

# CHARACTERISTICS AND FORMING PROCESSES OF SOIL

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# INTRODUCTION

Soil is a mixture of organic matter, minerals, gases, liquids, and organisms that together support life. Earth's body of soil, called the pedosphere, has four important functions: as a medium for plant growth, as a means of water storage, supply and purification, as a modifier of Earth's atmosphere, as a habitat for organisms, as a protector from water loss problems

All of these functions, in their turn, modify the soil and its properties.

# CHARACTERISTICS OF SOIL

1. CHEMICAL PROPERTIES
2. PHYSICAL PROPERTIES
3. BIOLOGICAL PROPERTIES

# CHEMICAL PROPERTIES

1. PH or Soil acidity/alkalinity
2. Organic Matter Content
3. Soil Chemistry

# PHYSICAL PROPERTIES

1. Texture
2. Structure
3. Colour
4. Soil Consistency
5. Hydraulic conductivity/soil porosity

# BIOLOGICAL PROPERTIES

1. Earthworms
2. Microbial biomass
3. Microbial Community Composition



# SOIL FORMING PROCESSES

KNOWN AS “PEDOGENESIS”

Russian Geologist VASILY DOKUCHAEV in 1883 stipulated that soil formation occurs over time under the influence of climate, vegetation, topography and parent material. He demonstrated this using the soil equation:

$$S = f(cl, o, p)tr,$$

Where, S= soil, f= function, cl= climate, o= organism, p= parent material, tr= relative time.

# CONT.

The same equation was modified by American soil scientist Han Jenny to clorpt, which means soil is a functional result of climate, organism, relief, parent material and time,

*Imp: the human factor also plays a important role.*

# SOIL FORMING PROCESSES

1. Fundamental Soil forming processes
2. Special soil forming processes

# FUNDAMENTAL SOIL FORMING PROCESSES

1. Humification
2. Eluviation
3. Illuviation
4. Horizenization

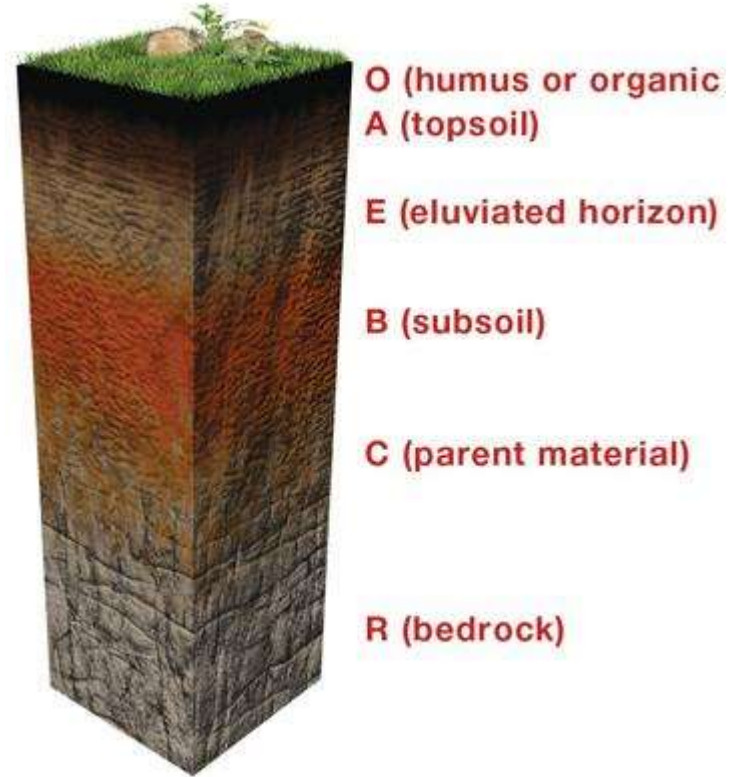
# SPECIAL SOIL FORMING PROCESSES

1. Calcification
2. De-calcification
3. Laterization
4. Gleization
5. Salinization
6. De-salinization
7. Podzeliization
8. Solonization/Alkalization
9. Sodonization/de-alkalization
10. Pedoturbation

# SOIL PROFILE

Layers of soil

- a. O horizon
- b. A horizon
- c. B horizon
- d. R horizon



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