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PHYSICO-CHEMICAL ANALYSIS OF SOIL

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ABSTRACT

The soil is the most important constituent to fulfillment of all the basic needs of human beings as well as plant. Soil is an important component of our agriculture. Soil take most crucial position in global cultivation of wheat, rice, mustard, vegetables and fruits etc. The soil is occupied by Indian agriculture and reason of physical, chemical condition of whatever land is inevitable for proper implementation of the other management practices. Thus the physico-chemical study of territory is very significant because both physical and chemical properties which bear upon the soil productivity. This, physico-chemical study of soil is based on various parameters like pH, electrical conductivity, texture, moisture, temperature, soil organic matter, available nitrogen.

Keyword: -Soil composition, physico-chemical, soil contamination, soil samples

INTRODUCTION

The physico-chemical soil and agriculture production will depend on the soil types and the parameters of the soil used for. Now a days we need soil testing is increased due to some soil composition, constituent like pH, textures, moisture and other component because of the soil composition mitigate the quality of soil in other words the soil quality is diminish of all the parameters. Soil quality may include capacity of the water retention, carbon sequestration, plant productivity, waste remediation and other function or, it may be defined narrowly. This report traces the development of the concept of land quality explores the use of soil chemical and physical attributes as determinants of soil quality. For farming soil scientist to play a major role in the assessment and advancement of sustainable soil management in making the concept of soil quality as indicator of sustainability. After doing all these things the specific process or properties that changes in independent to each other by combined actions of physical and chemical attributes.

PH

The most significant property of soil is its pH level, Its effects all other parameters of soil Therefore, pH is considered while analysing any kind of soil. If the pH is less than 6 then it is said to be an acidic soil, the pH range from 6-8.5 it's a normal soil and greater than 8.5 then it is said to be alkaline soil.

Texture

Soil texture is a classification instrument used both in the field and laboratory to determine soil classes based on their physical texture. Soil texture can be determined using qualitative methods such as texture, and quantitative methods such as the hydrometer method based on Stokes' law.

Moisture

Water content or moisture content is the quantity of water contained in the soil, such soil called soil moisture, Moisture is one of the most important properties of soil.

Soil Temperature

Soil temperature, soil has a temperature range between -20 to 60 °C The temperature of the soil is the most important property because it shows its effect on the chemical, physical and biological processes related to growth of vegetation. Soil temperature changes with season, time of day, and conditions of climate are depends on the ratio of the energy absorbed.

Electrical Conductivity

Electrical conductivity is very important property of the soil. It is used to check the quality of the soil it is a measure ions present in solution. The electrical conductivity of a soil solution increases the concentration of ions. Electrical conductivity is a very quick, easy and inexpensive method to check quality of soil.

Nitrogen

Nitrogen is the most crucial element obtained by plants from the soil and is a bottleneck in plant growth, about 80% of the atmosphere is nitrogen gas. Nitrogen gas dissolved into water where it can be fixed convert by blue-green algae to ammonia for algal use. Nitrogen can also enter lakes and streams as inorganic nitrogen and ammonia nitrogen is found in all soils, and is required by all living creatures. In plants, nitrogen is the nutrient required in the largest amounts.

Organic Carbon

The organic matter is an important of the soil that contributes to soil fertility. Soil organic carbon is the basis of soil fertility. It release nutrient for plant growth, increasing soil organic carbon improves soil health and fertility. Organic carbon ranges from 0.52 to 0.72 %. Medium proportion of organic carbon.

Phosphorous

Phosphorous is a mineral that naturally occurs in many foods and is also available as a supplement. It is a non-metallic element of the nitrogen family. Important element in every living cell. It helps in energy storage and transfer in study area phosphorous ranges 15.11 to 54.13 kg/ha.

Potassium

Potassium plays a major role in different physiological processes of vegetation. Potassium is major nutrient for the production of for the greenery. It is agitator in nature. Potassium is one of the most important element for the development of greenery plant. Potassium is a key plant element although it is soluble in water, little is lost from undisturbed soils because as it is released from dead plants and animal excrements, it quickly become strongly bound to clay particles, and it is retained ready to be adsorbed by the roots of other plants. It is agitator in

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Conclusion

The higher nutrient fertility status in irrigation fields might be associated with intensive cultivation and plantation of cash crops like sugarcane, cotton, fruit crops etc. In which use of fertilizers as practiced by the cultivator. Classification criteria the study area soils showed normal pH. The majority of soil samples low status of available phosphorous was found in all soil samples the generated nutrient status information can serve as an effective tool for farmers and policy makers the selection of a standard set of specific soil properties as indicators of soil quality can be complex and may vary among soil systems. From the study of reviewing papers it is concluded that study of soil quality can be carried out by different parameters. Most of the parameters are quite higher or lower than acceptable limits. Therefore, it is very important to put a total ban on the human activities which are responsible for soil quality deterioration. The result of this study covers the effects of soil compaction on soil physical and chemical properties like moisture content, soil texture, soil pH, EC, soil organic content at different depths. The soil with the highest sand and clay percentage has the highest value of soil compaction value and vice versa.

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