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## **Soil Taxonomy and Mineralogy of Varying Geological Parent Material in Moist Deciduous Forests in Southern Western Ghats, Kerala**

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**Abstract:** *The significance of research on clay minerals generated during soil formation is enormous. In this study, the taxonomy and mineralogy of the soils from two moist deciduous forests with different parent material origins, i.e., charnockite and khondalite, were analysed. Soil profiles up to 1.50 m depth were dug in the designated ecosystems, and soil samples were collected from each horizon. The soils in both forest systems were found to be acidic, with pH values ranging from 4.6 to 5.3. The soils from these systems have been designated as Ultisols. The mineral assemblages in the soil fractions of both forest systems were dominated by chlorite, hydroxyl interlayered vermiculite, feldspars, mica, kaolinite, gibbsite, and quartz. In contrast to the ‘anti-gibbsite effect’, gibbsite and HIV variants were discovered in forest soils in the present study. Despite the fact that the parent materials for the two forest systems, charnockite and khondalite, were different, identical weathering patterns were observed.*

**Keywords:** Electron microscopy; Ultisols; Weathering; X-ray diffraction.