Study the quality of soil in rice fields before planting

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Abstract

From the study of soil quality before rice planting, physical and chemical properties of the soil were assessed, which are important factors affecting the growth and yield of rice. The parameters used in the analysis included pH, soil temperature, soil salinity, soil moisture, and the amount of essential nutrients for plants. The study found that the average soil salinity was 0.18 mS/cm, which is less than <2 mS/cm, indicating that the soil in the study area has salinity levels that do not hinder the absorption of nutrients by rice. The pH value is 6.54, which falls within the suitable range (5.0-7.0) for rice cultivation, as it allows essential nutrients such as nitrogen, phosphorus, and potassium to dissolve and be absorbed by the plants efficiently. The soil temperature is at 30°C, which is suitable for the tillering stage and the photosynthesis process, allowing rice plants to efficiently accumulate energy and grow fully. The soil moisture content is in the range of 75%-100%, which is suitable for rice growth because rice is a water-intensive plant, especially during the tillering and grain-filling stages. Water is essential for nutrient transport and maintaining cell turgor pressure. Meanwhile, the soil fertility level is IDEAL. Indicates the sufficient amount of essential nutrients for rice growth, such as nitrogen (N), which aids in the development of stems and leaves; phosphorus (P), which promotes root growth and seed formation; and potassium (K), which enhances plant strength and disease resistance.

Origin and significance

The soil quality is suitable

The rice is growing well

Check soil quality before planting

Objective

To study the quality of soil in rice fields before planting

Research question

Is the soil quality of the sample used for planting suitable for rice cultivation?

Research hypothesis

The soil sample used for rice cultivation is of suitable quality for rice planting.

Method of operation

Part 1: Planning and Defining the Study Area

Part 2: Soil Sampling

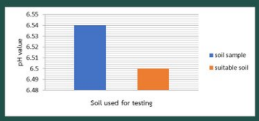
Soil samples from the farmer's rice field

Randomly select 10-15 points throughout the rice field

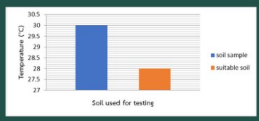
Combine the soil

Part 3 Soil Quality Analysis

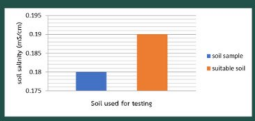
Results of the operation



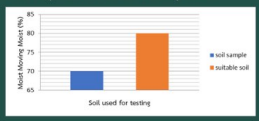
From the graph comparing the suitable soil pH and the sample soil, it can be concluded that the suitable soil pH is in the range of 5.0 - 7.0. The pH of the sample soil is 6.54, which means the soil pH in this area is already suitable.



From the graph comparing the temperature in suitable soil and in the sample soil, it can be concluded that the suitable soil has a temperature of 25-32°C, especially during the tillering stage, while the sample soil has a temperature of 30°C. This means that the temperature of this soil is already suitable.



From Graph 3, the results compare the salinity levels of soil suitable for rice cultivation and the sample soil. The conclusion is that suitable soil has a salinity of less than 2 mS/cm, and the sample soil has a salinity of 0.18 mS/cm. This means that the salinity of the soil in this area is already at an appropriate level.



From the graph comparing the appropriate soil moisture levels and the sample soil, it can be concluded that the appropriate soil will have a moisture level of 70-100%, while the sample soil has a moisture level of 75-100%. This means that the soil moisture in this area is already at an appropriate level.

Soil used for testing	FERTILITY Value
soil sample	IDEAL
suitable soil	IDEAL

From Table the results of comparing the nutrient values in the soil suitable for rice cultivation and in the soil samples are shown. The summary indicates that the suitable soil has an IDEAL FERTILITY value, which demonstrates the completeness of the soil nutrients in that area. Additionally, the soil samples also have an IDEAL FERTILITY value, meaning that the nutrient values in this area are already appropriate.

Summary of results

From the study of soil quality before rice planting, it was found that the pH, soil temperature, salinity, moisture, and nutrient levels in the soil are close to the standard values suitable for rice cultivation. These are important factors that affect plant growth. When the physical and chemical properties of the soil are within the appropriate range, rice plants can efficiently absorb nutrients, leading to complete growth and good yields. Therefore, checking soil quality before planting is an important guideline that helps farmers plan soil management appropriately to enhance cultivation efficiency and promote rice production with the highest quality yield.

refer

https://url.in.th/MRNTm

https://url.in.th/BCghX

https://url.in.th/yHKeZ

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