

Soil in Maharashtra

- Soil is a thin layer of the earth's crust that acts as a natural medium for plant growth.
- Soil is a mixture of rock particles and humus.
- Although soil is considered a non-living thing, it works for a various living things, from small worms and insects, to reptiles. Healthy soil is essential for a healthy ecosystem.
- Soil formation and quality depends on the environment. Soil is formed by the gradual breaking down of rocks. This process is called weathering.

Three factors contribute to the formation of soil:

- 1) Wind
- 2) Water
- 3) Climate

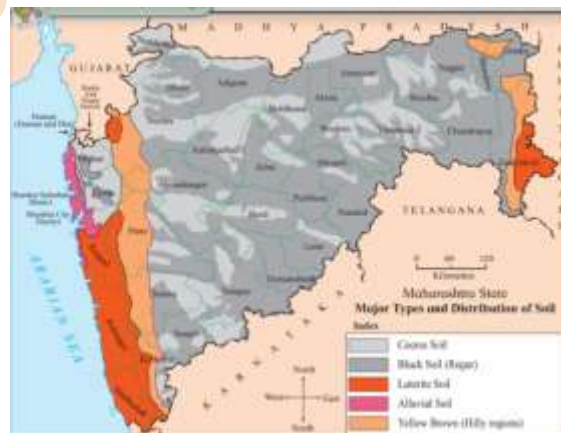
- The nature of soil depends on the rock from which it is made and the type of plants that grow in it.

Soil is made up of four constituents:

- 1) Minerals (45%)
- 2) Organic substance (5%)
- 3) Water (25%)
- 4) Air (25%)

Soil types in Maharashtra:

There are different types of soil in Maharashtra. More than 80% of Maharashtra is composed of basalt rock. As a result, Maharashtra has a large amount of black soil formed from basalt rock. The following types of soils are generally found in Maharashtra:



1) Black soil

- This soil is also called 'lava soil' or '*regur* soil'.
- This soil is formed from the fissures of igneous rock called basalt.
- The black color of soil is due to the presence of Titaniferous magnetite.



Features:

- These soils have high moisture retention capacity. Therefore, many crops can be grown in this soil with the help of irrigation.
- Black soil does not drain quickly. Therefore, due to over-irrigation, these soils become swampy.
- The main reason why black soil retains water is because it has high lime content.

Region:

- This soil is found in more than 3/4 of the total area of Maharashtra.
- In Maharashtra, this soil is found in the basins of the Godavari and Bhima-Krishna rivers.
- The highest thickness of this soil is found in Tapi river basin.
- This soil is found in all the districts of Marathwada and also in Yavatmal, Akola, Washim, Amravati districts in West Vidarbha.

Crops: This soil is very useful for cotton. Apart from cotton, sorghum, tur, bajra, wheat, sugarcane etc. are grown in this soil.

2) Laterite soil



- The word laterite has been derived from the Latin word that means brick.
- This soil is formed by long term processing of *jambha* rock.
- These soils are rich in iron so they get 'red' or 'yellow' color.

Features:

- These soils are very low in Nitrogen, Potassium and Organic matter. Therefore, the soil is less fertile for agriculture.
- But this soil is very useful for orchards.
- This soil cannot retain moisture, so it is unsuitable for irrigation.
- These soils are rich in iron, aluminum and titanium. That is why there are more aluminum deposits in this soil.

Region:

- This soil is found in the southern part of the Sahyadri Mountains as well as in the eastern part of the hilly region as well as in the eastern part of Ratnagiri and Sindhudurg districts.
- This soil is also found in the western part of Satara and Kolhapur districts.

Crops: Cashew and mango are important crops in this soil.

3) Red soil



- This soil is formed from ancient Archean, Vindhyan and Kadappa type rocks.
- This soil is found in high rainfall areas.
- This soil is formed from different rocks in different areas:
 - 1) Archean - East Vidarbha, North and South Konkan
 - 2) Schist and Gneiss - East Maharashtra
 - 3) Basalt - Western Maharashtra

Features:

- Due to high content of iron (iron peroxide) this soil has got red color.
- These soils are low in Potassium, Phosphorus, Calcium and Organic matters.
- It improves drainage and responds quickly to chemical fertilizers.
- This soil is less useful for agriculture.

Region: This soil is found in the Western Ghats of Maharashtra as well as in Bhandara, Gondia, Chandrapur, Gadchiroli districts.

Crops: Saga forests are found mainly in this soil.

4) Alluvial soil



- This soil is formed due to sedimentation in river basins.
- Alluvial soils are found on river banks and coastal areas.

Features:

- Sandy loam soils are rich in organic matter and humus.
- This soil has high moisture retention capacity, so it is fertile.
- It has low potash content.
- The color of this soil is pale yellow.

Region:

- This soil is found in the basins of the Godavari, Krishna, Bhima, Panchganga, Tapi rivers.
- Sandy loam soils are also found along the Konkan coast.

Crops: In this soil rice, nachani, *pophali* as well as sugarcane, wheat, vegetables are grown.

5) Clay soil

- Due to high sediment content in this soil, water does not seep easily.
- This soil retains water for a longer period of time; hence it is called 'Clay soil'.

Features: This soil is fertile as it does not drain quickly.

Region: This soil is found in the northern part of Nagpur, Gondia, Gadchiroli and Chandrapur districts.

Crops: This soil is good for rice crop.

Other crops like wheat, sorghum, sugarcane are also grown.



Soil erosion and degradation

- A layer of soil (top layer of soil) gets removed due to wind or water. This means that the soil gets eroded. Running water, climate and diversity in physiography are reasons of soil erosion. The soil quality may get lowered due to certain reasons. This is called degradation of soil. To obtain a higher agricultural yield, chemical fertilizers, insecticides, weedicides, etc. are used. The excessive spraying of chemicals and use of chemical fertilizers leads to soil degradation.
- Excessive irrigation draws the salts from the soil upwards and makes the soil saline and then unproductive. Due to excessive use of chemicals their residues remain in the soils for many years. They become a threat to the existence of microorganisms in the soils. It leads to lowering of the humus content in the soil and the plants do not get micronutrients. If the pH of the soil thus gets disturbed it is a sign of soil degradation.