Vol. 45, No. 1, pp 28-39, 2017
Indian Journal of Soil Conservation
Online URL:http://indianjournals.com/ijor.aspx?target=ijor:ijsc&type=home

# Assessment of productivity potential of some soils of Aravali hills based on parametric approach

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**ARTICLE INFO**

***Article history:***

Received : February, 2016
Revised : November, 2016
Accepted : December, 2016

***Key words:***
Aravali,
ER upland,
Land productivity,
Land potentiality,
Topography,
Transect

**ABSTRACT**

Six representative soil profiles were collected from different landform units of ER upland to assess land productivity index based on parametric approach. Soils, developed on different physiographic units *viz.*, hill, pediments, valley, very gently sloping, nearly level plains were studied for their characterization, classification and potentiality evaluation. Morphologically soils showed considerable color variations with dominant hue of 10YR. The sand, silt and clay content in soils of ER upland ranged from 8.10 to 53.87%, 28.73 to 45.67% and 16.07 to 49.75%, respectively. The Bulk density showed increasing trend with the depth and varied from 1.43 to 1.68 Mg $M^{-3}$. Soils on valley and plains were well developed as compared to those on hill and pediments. The soils are classified as lithic Ustorthents ($P_1$ and $P_2$), Typic Haplustepts ($P_3$, $P_4$ and $P_5$) and Typic Haplusterts ($P_6$). The productivity of hill and pediments soils was extremely poor for crop (1.57%), pasture (5.89%) and tree (0.12%). Agriculture productivity of valley, pediments and plains ($P_3$ -29.43%, $P_4$ -31.07%, $P_5$ -27.62% and $P_6$ -31.07%) was assessed as average. With adoption of improved package of practices like moisture conservation, addition of organic manures *etc.*, the productivity class of these soils can be upgraded to good (from 50.40 to 53.87%). The potentiality of ER upland soils for crop, pasture and commercial crops production can be improved as indicated by coefficient of improvement (varied from 0.93 to 5.23%). The soils on Sawantgarh series ($P_4$) and Raitoda series ($P_6$) had the highest potentiality for crop and pasture production.