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Kinetics of Adsorption and Desorption of Boron in Major Soils of Lesser Himalayas

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***Abstract*:** All the forms of boron were positively and significantly correlated with pH, EC, CEC, clay and silt content, and negatively with organic carbon and sand content. About 50 % of the soils were deficient in available boron. The parabolic diffusion kinetic model was best in describing the rate of boron adsorption, followed by Elovich and zero order model, whereas, the first order, second order and power function equations failed in describing the boron adsorption kinetics. The desorption kinetics showed that boron was desorbed from two separate sites. The total desorbable boron was higher and faster during initial stages and then became slower. The power function kinetic model best described the boron desorption, followed by Elovich kinetic model.

Key Words: Adsorption/desorption, Boron, Lesser Himalayas, Modelling