



study soil quality effects of survival and growth of small leaved mangroves(Rhizophora apiculata)

Researchers: Passara Onkaew, Wansa Prakhong and Anita Susuk

Grade Level: Primary 4-5 Advisor: Bangpunsaya Trakulwattana and Ms. Punika Boonyoung

School: Ban Mod Tanoi School, Kantang District, Trang Province

Special Treatment: Mrs. Patchara Pongmanawut and Ms. Hajatuthai Chaimanee

experimental method Step 1 Chulabhorn Science High School, Trang

Scientist Advisor : Assoc. Prof. Dr. Mallika Charoen Suralini Walailak University

Abstract

The purpose of this study was to study the effects of soil quality on the survival rate and survival rate. growth of young baobab trees mangrove area Ban Mod Ta Noi School conducted the study between 4 November 2022 to 13 January 2023 by creating 3 plots of nursery plots, 1.2 meters wide and 3 meters long, as follows: Plot 1 Beach soil Plot 2 Soil along the banks of the mangrove forest, Plot No. 3, Soil of mangrove forest, planting 200 mangrove pods per plot, measuring shoot length at random. and count the number of leaves To study the growth and survival rate once a week for a period of 10 weeks. soil quality first and after the experiment Measure the pH of the soil. measure the amount of minerals in the soil measure the amount of organic matter in the soil The study found that The growth of the baobab leaves in plots 1, 2 and 3 were not significantly different. The survival rate of small leaf mangroves was highest in plot 1, followed by plot 3 and 2, respectively. From the study of soil texture, it was found that plot 1 was sandy soil, plot 2 was sandy loam. Plot 3 is sandy soil. Soils from all 3 plots of soil quality were studied with pH between 6-8 both before and after the experiment. The soil mineral content showed that the sandy soil had the highest nitrogen, phosphorus and potassium content before the experiment. and after the experiment, the amount of nitrogen decreased and from the examination of organic matter in the soil, it was found that before the soil experiment Loam sand had the highest amount of organic matter. After the experiment, all 3 types of soil had similar amounts of organic matter. Therefore, the results obtained from this study can be used as a guideline for cultivating mangrove pods. To promote the conservation of mangrove forests around Ban Mod Tanoi community. Next Trang Province Keywords: Rhizophora apiculata, Rhizophora apiculata, Rhizophora apiculata

Introduction



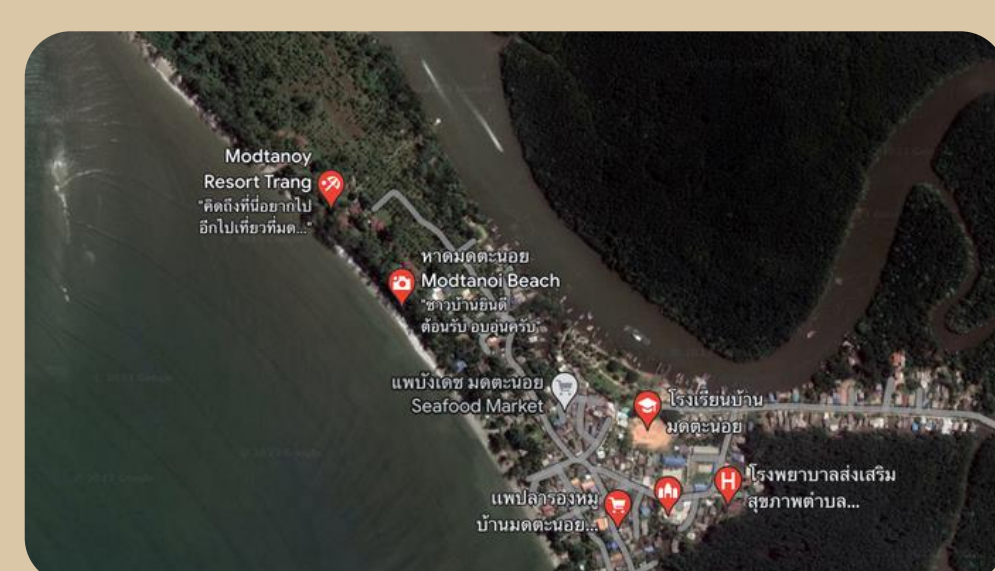
Research question

1. What type of soil can the young baobab grow best?
2. Soil quality and nutrient content in each type of soil affect the growth of Small baobab tree or not

Hypothesis

1. Young baobab trees can grow differently in different soil types.
2. Soil quality and nutrient content in each type of soil affect the growth of Small baobab leaves, different study area

Study area



mangrove area at Banmodtanoy School Kolibong Sub-district, Abokantang Province, Trang Province, located at latitude 7.3073 degrees north, longitude 99.4197 degrees east.

Equipment



experimental method

Step 1

Set the study area



Step 2

collecting soil quality data



Step 3

Collect survival data of small baobab pods.



Step 4

Collecting growth data of young baobab trees

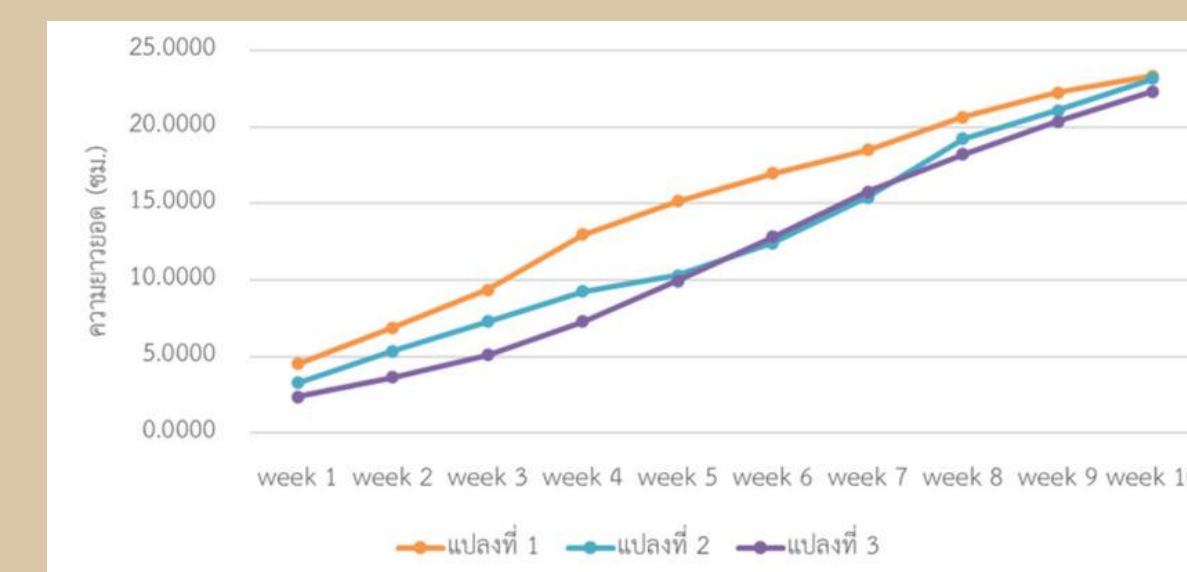


Experimental results

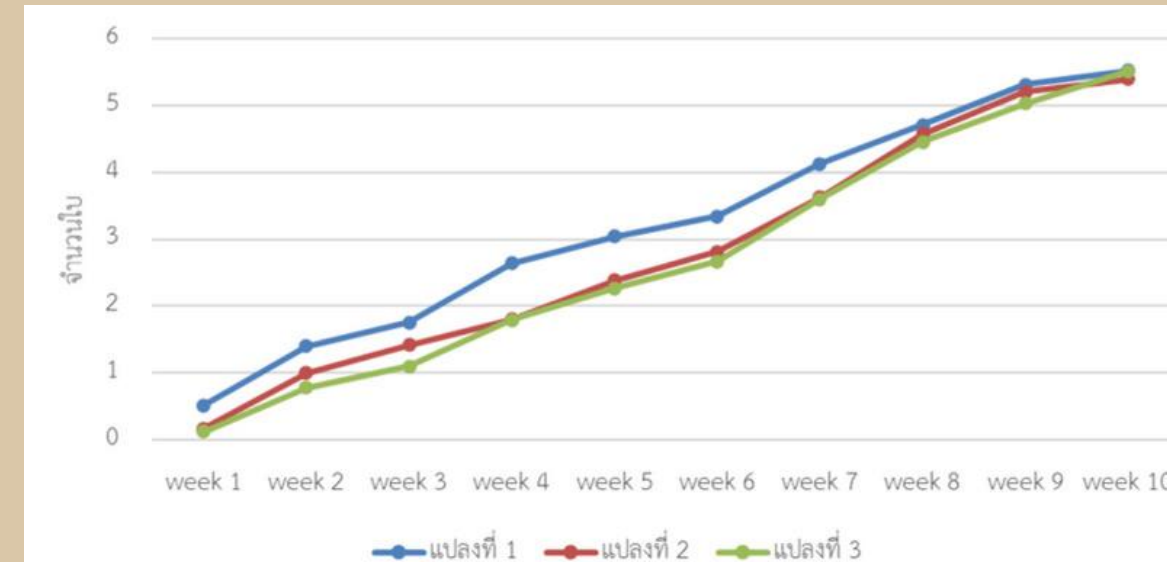
soil texture of the study site

study point	source of soil	ground texture
Plot No. 1	beach soil	sandy soil
plot 2	mangrove coastal soil	sandy loam soil
plot 3	mangrove soil	sandy loam

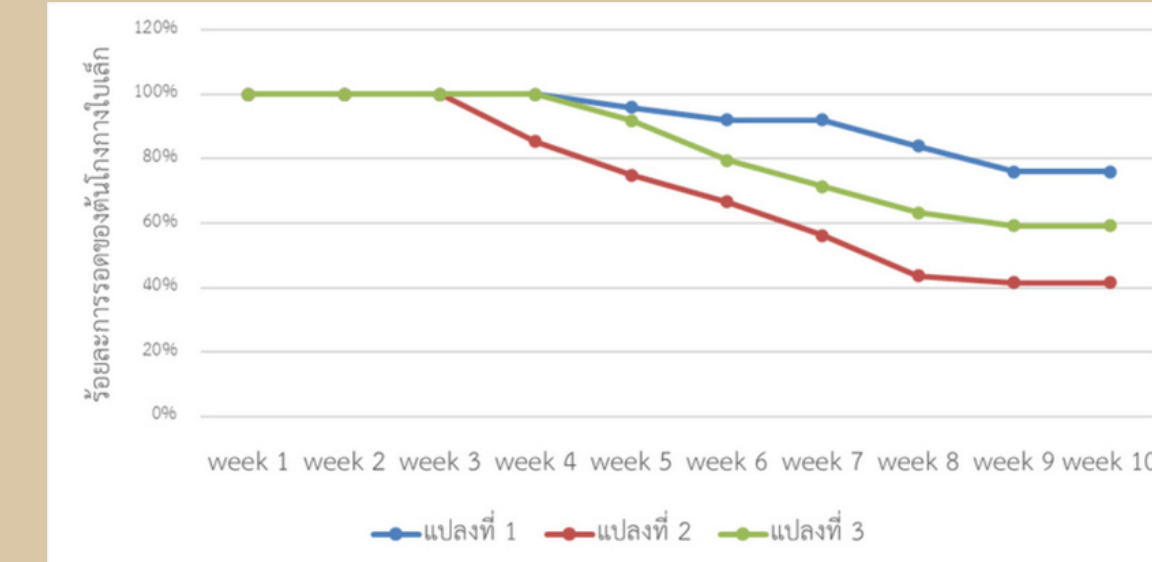
The length of the shoots of young baobab trees growing in 10 weeks.



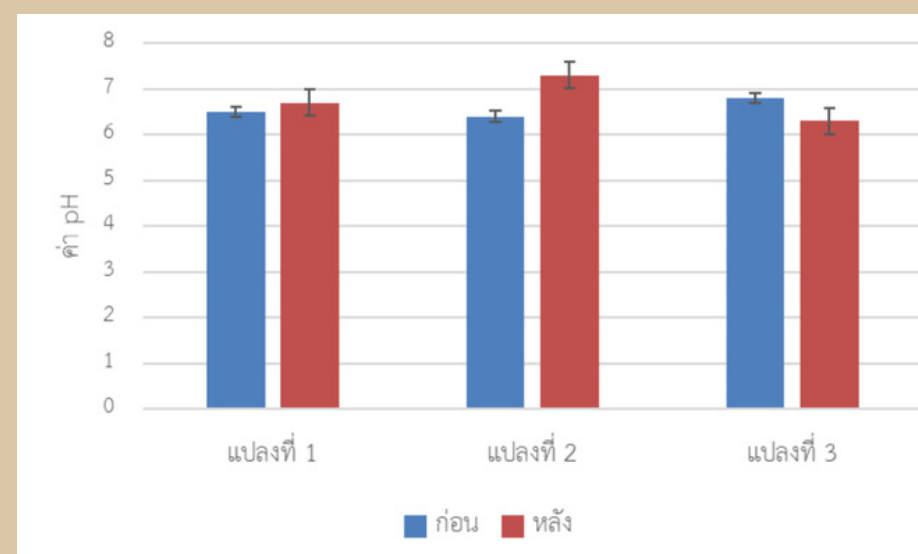
Number of young baobab leaves growing in 10 weeks



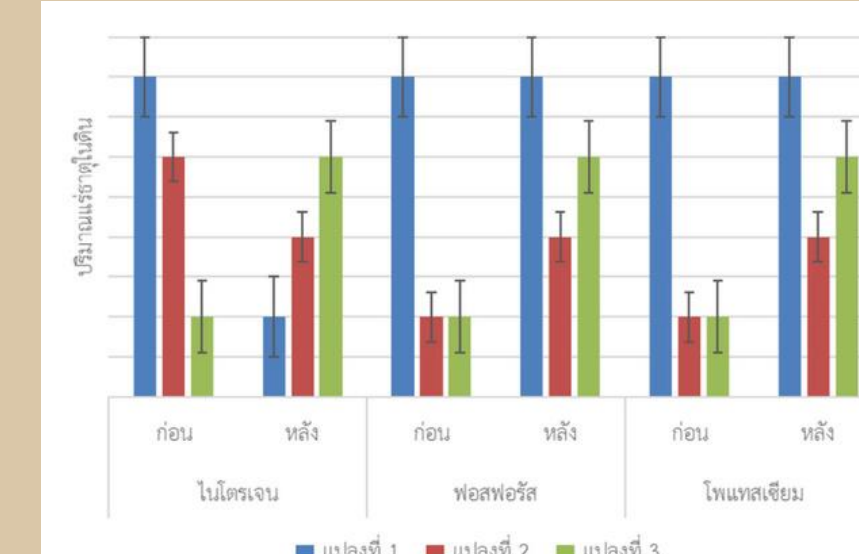
Survival rate of young baobab trees at 10 weeks



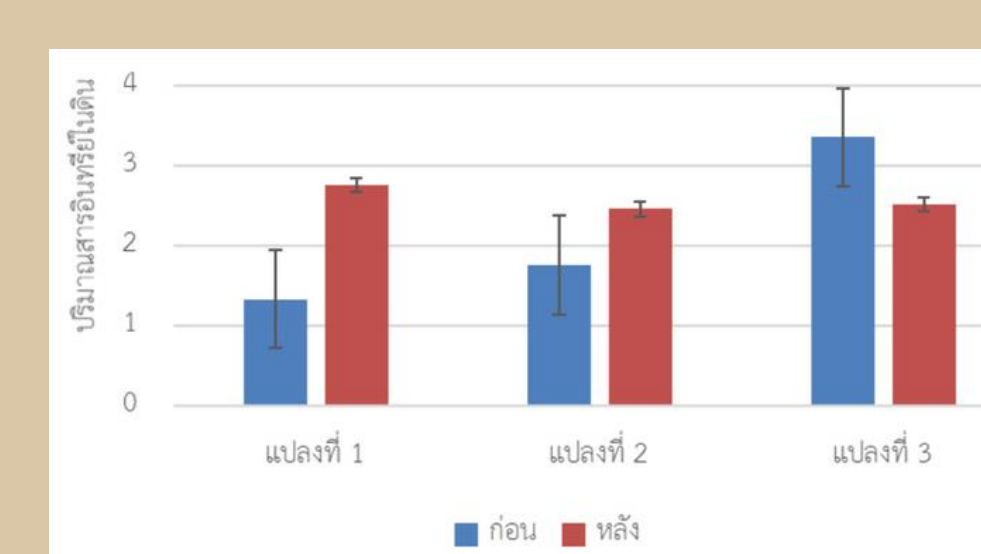
Soil pH values before and after the experiment



Nitrogen, phosphorus, potassium mineral content in the soil before and after the experiment.



The amount of organic matter in the soil before and after the experiment



Summary and Discussion

The results of the study showed that the growth of mangroves in all 3 soils, namely beach soil, coastal soil, mangrove forest and mangrove forest soil, were not different. Soil quality affected the growth of mangroves. Sandy soils had the highest NPK values due to tide and sea water seepage into the plots because of the closed nature of the mangroves, resulting in the accumulation of nutrients by seawater in the plots because of the gaps in the sandy soils. Between the soil grains, nutrients were inserted in the gaps between the soil grains the most. The mineral content in plot one was the highest. growth

Acknowledgement

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Bibliography

Department of Marine and Coastal Resources. (2018) Situation of mangrove forest resources, Trang province. Retrieved 24 October 2022 on https://km.dmcr.go.th/c.1/s.436/d_19150 Jakkrit Chanchalam, Teerasak Unaromlert. (2017). Mangrove Forest Restoration Process for Sustainable Development: A Case Study of Ban Pred Model Community in Huang Ngao Sub-district, Mueang District, Trang Province. per and Chaiyasit Siritkulpanit et al. (2009). Handbook of Mangrove Tree Cultivation, Bureau of Mangrove Resources Conservation, Tata Marine and Coastal Resources Department: 6-12.