



# Impact of Seasonal Variations in Physico-chemical Characteristics of Forest Soil under Veerakkal area, Manar Beat, Western Ghats, India

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**Abstract:** This study observed the seasonal variations in the soil nutrients in Veerakkal forest area, Manar beat, Karamadai Range, Western Ghats, India during March 2018 to February 2019 at variable depth of 0-30 cm for four sites viz., *Pongamia pinnata*, *Terminalia arjuna*, *Gardenia resinifera* and *Celtis phillipensis*. The overall assessment of seasonal observation indicated that in rainy season, the sand and silt particles were maximum (75.03 and 25.5%, respectively) at 0-30 cm depth. The total soil moisture content ranged from 8.85 to 38.62%. The water holding capacity ranged between 15.69 to 41.82%, in particular. The *Pongamia pinnata* exhibited highest water holding capacity (41.82%). The highest bulk density was in *Gardenia resinifera* (1.39 g/ccs) for 0-10 cm depth. The soil porosity on seasonal variation was significantly higher at 20-30 cm depth for all sites. The study site was slightly acidic in the soil of *Pongamia pinnata* and *Terminalia arjuna* and it was alkaline nature of soil in *Gardenia resinifera* and *Celtis phillipensis*. The total soil organic carbon was ranged between 1.04 to 3.20%. The range of highest nitrogen content of the soil was estimated in *Terminalia arjuna* (531.6 kg ha<sup>-1</sup>) followed by *Pongamia pinnata*, *Gardenia resinifera* and *Celtis phillipensis* in rainy season. Among the seasonal interpretations, the available phosphorous and potassium content under natural forest in winter season was comparatively higher than rainy and summer. In the overall assessment on the impact of seasonal variations on connection with soil depth under physico-chemical characters indicated that significant variations in four study sites.

**Keywords:** Western Ghats, Physico-chemical properties, Soil depth, Seasons

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