



A STUDY OF CARBON SEQUESTRATION IN THE IVORY COAST ALMOND TREES (TERMINALIA CATAPPA TREES) WITHIN THE GROUNDS OF VAREE CHIANG MAI SCHOOL

RESEARCHERS : Miss Pinyada Laopanrak
Miss warittha Suriyasak

Miss Ramita Yosang
Mister Napop Kadeedang

Miss Ploylalin Saranak
Miss Phatnicha Pamoon

ADVISORS : Miss Duangdee Kaewdee
Miss Panita Chenrukmatupoom
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Mrs. Paweena Aowrattanakul
Miss Paphatrada Piyawarawat

SCHOOL:
VAREE CHIANG MAI
SCHOOL, MUEANG DISTRICT,
CHIANG MAI PROVINCE

ABSTRACT

This research aims to study the carbon sequestration potential of The Ivory Coast Almond trees (Terminalia catappa trees) within the grounds of Varee Chiang Mai School, focusing on evaluating the amount of carbon stored in these trees, which are common perennials in the study area. The research was conducted using field surveys to measure tree circumference, determine trunk diameter, and measure tree height. This data was then used to calculate the accumulated carbon storage.

The results indicate that The Ivory Coast Almond trees (Terminalia catappa trees) in the Varee Chiang Mai School area have a significant carbon sequestration potential. Specifically, trees with larger diameters and greater heights were found to have a higher capacity for carbon sequestration compared to smaller trees. This demonstrates the vital role of perennials in school green spaces in reducing atmospheric carbon dioxide. The findings of this research can serve as fundamental data for promoting tree conservation, increasing green spaces in educational institutions, and sustainably raising awareness about climate change mitigation among students and the surrounding community.

Key Words: Ivory Coast Almond Tree (Terminalia catappa trees), Carbon sequestration capacity of trees

INTRODUCTION

Currently, the greenhouse effect is a critical environmental issue that significantly impacts the global climate, leading to a rise in the Earth's average temperature, known as global warming. A primary cause of this phenomenon is the increasing concentration of carbon dioxide (CO₂) in the atmosphere, resulting from human activities such as the burning of fossil fuels, transportation, and deforestation.

Trees play a vital role in mitigating global warming because they can absorb carbon dioxide from the atmosphere through the process of photosynthesis. The carbon is then stored as biomass in various parts of the tree, including the trunk, branches, leaves, and roots. This process is known as "Carbon Sequestration," which helps reduce greenhouse gases and maintains ecological balance.

The Ivory Coast Almond trees or "Hu Kra Jong," is a popular perennial species planted in schools and public spaces due to its wide, tiered canopy that provides excellent shade. While Varee Chiangmai School has a large number of these trees, there is currently a lack of specific data regarding their carbon sequestration capacity.

Therefore, this research aims to evaluate the amount of carbon stored in these trees to provide scientific data that promotes environmental awareness and supports sustainable development within the school community.

METHODOLOGY

1. Research Design

This research is a survey-based study. It investigates the carbon sequestration of Ivory Coast Almond Trees by measuring tree dimensions, specifically determining the trunk diameter and height, which are then used as the primary data for carbon calculation.

2. Population and Sample Scope

- Population: The population used in this research consists of 5 Ivory Coast Almond Trees located within the Varee Chiang Mai School area.
- Sample: The sample group consists of 5 Ivory Coast Almond Trees that are accessible and suitable for measurement, selected through Purposive Sampling.

3. Instruments

- Instruments for measuring tree circumference:
- Instruments for measuring tree height:
- Clinometer

4. Data Collection

5. Carbon Calculation

6. Data Analysis

7. Statistics Used in the Research



CONCLUSION

The findings revealed that each Ivory Coast Almond Tree possessed different heights and trunk diameters, resulting in varying levels of carbon sequestration. Trees with larger sizes and greater heights demonstrated a higher capacity for carbon storage compared to smaller trees.



OBJECTIVE

1. To study and calculate the amount of carbon sequestration in Ivory Coast Almond trees at Varee Chiangmai School.
2. To analyze the relationship between tree size (Diameter at Breast Height and height) and carbon sequestration capacity.
3. To evaluate the role of these trees in reducing carbon dioxide levels within the school environment.
4. To raise awareness about environmental conservation and global warming among students and staff.

QUESTIONS

How do the size and structure of trees within the Varee Chiang Mai School area relate to the amount of carbon sequestration?

Summary Table of Carbon Sequestration in Ivory Coast Almond Trees at Varee Chiang Mai School

Tree No.	Tree Height (m)	Circumference (cm)	Diameter (cm)	CO ₂ Absorption (kg CO ₂)
Tree 1	15.015 m.	100 cm.	50 cm.	252.20 kg CO ₂
Tree 2	23.660 m.	75 cm.	37.5 cm.	223.50 kg CO ₂
Tree 3	18.540 m.	80.5 cm.	40.25 cm.	201.90 kg CO ₂
Tree 4	16.074 m.	83 cm.	41.5 cm.	186.10 kg CO ₂
Tree 5	6.604 m.	99 cm.	49.5 cm.	108.80 kg CO ₂

