}$ in sub-surface soil) and CEC ($r = 0.732^{**}$ in surface and $r = 0.652^{**}$ in sub-surface soil) and was negatively but significantly correlated to sand content ($r = -0.547^{**}$ in surface and $r = -0.515^{**}$ in sub-surface soil).

Top

Key words

Available K, Agro-climatic zone, Soil characteristics.