

**Research Article**

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# Effect of topological settings on the soil acidity indices and fertility of East Jaintia Hills, Meghalaya

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**Summary**

The topological settings of the 10 locations of adjacent paddy field near coal mine belt of East Jaintia Hills significantly influenced in causing extreme soil acidity and affect the bio-availability of soil nutrients. It was found that two categories of acidities such as extreme acidity (mean pH 3.16) and moderately acidity (mean pH 4.22) were generated. Results indicate decreased of acidity along the topological settings from top to toe with affirmative relationship with Ex. acidity (0.37 to 1.19 meq/100g), Ex. aluminium (2.86 to 4.35 meq/100g), change in lime requirement (13.75 to 28.67 t/ha) and slight changes in effective CEC (ECEC). Soil contain high organic carbon (SOC, 2.08-2.43%), available nitrogen (N, 293.35 to 319.71 kg/ha), sulphur (S, 21.01 to 30.98 kg/ha) and iron (Fe, 222.17 to 241.78 ppm), but low available phosphorus ( $P_2O_5$ , 14.36 to 19.31 kg/ha), DTPA extractable zinc (Zn, 0.27 to 0.44 ppm) and microbial activities. Observations reveals that soils in low laying topographical settings of the paddy field were found maximum in almost all the parameters in comparison with other topographical settings of the study area.

**Key words :** Coal mine paddy soil, Topological settings, Soil acidity indices, Available nutrients

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