



Study on Soil Quality with the Addition of Bio-Pellet Fertilizer on the Growth of Khlong Khlong at Wichienmatu School, Trang Province.

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Abstract

The study on soil quality with bio-pellet fertilizer for the growth of staggered plants found that the soil structure was loamy, and after adding bio-fertilizer, soil pH and moisture improved, while soil temperature decreased. Nutrient content, including nitrogen, phosphorus, and potassium, showed differences before and after adding the fertilizer. The growth of the Sanglong Klong tree increased after the bio-pellet fertilizer was applied.

Introduction

"Wichienmatu School is part of the Plant Genetic Conservation Project under the Royal Decree, with a "Botanical Garden" to promote awareness of plant conservation. The school encourages youth to appreciate plants' benefits and beauty. The calendula plant has thin, smooth bark, single leaves, and small flowers in clusters. Its fruit is oval, with red-purple flesh and a sweet taste when ripe. It serves as both a folk medicine and an ornamental plant. The research team developed bio-pellet fertilizer from leaves and studied its effect on soil quality and calendula growth.

Research Question

Is the water quality in the natural pond of Wicheinmatu School different before and after using the wastewater treatment boat? How?

Research Hypothesis

Does the addition of bio-pellet fertilizer from red duckweed chicken manure affect the soil quality of the growth of the salamander tree? What is it?

Variables

Independent variables: Water source before and after using wastewater treatment boats

Dependent variables: Water quality include transparency, acidity, alkalinity, and oxygen content in water.

Control variables: measurement methods, measurement tools

Research period

February 2025 to march 2025

Research Hypothesis

The addition of bio-pellet fertilizer from red duckweed chicken manure affects the soil quality of the growth of the sorghum tree.

Materials and equipment

- Tape measure
- Mile Line
- Vernier Caliper
- Siem Reap
- Soil Supervision
- Notebooks and stationery
- Geographic Coordinate Measuring Machine
- Equipment for Photography
- Container for soil storage
- pH Meter
- Soil moisture meter
- Spectrophotometer
- Beaker
- Soil NPK Test Kit

Research Methodology

Soil quality was measured according to the GLOBE methodology by measuring pH and soil moisture. Soil texture, soil color, and N P K in the soil are as follows:

1. Determine the quarantine point in the area where the lymph node is planted in Wichian Matu School.
2. Measure the acid-base content of the soil by using a multi-purpose meter to measure the pH of the soil. Collect data 3 times
3. Measure the temperature of the soil using a thermometer. In the ground Collect data 3 times, record the results.
4. Collect soil at all collection points to study soil properties according to the index. In the operating room, N, P and K Finding N, P, and K By using the N P K test kit in the soil.
5. Measure their growth before adding bio-fertilizer.
6. Adopt bio-pellet fertilizer. Add it to the soil at the base of the rocking tree. After adding fertilizer for 1 month, check the soil quality. Temperature Base acidity according to the GLOBE measurement method.



Summary of experimental results

According to the study, the soil structure around the swaying tree Fixation of nodular soil and soil texture. The soil adhesion is loamy and the soil texture is loamy. Soil pH, soil moisture After adding bio-fertilizer, the soil temperature decreases, and the nutrients in the soil before and after adding bio-pellet fertilizer There are differences in nitrogen content,

Discussion of experimental results

The growth of the swaying tree before and after adding bio-pellet fertilizer. It was found that the Sanglong Klong tree was growing more. This corresponds to the quality of the soil, which is characterized by loose soil and loamy soil. Soil pH, soil moisture After adding bio-fertilizer, the soil temperature decreases, and the nutrients in the soil before and after adding bio-pellet fertilizer There are differences in nitrogen content, phosphorus content, Potassium content Height Up

Reference documents

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