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SOIL TYPES OF INDIA

Alluvial soil

Black soil

Red soil

Lateritic soil

Arid and Desert soil

Saline and Alkaline soil

Forest and Mountain soil

Peaty and Marsh soil

Definition of Soil

Soil is the upper layer of earth in which plants grow, a black or dark brown material typically consisting of a mixture of organic remains, clay, and rock particles.

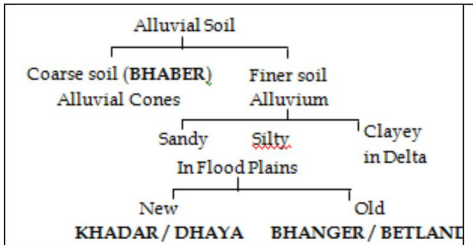
ICAR classification

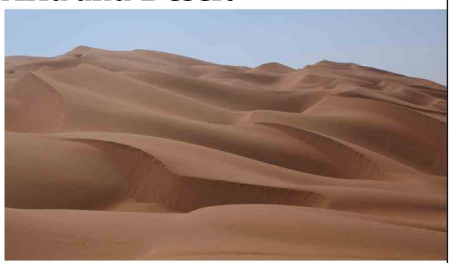
Indian Council of Agricultural Research (ICAR) divided the Indian soils into eight major groups. (1) Alluvial soils, (2) Black soils, (3) Red soils, (4) Lateritic soils, (5) Forest and Mountain soils, (6) Arid and Desert soils, (7) Saline and Alkaline soils and (8) Peaty and Marshy soils.

Reasons for various soil type formation

Physiography
Climate
Vegetation
Structure/ Relief

Soils Types	Characteristics	Distribution	Rich in:	Lacks in:	Crops grown
Alluvial 	About 43% which covers an area of 143 sq.km. Depositional soil – transported and deposited by rivers, streams etc. Highly fertile. Sand content decreases from west to east of the country. **Classification** **Bhabar** (Coarser Alluvium) **Bhangar** (Old alluvium) **Khadar** (New alluvium) **pH range: 6.5-8.4** **Colour:** Light Grey to Ash Grey. **Texture:** Sandy to silty loam or clay.	Ganga and Brahmaputra river valleys ; deltas of Godavari and Krishna ; plains of Uttar Pradesh, Uttaranchal, Punjab, Haryana , West Bengal and Bihar ; Coastal strip of peninsular India	Potash and Lime	Nitrogen, Humus and Phosphorous	Large variety of Rabi and Kharif crops such as wheat, rice, sugarcane, cotton, jute etc.

					
Black (Regur soil) 	Regur means **cotton –** best soil for cotton Most Fertile soil of India Formed due to weathering of Igneous rock over basaltic tableland. High water retaining capacity. Swells and becomes sticky when wet, shrink when dried causing **Self-ploughing**. **Classification** **Dark Black** (in upper Deccan, most fertile) **Medium Black** (in upper Deccan, medium fertile) **Light Black** (in lower Deccan, least fertile) **pH range: 6.5-8.4** **Colour:** Deep black to light black. **Texture:** Clayey.	Maharashtra and Malwa plateaus , Kathiawar peninsula, Telengana and Rayalasema region of Andhra and northern part of Karnataka. Tamil Nadu	Lime, Iron, Calcium. Magnesia, Alumina and Potash,	Phosphorous , Nitrogen and organic matter	Cotton, sugarcane, jowar, tobacco, wheat, rice etc.
Red 	Seen mainly in low rainfall area. **Classification** **Red yellow** (in tropical thorny) **Red brown** (in tropical deciduous) **pH range: below 5.5-7.5** **Colour:** Red because of Ferric oxide. Lower layer is reddish yellow or yellow. **Texture:** Sandy to clay and loamy. Porous, friable structure.	Aravallis, Rain shadow sayadris, Telengana, southern states of Kerala , Tamil Nadu and Karnataka and Chota Nagpur plateau (Jharkhand)	Iron and Potash	Nitrogen, Phosphorous , humus, lime, nitrogen and potash. (Practically infertile but responds to irrigation well)	Wheat, rice, cotton, tobacco, sugarcane and pulses

Lateritic 	Latin - 'Later' means Brick. Formed due to high leaching in high temperature - high rainfall areas. Lime and silica will be leached away from soil. Organic matters of soil will be removed fast by the bacteria and humus will be taken quickly by trees and plants making humus content also low. **pH range: below 5.5** **Colour**: Red colour due to iron oxide. **Texture**: very soft when wet and very hard when dry.	Assam hills, hill of summits of Kerala and Karnataka and eastern Ghats region of Orissa	Iron oxide and potash	Organic matter, Humus, Nitrogen, Phosphate and Calcium	Ragi, Sugarcane, Cashew nuts and rubber.
Arid and Desert 	In Arid and Semi-Arid conditions completely developed due to climate. High salt content. Lack of moisture and Humus. Kankar or Impure Calcium carbonate content is high which restricts the infiltration of water. **pH range:** **7.6-8.4** **Colour:** Red to Brown. **Texture:** Sandy / Coarse	Rajasthan, Northern Gujarat and southern Punjab	Soluble salts, phosphate	Humus, Nitrogen	Only drought resistant and salt tolerant crops such as barley, rape, cotton, millets maize and pulses. Great possibility of reclaiming these soils if proper irrigation facilities available (Indira Gandhi Canal

					Command Area)
Saline and Alkaline 	Salt-impregnated. Soils are liable to saline and alkaline efflorescence and are known by different names such as reh, kallar, usar, thur, rakar, karl and chopan. Excessive amounts of Sodium and Magnesium cause Salinity, while higher amount of Calcium cause Alkalinity. **pH range: more than 8.5**	Andhra Pradesh and Karnataka. In the drier parts of Bihar, Uttar Pradesh, Haryana, Punjab, Rajasthan and Maharashtra,	Sodium, Potassium, Magnesium	Nitrogen and Calcium	Unfit for agriculture. But with irrigation and mixing lime, gypsum. Anti-salinity crops like rice and sugar cane, cotton, wheat, tobacco etc.
Forest and Mountain 	In Hill slopes covered by forests. Deposition of organic matter derived from forest growth. **pH range: 5.0-6.5 (**due to excessive presence of less decomposed humus) **Texture**: Fine textured soils in river valleys or in outwash plains, In other hilly parts general stony and shallow poor in organic matter. **Colour**: Brown	Himalayan region, Western and Eastern Ghats, some parts of Deccan plateau	Humus, Nitrogen	Potash, Phosphorus and Lime	Plantations of tea, coffee, spices and tropical fruits South India and wheat, maize, barley and temperate fruits in J & K, HP and UK.
Peaty and Marsh	In humid regions as a result of accumulation of large amounts of organic matter in the soils.	Coastal areas like Orissa, West Bengal,		Phosphate and potash content	When properly drained and

	**Colour**: Black due to presence of organic matter **pH range** <4.5(highly Acidic)	Tamil Nadu and Kerala in various patches.			fertilized, soils produce good crops of rice