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Spatial and Vertical Distribution of Sulphur in Acidic Soils of Western Himalayas

Gourav, Narender K. Sankhyan, Pardeep Kumar, G.D. Sharma[1] and M.C. Rana[1]

Department of Soil Science, [1]Department of Agronomy, Grassland and Forages
CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur-176 061, India
E-mail: gchouhan1@gmail.com

Abstract: Deficiency of sulphur in soil is increasing day by day and it is the present era need to address this problem to achieve the goal of sustainability. In order to study the status of sulphur in acidic soils, the present investigation was carried out in Western Himalayas. Around 500 soil samples were collected randomly from cultivated soils. Processed soil samples were analysed for pH, clay content and available S following standard procedures. Five soil profiles were also studied to understand the vertical distribution of sulphur fractions through the soil profile. In study area, textural class, pH (1:2.5) and available sulphur ranged from loamy sand to clay, 4.23 to 7.00 (extremely acidic to neutral) and 11 to 65 kg ha^{-1} (deficient to sufficient), respectively. Around 35 per cent of the soil samples were deficient in available sulphur. Available S exhibited a significant positive correlation with clay and silt, whereas significant negative correlation was found with sand and pH. In soil profiles study, all the S fractions decreased with increase in depth and highest contents of all the S fractions were found in surface layer. Sulphur fractions followed the order as total-S>organic-S>heat soluble-S>sulphate-S>water soluble-S in all the studied locations.

Keywords: Sulphur status, Soil profiles, Sulphur correlation, Texture, pH