EP No: 27/ 0222-23 DEVELOPING TECHNIQUE FOR PRODUCING POLE STAGE SEEDLINGS OF ECONOMICALLY IMPORTANT TIMBER AND NON TIMBER SPECIES COMMONLY USED IN PLANTING PROGRAM IN THE FOREST DEPARTMENT.

INTRODUCTION

Tamil Nadu Biodiversity Conservation andGreening for Climate Change Project (TBGPCCR) is implemented under financial assistance from Japan International Cooperation Agency (JICA). Item no. 3.1 - Forestry Research of the project envisages research activities for increasing the natural resource base under Forestry Research. Further, Item no. 3.1.1 - Afforestation Technology for Urban and Peri-urban Forestry provides for producing pole stage seedlings within 2-3 years in high nutrient conditions under item no. 3.1.1.3

Hence research on developing techniques for producing pole stage seedlings of economically important timber and non timber species commonly used in planting program in the Forest department is proposed

Species selected for the experiment:-

1. Madhuca indica - Iluppai
2. Terminalia arjuna - Neermarudhu
3. Khaya senegalensis - Khaya
4. Swietenia mahaganjo - Mahogany
5. Syzigium cumini - Naaval
6. Terminalia bellerica-Thandri
7. Thespesia populnea - Poovarasu
8. Pterocarpus, santalinus - Semmaram
9. Terminalia catappa - Vaadaam
10. Pterocarpus marsupium - Vengai

Reason for selection of the above tree species

1. The above said species are commonly used by the territorial and social forestry divisions in planting program both inside and outside reserved forests (Agro forestry model).

2. All the selected species have both Timber and Non -timber forest produce values hence the species have been selected for raising taller seedlings.

Objectives:

1. To develop technique for raising pole sized seedlings of important timber and non timber tree species

2. To identify the best suited nursery package for raising pole sized seedlings.

METHODOLOGY/ TECHNICAL PROGRAMME OF THE RESEARCH

Experiment was commenced during the year 2022-23 in the six different centre of Modern Nursery Division Dharmapuri. Seeds were collected from identified Candidate plus Trees (CPTs) based on key morphological characters viz., Height, Girth at Breast Height (GBH) and number of branches. Seeds were initially sown in mother beds. Once seedlings reached a height of 15 cm, they were transplanted into poly bags (16 x 30 cm) with inputs of For 16 cm x 30 cm bags: Vermicastings 35 g,VAM 15 g, Azosprillum 6 g and Phosphobacteria 6 g per bag.. Two different treatments have been followed viz., **T1-** Control and **T2-** Vermicastings 100 g , VAM 40 g, Azosprillum 10g and Phosphobacteria 10g per bag once in 2 months to find out the effect of biofertlisers on plant growth. A nursery with 550 seedlings was seeds from the CPTs were raised in each centre and totally 3300 seedling have been raised with 10 percent casualities in 6 different centres.

After a growth period of five months, the seedlings were transferred to larger polybags measuring 40 x 60 cm for further development with inputs of For 40 cm x 60 cm bags: Vermicastings 100 g , VAM 40 g, Azosprillum 10g and Phosphobacteria 10g per bag. These seedlings will continue to grow in these larger polybags for an additional period of 2-3 years to achieve the desired maturity and robustness for field planting. Technical aspects and treatment details are given below. The data has been recorded periodically.

S. No	**TREATMENT DETAILS**	
1	Number of Treatments	2
2	Details of treatment	**1. T1-** Control
		2.T2- Vermicastings 100 g , VAM 40 g, Azosprillum 10g and Phosphobacteria 10g per bag once in 2 months.

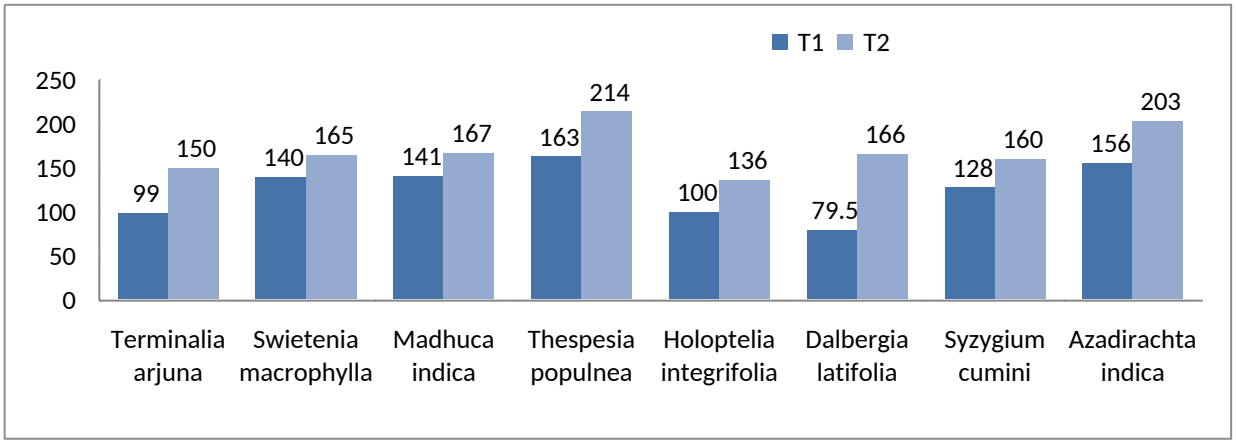
Species raised at different centres

S. No.	Thoppur Modern Nursery Centre	Melchengam Research Centre	Kathiripuram Research Centre	Edaikkal Research Centre	Maragatta Research Centre	Valkaradu Modern Nursery Centre
1	*Madhuca indica*	*Madhuca indica*	*Madhuca indica*	*Madhuca indica*	*Madhuca indica*	*Madhuca indica*
2	*Terminalia arjuna*	*Khaya senegalensis*	*Pterocarpus marsupium*	*Pterocarpus marsupium*	*Terminalia arjuna*	*Terminalia arjuna*
3	*Swietenia mahogani*	*Swietenia mahogani*	*Swietenia mahogani*	*Swietenia mahogani*	*Swietenia mahogani*	*Swietenia mahogani*
4	*Syzigium cumini*	*Syzigium cumini*	*Syzigium cumini*	*Syzigium cumini*	*Syzigium cumini*	*Syzigium cumini*
5	*Thespesia populnea*	*Thespesia populnea*	*Khaya senegalensis*	*Pterocarpus Santalinus*	*Terminalia bellerica*	
6	*Holoptelia integrifolia*	*Terminalia bellerica*				
7	*Dalbergia latifolia*	*Pterocarpus marsupium*				
8	*Azadirachta indica*					

Growth details of Pole stage seedlings at Seed Centre, Trichy

S. No.	Species	Avg. Plant Height (cm)		Avg. Plant collar girth (mm)	
		T1	T2	T1	T2
1	*Terminalia arjuna*	99	150	4.3	5.2
2	*Swietenia macrophylla*	140	165	5.3	6.8
3	*Madhuca indica*	141	167	6.3	7.12
4	*Thespesia populnea*	163	214	5.6	6.8
5	*Holoptelia integrifolia*	100	136	3.05	4.85
6	*Dalbergia latifolia*	79.5	166	1.71	1.66
7	*Syzygiumcumini*	128	160	3.63	4.72
8	*Azadirachta indica*	156	203	4.3	5.92

Chart show the growth details of pole stage seedlings



Melchengam Research Centre

Seed Centre, Trichy

Vaalkaradu Modern Nursery Centre

Edaikkal Research Centre

OBSERVATIONS TO BE RECORDED:

1. Seedlings height will be recorded once in three months
2. Collar diameter of the seedlings will be recorded once in three months.
3. Pest and disease attacks and measures taken to control if any will be recorded now and then.

INTERIM FINDINGS:

Comparing to seedlings performance with two different treatments, selected species under T2 had performed better in terms of plant height and collar girth compared with T1 (control) in all the centre's.