

SUBJECT: AGRICULTURALSCIENCE

TOPIC: SOIL TYPES AND PROPERTIES

CLASS: SS2

WEEK: WEEK TWO (2)

TERM: 1ST TERM

MEANING OF SOIL

Soil can be defined as unconsolidated weathered materials found in the uppermost layer of the earth surface on which plant grow.it provide support and nutrient for the plants.

TYPES OF SOIL

The three types of soil are; sandy soil, clay soil, and loamy soil.

SANDY SOIL

A soil to be sandy if the proportion of sand particles in a sample of the soil is high. The particles are mainly quartz (SiO_2).

PROPERTIES OF SANDY SOIL

1. Sandy soil is coarse, grained and gritty.
2. It is loose with large pore spaces.
3. It absorb and loses water easily
4. It is not sticky when wet and cannot form a cast or ribbon.
5. It is well aerated with low water holding capacity.
6. Sandy soil heat up easily during the day and cool down quickly in the night.
7. It supports leaching; hence it is low in plant nutrients.
8. It does not support waterlogging and erosion.
9. Sandy soil has grey or brown colour.

METHODS OF IMPROVING SANDY SOIL

1. Planting of cover crops
2. Application of compost manure
3. Application of farmyard manure
4. Mulching the soil
5. Avoidance of bush burning

ECONOMIC IMPORTANCE OF SANDY SOIL

1. It is good for cultivation of cassava cotton ,groundnut etc

2. It is good for building construction when mixed with cement.

CLAY SOIL

A soil is said to be clayed if the proportion of clay in a sample of the soil is very high.

PROPERTIES OF CLAY SOIL

1. The particles are fine, powdery and smooth when dry.
2. The particles are sticky and moody when wet.
3. The particles are tightly bound together with little pore (air) spaces.
4. It has high water capacity.
5. It is poorly aerated.
6. It does not support leaching, hence it contains plants nutrients.
7. It is hard when dry and sticky when wet.
8. It can easily form a ribbon or cast when molded.
9. It supports waterlogging and erosion.
10. It has a grey or brownish colour.

METHODS OF IMPROVING CLAY SOIL

1. Liming
2. Addition of organic manure

LOAMY SOIL

Loamy soil is a mixture of sand and clay particles with a high proportion of organic matter.

PROPERTIES OF LOAMY SOIL

1. Loamy soil is moist, loose with moderate –sized pore space.
2. The structure breaks easily when wet and friable when dry
3. It has non-powdery and non-sticky texture.
4. It can be support erosion and waterlogging.
5. It is easily be worked or cultivated
6. It contains lots of organic matter (humus).
7. It well aerated and it can hold water.
8. It is the best soil for the cultivation of crops.it is dark brown in colour.

COMPONENT/COMPOSITION OF SOIL

The compositions of the soil by percentage are;

1. Soil mineral matter 45%
2. Soil water 25%
3. Soil lair 25%

4. Soil living organism 5%

FACTORS AFFECTING SOIL FORMATION

The five major factors which control soil formation are climate parent materials, topography, biotic factor and time.

1. **CLIMATE:** Climate is the average weather condition of a place over a long period of time. The Elements of climate are temperature, rainfall, wind, and pressure.
2. **PARENT MATERIALS:** These are the materials (previously existing rocks) from which the soil is formed. The parent material are igneous, sedimentary and metamorphic rocks, they determine the type, physical characteristics and chemical composition of the formed.
3. **TOPOGRAPHY:** This is the sharp of the ground in relation to the underlying rock of the earth surface.
4. **BIOTIC FACTORS:** The activities of soil living organisms helps to speed up the process of soil formation in the following ways:
 - i. Microbes helps in the decomposition of organic matter
 - ii. The leaves which fall from trees decay to increase the humus content of the soil.
 - iii. Organisms produce carbon dioxide which promotes weathering of rock.
5. **TIME:** All the above factors takes a lot of time to in ally give rise to the soil.
 1. It takes a long time for a small piece of rocks to disintegrate into grains of soil.
 2. It takes a long time for plants to decay to form soil.
 3. It takes a short time to form immature soil.

ASSGNMENT

1. List two methods of improving clay soil.
2. List five properties of sandy soil