



Identification of Soil Quality Indicators for New Alluvial in Rice Based Cropping Systems of Jorhat District, Assam

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Abstract: Rice based cropping system is one of the most important cropping system grown year after year in Jorhat district of Upper Brahmaputra Valley Zone of Assam. The present investigation was undertaken for soil quality assessment in new alluvial rice based cropping systems. Through principal component analyses, critical soil quality indicators identified in New Alluvium Rice-Fallow Cultivated sequence were BD, CEC, TN, Av Fe, DHG, OC, Av B, EC, Av Zn, Av. K₂O and Ex Ca. Among these, most sensitive indicator of soil quality was BD and its less value contributed to 16.74% towards SQI. MDS indicators in New Alluvium Rice-*Toria* cultivated sequence were DHG, MWD, pH, Av Fe, BD and Min N and among them highest contribution of 35.04% towards SQI was from BD. Porosity, pH, MWD, CEC, Av B, MBC and Av P₂O₅ were MDS for New Alluvium Rice-Vegetable Cultivated sequence and porosity was the most sensitive indicator of soil quality. The contribution of soil porosity towards SQI was 33.45 per cent.

Keywords: Upper Brahmaputra valley, Jorhat, Principal component analysis, Rice, Soil quality indicators, Soil quality index
