

# A Study of Soil Quality Affecting the Density of *Molineria latifolia* in Rubber Plantations, Trang Province



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## Abstract

This environmental science research aimed to study soil quality affecting the density of *Molineria latifolia* in rubber plantations in Trang Province. The study focused on soil physical characteristics, soil moisture, soil temperature, soil nutrients, and other indicators of soil quality, as well as the density of *Molineria latifolia* in randomly selected study areas. The results showed that the soil in the rubber plantation had a granular structure, with an average pH value of 8.16, average light intensity of 416.66, average soil moisture of 10%, and average soil temperature of 28.16°C. The mineral content in the soil ranged from low to slightly low.

**Keywords:** *Molineria latifolia*, soil quality

## Research Question

How does soil quality in rubber plantations affect the density of *Molineria latifolia*.

## Introduction

*Molineria latifolia* (Lemba) is an emerging economic crop frequently intercropped in rubber plantations in Trang Province to optimize land use and farmer income. Since soil quality is the primary determinant of plant health, this study analyzes how specific soil parameters influence *M. latifolia* density. The findings provide critical soil management strategies to enhance cultivation efficiency and support sustainable agroforestry.

## Research Methodology

### Study Area

The study was conducted in a rubber plantation in Trang Province, located at specified northern latitude and eastern longitude. Part 1: Studying Soil Quality Affecting the Density of *Molineria latifolia* Select six similar study plots in the rubber plantation.

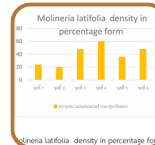
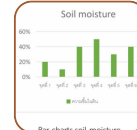
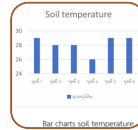
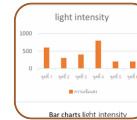
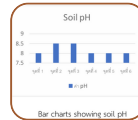
## Carrying Out Investigations

### Describes what happened

1. Use random sampling to determine soil sampling points and *Molineria latifolia* density locations.
2. Collect soil samples in petri dishes and analyze soil N, P, and K using test kits.
3. Study soil physical characteristics, including soil structure, using CU Smart Lens and soil texture analysis.
4. Measure soil temperature at each point using a soil thermometer and record the data.
5. Measure soil moisture at each point using a 3-in-1 soil meter and record the data.
6. Measure light intensity at each point using a 3-in-1 soil meter and record the data.
7. Measure soil pH at each point using a 3-in-1 soil meter and record the data.
8. Record all data in tables.

## Results

The study on soil quality affecting the density of *Molineria latifolia* in rubber plantations in Trang Province revealed the following results.



## Conclusion and Discussion

The study found that soil in the rubber plantation had a granular structure, with an average pH of 8.16, average light intensity of 416.66, average soil moisture of 10%, average soil temperature of 28.16°C, and low to slightly low mineral content.

## Bibliography References

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## Make an impact

We study local plants, many of which are now rare, in order to promote and preserve traditional knowledge and the environment.

## Data Scientist

In this research, we used various research methods such as creating tables, bar charts, and graphs.

## Collaborator

In this research, we collaborated from data analysis and data collection to report writing.

