

POSSIBLE EXTRACTION EFFICIENCY OF IRON FROM LATERITE SOIL AT LOWER PH: PRELIMINARY FINDINGS

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Laterite soil is one of the main sources of iron, which can be extracted from dissolution techniques. Sri Lanka has wide distribution of lateritic soils which are not in use except as a raw material. This study aimed to identify the possible extraction efficiency of iron from laterite soils under lower pH range and different size fractions. Lateritic soil samples were collected from Kirindiwita area of Gampaha, Sri Lanka. Two dry sample batches were prepared in different gran size fractions as sand fraction (2 mm-63 μ m) and silt with clay fraction (<63 μ m). These batches were then subjected to leaching for 5 hours in a range of pH varying from 1 to 7. The pH of solutions was controlled by adding 0.1 M HCl and 0.1 M NaHCO₃. The extractions were analyzed for Fe³⁺ concentration using Atomic Absorption Spectroscopy (AAS). Contrast to the literature, the results of the present study revealed that the optimum pH of the maximum iron extraction in HCl addition is one (1) for both particle size batches of laterites. The results might be affected by the acid medium and the soil characteristics. However, higher iron extraction efficiency is recorded for sand fraction rather than silt with clay fraction indicating less clay contents. Further studies are recommended to identify the effect of soil characteristics on the above results.

Keywords: laterite, iron, extraction, pH