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| Title | FRACTIONATION OF Fe AND Mn IN A CATENA OF MADHUPUR SOIL OF BANGLADESH | | |
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| Abstract |  |
| The research was undertaken to determine the distribution of Fe, Mn and their behavior with respect to soil properties in different land types in an ideal soil catena of Madhupur terrace soils of Gazipur District, Bangladesh. Three soil series such as Gerua, Kalma and Khilgaon were identified from three land types such as high, medium high and medium low land. Soil samples were collected from each land type such as surface, subsurface and substratum. Results indicate pH of the soils was acidic in nature and there was a small change of pH with the land types. The textural classes in most soils were silt loam, silty clay loam and silty clay. Amount of total Fe and Mn concentrations vary significantly with ranges from 0.22 to 4.89%, 40 to 1055 µg g-1, respectively at different depth of different land types but highest amount of total Fe and Mn concentrations are observed in the top soils of the catena and their concentrations decreased from high land to medium low land. Moreover, the purpose of the sequential extraction or fractionation was to solubilize the Fe and Mn in the exchangeable (Exch.), organic matter (Org.), Mn oxide (Mn-O), amorphous Fe oxide (Am. Fe-O), crystalline Fe oxide (Crys. Fe-O) and residual (Res.) fractions. Entire soil catena, Fe was primarily associated with Crys. Fe-O fractions followed by Am. Fe-O fractions. In the Gerua soil, Mn was associated with Mn-O and Am. Fe-O followed by other fractions. In the Kalma soils, Mn was predominately in Res.>Exch.>Crys. Fe-O followed by other fractions. In the subsurface and substratum, Khilgaon soils trend of variation was Res.>Exch.>Crys. Fe-O followed by the other fractions. Results suggest that metal species are significantly absorbed and accumulated by the soils but did not show significant contamination. Therefore, these findings may allow the evaluation of soil management techniques to limit nutrient mobility and plant availability of microelements for ultimately minimize their transfer into the food chain. | |

**Please specify which Sustainable Development Goal (SDG) (s) falls under your research:**

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| Goal 1 | No Poverty | Goal 2 | Zero Hunger |
| Goal 3 | Good Health and Well-Being | Goal 4 | Quality Education |
| Goal 5 | Gender Equality | Goal 6 | Clean Water and Sanitation |
| Goal 7 | Affordable and Clean Energy | Goal 8 | Decent Work and Economic Growth |
| Goal 9 | Industry, Innovation and Infrastructure | Goal 10 | Reduced Inequalities |
| Goal 11 | Sustainable Cities and Communities | Goal 12 | Responsible Consumption and Production |
| Goal 13 | Climate Action | Goal 14 | Life below Water |
| **Goal 15** | **Life on Land** | Goal 16 | Peace, Justice and Strong Institutions |
| Goal 17 | Partnerships for the Goals |  |  |