AGRICULTURE, FOOD TECH & RURAL DEVELOPMENT

Information available in audio.

SOIL QUALITY ANALYSIS TOOL

PROBLEM-

As the quality of soil plays an important role in the growth of crops alongwith the production of crops. So, the correct content of nutrients/organic matter, moisture and the pH range plays an important role in the growth and production of crops. Regular monitoring and analysis of the soil, along with sustainable farming practices, can contribute to long-term soil health and improved fertility.
To further improve soil fertility through analysis, we can delve into more detailed soil testing methods. Soil testing can include assessing macro and micronutrient levels such as nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, zinc, iron, and others. Understanding these nutrient levels allows for precise fertilization recommendations to meet the specific needs of the soil and crops.

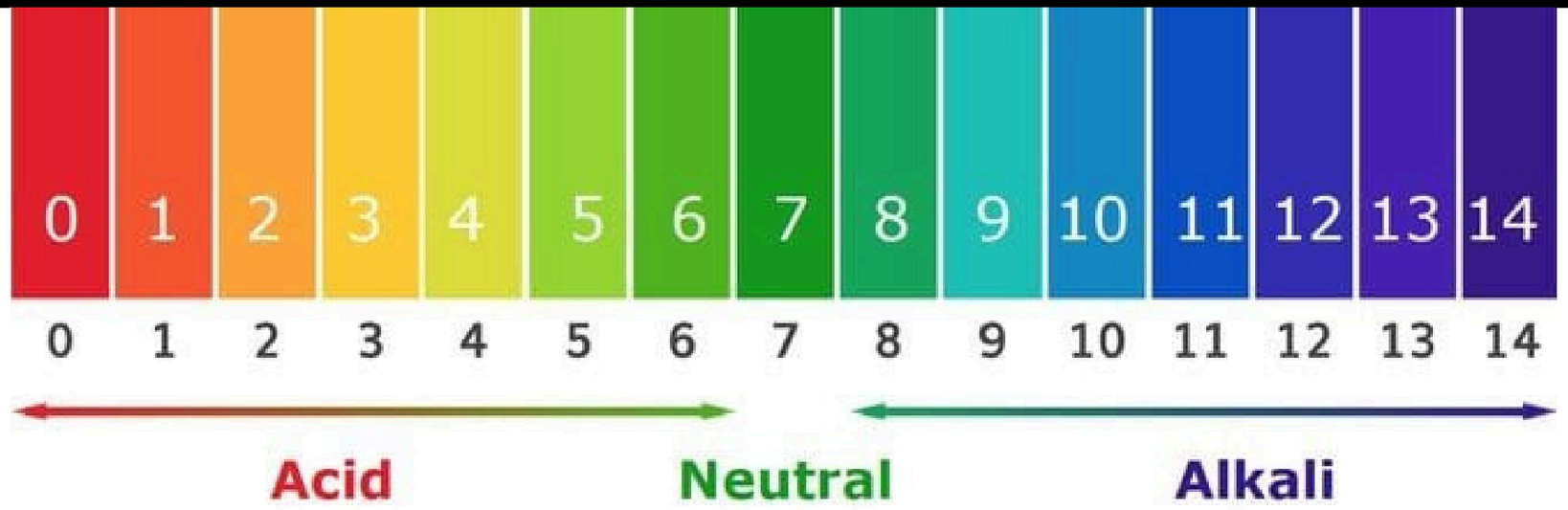
Furthermore, analyzing soil texture, structure, and compaction can provide insights into water retention, aeration, and root penetration capabilities. Adjusting soil composition through amendments like lime, gypsum, or organic matter can enhance soil structure and nutrient availability.

Utilizing precision agriculture technologies such as GPS mapping, remote sensing, and drones can further enhance soil analysis by providing detailed spatial data on soil variability within fields. This information allows for site-specific management practices, such as variable rate fertilization and irrigation, tailored to the specific needs of different soil zones.

To help farmer improve the quality of soil i.e., pH level, moisture content and nutrient content in order to help the farmers out in enhancing the quality of crops and increase the rate of production.

INPUT-

Location of the remote area where the soil is present on the Earth.



OUTPUT-

Suggestions that include how the farmer should improve the soil quality content. The changes that farmer should make in order to improve the quality of soil i.e., correct proportions of organic matter in the soil (nutrient content), correct amount of moisture content in the soil and the correct range of pH of the soil so that crops get proper environment to grow healthy.

SOLUTION-

A Machine-learning based website that would give out the suggestions on how to improve the quality of soil further to the farmer on the basis of past data of the type of soil required to grow crops in that particular area as recorded . It will use the location of the remote area of the land on the Earth and give out the farmer suggestions of correct nutrient content, moisture content and pH level content on the basis of the weather present in that particular area and for the type of crops grown in that on the basis of past datas that are recorded.