

Soil Quality in Areas with Growth of Ramyai Trees

A Study of Soil Quality in Areas with Growth of Ramyai Trees

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Abstract

The study of soil quality around Ram Yai trees was conducted at the Ram Yai area of the Trang Agricultural Research and Development Center, Palian District, Trang Province. The objectives of this study are as follows :1) to investigate the soil structure in the Ram Yai tree area, 2) to examine the soil pH, 3) to measure soil temperature and 4) to determine soil moisture. The study was carried out using measurement methods based on the GLOBE program guidelines. Soil samples were collected and analyzed for soil structure, soil pH, and soil moisture around the Ram Yai trees.

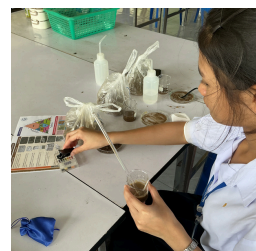
Research Question

- 1.Is the soil structure in the Ram Yai planting area suitable?
- 2.Is the soil pH in the Ram Yai planting area appropriate?
- 3.Is the soil temperature in the Ram Yai planting area suitable?
- 4.Is the soil moisture in the Ram Yai planting area appropriate?

Introduction

The Ram Yai tree is important as a traditional medicinal plant, especially in southern Thailand. Various parts of the plant, including the leaves, shoots, fruits, and roots, can be used for medicinal purposes. The growth of the Ram Yai tree depends on soil quality, which is an important natural resource for plants because it provides root support, water, and essential nutrients. If the soil has suitable properties, such as proper soil structure, appropriate pH, temperature, and moisture, it can promote healthy plant growth.

The results of the soil quality study around the Ram Yai tree showed that the soil had a granular structure, which is suitable for plant growth. The soil pH was 6.4, indicating slightly acidic conditions, which are favorable for nutrient absorption by most plants. The average soil temperature was 30 degrees Celsius, and the average soil moisture content was 10%, both of which were at suitable levels. Therefore, it can be concluded that the soil quality around the Ram Yai tree is appropriate for plant growth, and the results of this study can be used as baseline information for plant care and sustainable soil management in the future.



Research Methods

This study was conducted by selecting the soil area around the Ram Yai tree and identifying three soil sampling points. Soil samples were collected from each point at an appropriate depth and placed properly into containers. The soil structure was examined using a 20x magnification lens in combination with a mobile phone and the observed soil characteristics were recorded.

Subsequently, soil samples from each point were mixed with distilled water in a beaker and stirred thoroughly using a glass rod. Then , the soil solution was filtered using a filter funnel and filter paper. The soil pH was measured from the filtered solution with measurements taken three times at each sampling point to ensure accuracy. In addition, soil moisture and soil temperature were each measured at three points in the soil area around the Ram Yai tree.

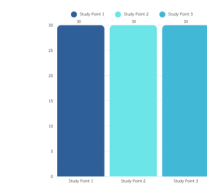
Results

The results of soil pH measurements around the large Ram yai tree

The area where large Ram yai trees are planted	1st time	2nd time	3rd time
Point 1	6	6	6
Point 2	6	6	7
Point 3	7	7	7
Average			30

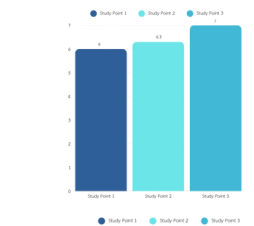
The results of soil temperature measurements around the large Ram yai tree

The area where large Ram yai trees are planted	1st time
Point 1	30
Point 2	30
Point 3	30
Average	30

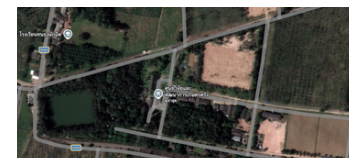


Soil moisture measurement results from the area around the large Ram yai tree

The area where large Ram yai trees are planted	1st time
Point 1	10
Point 2	10
Point 3	9
Average	10



Map of study site



This study was conducted within the area of the Trang Agricultural Research and Development Center at the following geographical coordinates: Latitude 7.25617 and Longitude 99.72936.

Material and Equipment



Moisture Meter



Litmus Paper



Soil Thermometer



CU SmartLens (Smartphone-based Microscope Lens)

Discussion

The study of soil quality in the Ram Yai tree area, it was found that the soil has a granular structure, which is suitable for plant growth because it allows good aeration and effective water retention to help plant roots absorb water and nutrients efficiently. The soil pH in the area is 6.4, which falls within the slightly acidic range, suitable for the nutrient uptake of most plants.

The average soil temperature in the Ram Yai tree area is 30°C, indicating that the study area has relatively consistent environmental conditions. This is likely due to being under the same tree canopy and measuring at the same time. Considering the soil moisture, which has an average value of 10%, the soil conditions are appropriate for plant growth. Therefore, it can be concluded that the soil quality in the Ram Yai tree area is suitable for tree growth. The results of this study can be used as baseline information for the care and management of trees and soil in the surrounding area.

Conclusions

From the study on soil quality in the area where Ram Yai trees grow, the findings are as follows 1)Soil structure: The soil in the Ram Yai tree area has a granular structure,2)Soil pH: The soil pH in the Ram Yai tree area is 6.4, which is slightly acidic,3)Soil temperature: The soil temperature in the Ram Yai tree area is 30° C and 4)Soil moisture The average soil moisture in the Ram Yai tree area is 10%.

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