



Introduction

Soil is one of Earth's most essential natural resources, serving as the foundation for all terrestrial life. It is a complex and dynamic mixture of minerals, organic matter, water, air, and living organisms that interact to support plant growth, regulate water flow, and contribute to various ecological processes. From agriculture to forestry, from construction to environmental sustainability, soil plays a vital role in shaping human civilizations and ecosystems worldwide. Soil plays a critical role in crop production and irrigation management, serving as the foundation for plant growth and the medium through which water and nutrients are supplied to crops. By understanding soil properties, moisture content, nutrient availability, and salinity levels, farmers can implement tailored irrigation and soil management strategies to optimize crop yields, conserve water resources, and promote sustainable agriculture.

Objectives of the course

- To determine the quality of the soil for irrigation.
- To understand the effects of soil quality parameters in irrigation and to learn the laboratory techniques.

Course outcomes

After successful completion of course the student will be able to

- Understand that Soil quality testing is an important part of environmental monitoring.
- Know about quality of soil, if it is poor, it can lead to decreased plant diversity and disrupt **ecosystem** stability.
- Gain knowledge on the measurement of quality of soil. Physical properties of soil quality include Specific Gravity, Moisture content and water holding capacity. Chemical properties involve parameters such as P^H , E.C, Cl^- , Ca^{2+} , Mg^{2+} , SAR. Biological properties involve Organic matter. The above parameters are studied in soil of Narayanapuram surroundings.
- Know the fact that Soil quality sampling and testing allows owners to establish baseline values, ultimately increasing the knowledge and understanding surrounding the specific issues.

Report on Certificate Course in Soil Analysis

2019-20

The Department of Chemistry of SAS GDC , Narayanapuram conducted a certificate course in Soil analysis from 22.07.2019 to 26.08.2019 with 30 Hrs duration. Dr.V.Durga Praveena acted as the instructor for the course.13 Students of II B.Sc (MPC&BZC) enrolled for the course which is important for them as they hail from rural areas and mostly from farming families.

The course commenced on the AN of 22.07.2019.A total number of 30 instruction hours(Both Theory and practicals) were conducted to enhance the knowledge levels of the student on soil analysis. As a part of this course, students were given hands on training at Dept. of Chemistry. The students observed different analytical techniques used in soil analysis for two days. Soil testing is a low-cost practice to learn about the ability of soil to support crop growth. With knowledge of what each soil test value means, growers can become more aware of the crop input decisions to minimize risk and maximize profits.

At the end of the course a test was conducted for 50 marks with 40% of marks(20 Marks) as eligibility criterion for the completion of the course. On the last day of the course certificates were issued to the students who had successfully completed the course.

