



# Ministry of Agriculture, Livestock and Irrigation Department of Agriculture



## Effect of Different Rates of Compost Growing Media on the Growth of Rubber Seedling in Nursery

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# Introduction

## Rubber (*Hevea brasiliensis*)

- Rubber *Hevea brasiliensis* was domesticated as plantation crop
- Rubber is grown on highly weathered soils characterized by very low organic C content due to intensive cultivation
- Maintaining an appropriate level of soil organic matter and biological cycling of nutrients is crucial to the success of any soil management in the humid tropics
- Application of compost, plant residues as mulching materials or growing cover crops have been adopted successfully to enhance nutrient cycling and use efficiency

# Objectives

- (1) To evaluate the effect of different rate of compost on the growth performance of rubber seedlings and
- (2) To study the effect of composts on soil physicochemical properties changes

# Time Schedule for Experiment

[illegible]



# Materials and Methods

Experimental site	- Perennial Crops Research and Development Center (PCRDC) Mawlamyaing Township, Mon State
Experimental design	- Randomized Complete Block Design (RCB)
Replication	- 4
Plot size	- (4.5 m × 5.1 m)
No. of experimental plot	- 20
Experimental area	- 8000 sq.ft

# Treatments

- T<sub>1</sub> – Control (without fertilizer and compost)
- T<sub>2</sub> – Chemical fertilizer
- T<sub>3</sub> – 5% by weight of potting media (80g compost plt<sup>-1</sup>)
- T<sub>4</sub> – 10% by weight potting media (160g compost plt<sup>-1</sup>)
- T<sub>5</sub> – 15% by weight potting media (240g compost plt<sup>-1</sup>)

# Lay Out Of Experiment

$R_1$

$T_1$

$T_3$

$T_2$

$T_4$

$T_5$

$R_2$

$T_2$

$T_1$

$T_5$

$T_3$

$T_4$

$R_3$

$T_3$

$T_2$

$T_4$

$T_5$

$T_1$

$R_4$

$T_4$

$T_5$

$T_3$

$T_1$

$T_2$

# Data Collection

## Stock Growth Parameter

- Plant height (cm)
- Stem diameter (cm)
- No. of leaves
- Leaf area
- Fresh weight of biomass (g)
- Dry weight of biomass (g)

## Scion Growth Parameter

- Plant height(cm)
- Stem diameter (cm)
- No. of leaves
- Leaf area
- Fresh weight of biomass(g)
- Dry weight of biomass(g)

## Properties of Compost

- Bulk density ( $\text{cm}^3$ )
- Moisture (%)
- pH
- Organic carbon (%)
- N (%)
- P (%)
- K (%)
- C:N
- EC

## Soil physicochemical(Before and After experiment)

- Bulk density ( $\text{cm}^3$ )
- Moisture (%)
- pH
- EC
- Organic carbon (%)
- Total N (%)
- Avail. P (ppm)
- Exch. K (ppm)
- Exch. Ca, Mg (meq 100 g<sup>-1</sup> )



# Team

- |                      |                                   |
|----------------------|-----------------------------------|
| Daw Khaing Hninn Soe | - Staff Officer                   |
| Daw Ei Ei Pyone      | - Deputy Staff Officer            |
| Daw Thida Moe        | - Assistance Staff Officer        |
| Daw Tin Htwe Thi     | - Deputy Assistance Staff Officer |
| Daw Nu Nu Nge        | - Deputy Assistance Staff Officer |
| Daw Ni Ni Win Shwe   | - Deputy Assistance Staff Officer |

# Expected Outcome

- The effectiveness of compost in growing media for the development of rubber seedlings could be assessed
- The soil properties could be improved by incorporation of compost to growing media
- According to the resulting data , it could be suggested that the suitable amount of compost could be used for the growth performance of rubber seedling

# Estimate Costs

No.	Activities	Charge	Cost	Total
1	Composting	134400	154000	288400
2	Preparation of germinated seedling	10000	252600	262600
3	Preparation of seedling	138000	250200	388200
4	Care and Management	427800	–	427800
5	Budding	136000	27200	163200
6	Analysis of soil and fertilizer	65700	814100	879800
7	Harvesting	38400	–	38400
	<b>Total</b>	<b>950300</b>	<b>1498100</b>	<b>2448400</b>

## Analysis of raw materials



## Composting



THANK YOU