

Soil in India

Introduction

Soil is the mixture of rock debris and organic material.

The major factor that determine soil's characteristics are parent material, climate, vegetation, time etc

Major constituents of the soil are mineral particles, humus, water & air.

A soil horizon is a layer generally parallel to the soil crust, whose physical characteristics differ from the layers above and beneath.

Soil profile

Soil horizon is classified into three categories collectively known as Soil profile

Horizon A is the top most zone where organic materials stored with minerals, nutrients and water, necessary for the growth of the plants.

Horizon B is the Transition zone between A and C, it contains matter derived from A & B

Horizon C is composed of loose parent material hence, it is the layer of first stage of the soil formation process and eventually forms the above two layers.

Classification of soil

Soils were classified on the basis of their inherent characteristics and external feature including texture, color, slope, and the moisture content in the soil.

Soil survey of India, 1956, made comprehensive study of soil.

on the basis of genesis, color, composition and location, the soil of India have been classified as - Alluvial soil, Red soil, Black soil, Laterite soil, Forest & mountain soil, Arid & desert soil, saline, Alkaline, peaty & Marshy soil

Alluvial Soil

Alluvial soils are formed mainly due to silt deposition by Indo-Gangetic Brahmaputra rivers, cove about 46 % of total area.

Alluvial soil are immature and have weak profile due to recent origin.

Alluvial soil are normally rich in potash, but poor in phosphorous.

This soil is suited for Rice, Maize, Wheat, Sugarcane, oilseeds etc.

This soil divided into- 1- Khadar - enriched with fresh silts, low laying frequently inundated by flood. 2- Bhangar- old soil, lies above the flood level.

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Red soil

- Develops on crystalline igneous rocks in the area of low rainfall, especially in the eastern and southern part of the Deccan plateau.
- The red color is due to the presence of iron oxide.
- Mainly found in peninsula from Tamil Nadu in the south to Bundelkhand in the north and Raj Mahal in the east to Kathiawad in the west.
- Red soil normally have poor content of nitrogen, phosphorous, humus.
- Good for Wheat, Pulses, Tobacco, Millets Potato etc

Black soil

- Formed due to Weathering of these basaltic rock which emerged during fissure eruption.
- also known as the Regur and cotton soil. which is stretch over the part of Gujarat, Maharashtra, Madhya Pradesh, Andhra, Jharkhand up to Raj Mahal hills.
- It has high water retaining capacity which is good for cotton cultivation.
- The soil rich in iron, calcium, potash, lime, magnesium, aluminium.
- The soil deficient in Nitrogen, phosphorous and organic matter.

Laterite soil

- Mostly the end product of weathering.
- formed under condition of high temp & heavy rainfall
- Heavy rainfall promote leaching of soil whereby lime and silica leached away and soil rich in oxide of iron and aluminium compound.
- Mainly found in the hill of western Ghats, Odisha, Jharkhand, Garo hills.
- soil are suitable for cultivation of rice, ragi, sugarcane, cahew nuts, coffee.

Forest-Mountain soil

- Mainly heterogeneous soil found on the hill slope covered by forest.
- It is thin layered and the profiles and horizons are poorly developed.
- Due to fast drainage, it has been vulnerable to soil erosion.
- Mainly found in Himalayan foothills, mountain slope of western ghats.
- Generally used for rubber, Bamboo, tea, coffee and fruit plantation.
- They are deficient in potash, phosphorous and lime.

