

A Comparison of Soil Quality in Areas with the Growth of Foxtail Palm, Banana, and Mango Trees

at Ban Thung Na School, Trang Province

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Abstract

1. compare soil structure in areas where foxtail palm, banana, and mango trees grow;
2. compare soil temperature in those areas;
3. compare soil moisture; and
4. compare soil pH levels.

Research Question

1. Do soil structures differ in areas where foxtail palm, banana, and mango trees grow? How?
2. Do soil temperatures differ in these areas? How?
3. Does soil moisture differ in these areas? How?
4. Does soil pH differ in these areas? How?

Introduction

Content Knowledge

Soil plays a vital role in living organisms and the environment. It serves as a habitat for organisms and microorganisms, a water reservoir, and a foundation for agriculture and human livelihoods. Soil quality is therefore important for plant cultivation. Ban Thung Na School has a mixed garden with various plant species. The researchers were interested in comparing soil quality in areas where foxtail palm, banana, and



Field Photos
(requires release forms)

Methodology

2.1 Soil Structure

Physical soil samples were collected and soil structure was studied by comparing soil charts in areas where foxtail palm, banana, and mango trees grow.

2.2 Soil Temperature

Soil temperature was measured using a thermometer at a depth of 10 cm. Data were collected three times at each site.

2.3 Soil Moisture

Soil moisture was measured using a multipurpose meter at a depth of 5 cm. Data were collected three times at each site.

2.4 Soil pH

Soil pH was measured using a multipurpose meter at a depth of 5 cm. Data were collected three times at each site.



Results

Soil Structure

Soil in all three study areas had a granular structure.

Soil Temperature (°C)

- . Foxtail palm: 30.22
- . Banana: 27.56
- . Mango: 29.89

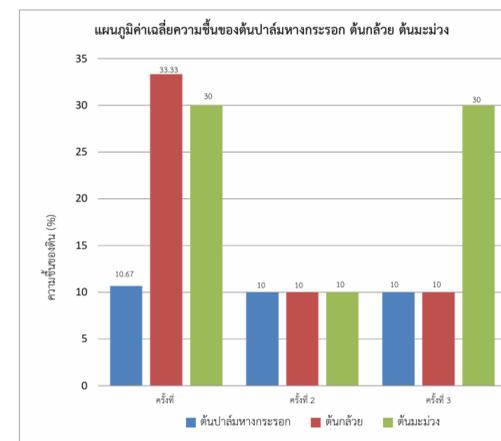
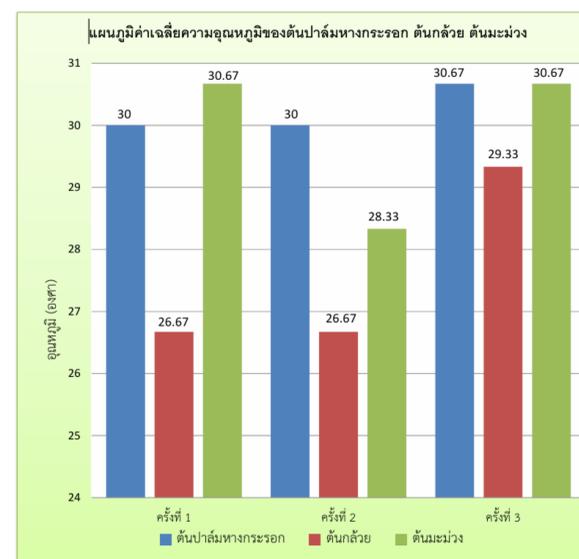
Soil Moisture (%)

- . Foxtail palm: 10.22
- . Banana: 17.78
- . Mango: 23.33

Soil pH

- . Foxtail palm: 5.67
- . Banana: 5.67
- . Mango: 5.44

Chart



Summary and Discussion

Soil moisture under mango trees was the highest due to canopy coverage and proximity to a water source, while soil under foxtail palm trees had the lowest moisture due to exposure to direct sunlight. Soil temperature showed an inverse relationship with moisture. Soil pH values were similar across all sites and reflected the same geological soil group.

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