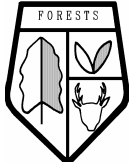


Leaflet No. 3/ 93-94



Government of the Union of Myanmar
Ministry of Forestry
Forest Department



**Further Investigation On Treatment Response Of
Planted Padauk [*Pterocarpus Macrocarpus Kurz.*]**

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1993

ပိတောက်ပင်စိုက်ပျိုးထူထောင်ရာတွင် ဖြောင့်တန်းသော သစ်လုံးများ
ရရှိရန် စမ်းသပ်လေ့လာခြင်း။

ဦးစောရန်အောင်စိဒူး (B.Sc. (For.) (Rgn.), M.S [Hawaii])
ညွှန်ကြားရေးမှူး
သစ်တောသုတေသနဌာန

စာတမ်းအကျဉ်းချုပ်

ပိတောက်များကို ပျိုးပင်နှင့် ကိုင်းဖြတ်များဖြင့် အလွယ်တကူ စိုက်ခင်းများ ထူထောင်နိုင်ပါသည်။ သို့ရာတွင်စိုက်ခင်းများတွင် ပဝတ္တိနည်းဖြင့် စိုက်ပျိုးသော ပိတောက်များသည် အပင်ဖြောင့်တန်းမှုနည်းပါးပြီး ဘေးကိုင်း ပေါများသည်ကို တွေ့ရပါသည်။ စိုက်ခင်းတည်ထောင်ရာတွင် ဘေးကိုင်းများနည်းပါးစေရန် ကိုင်းချိုင်းခြင်းကို အသုံးပြုပါသည်။ စိုက်ခင်း တည်ထောင်ပြီး ဒုတိယနှစ်နှင့် စတုတ္ထနှစ်များတွင် ကိုင်းချိုင်းခြင်း ပြုလုပ်ပါက ဖြောင့်တန်းသော ပိတောက်ပင်များ ပေါက်ရောက်ကြောင်း တွေ့ရပါသည်။ ကိုင်းချိုင်းခြင်းဖြင့် အပင်ပေါ်တွင် ရောဂါအနာအဆာ ဖြစ်ပေါ်လာခြင်း မတွေ့ရပေ။

Further Investigation on Treatment Response Planted Padauk (*Pterocarpus Macrocarpus* Kurz.)

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Abstract

Padauk can be successfully propagated by seedlings and cuttings. However, many planted Padauk have branches in the plantations. To minimize the growth of branches pruning was tried in the plantations. It was found out that Padauk produce a straight clean, bole after pruning in the second and fourth year. No disease symptom was detected in the pruned site after 13 years of growth.

Contents

	Page
1. Introduction	1
2. Results and Discussions	2
Selected Readings	

1. Introduction

Padauk (*Pterocarpus macrocarpus* Kurz.) in Myanmar grows in the drier parts of the country mostly in upper mixed deciduous forests. It ranges from 24° Latitude in the Bhamo, Mogoke, and Katha forest divisions southward to isolated patches in Taninthayi and Mon States. On the east, it is found in the southern Shan States and Kayah States and ranges westward as far as the Rakhine and Pakoukku, forest divisions. It grows abundantly in Shwebo, Pyinmana, Mandalay, Meiktila, Yaw, Pakoukku, Pyi and Thayet forest divisions.

Padauk is found in undulating hilly country at elevation up to 2500 feet and usually most abundant in the drier sites on the ridge top and upper slopes. It occurs in rainfall areas of under 35 inches to over 100 inches, but seems to thrive well with a rainfall of 50 to 60 inches, with minimum and maximum temperature of 45° F and 110° F. It grows well on more sandy soil especially in depression between tracts of semi-indaing forests.

1.1. Economic importance

Padauk fetches a very high price on the foreign market, and large volume is being cut throughout the areas in which it occurs in quantity. Logs seldom exceed 6 feet mid-girth, many are much smaller. To replace the removed, replacement in terms of plantation becomes necessary and development of technique for the production of quality timber must be carried out.

1.2. Background

Andaman Padauk (*Prterocarpus dalbergoides*) was found to have very few trees with straight non-branchy boles. With Myanmar Padauk (*Prterocarpus macrocarpus*) there are some straight clean boles occurring in the forest of Myanmar. With artificially planted Padauk there are very few trees with straight clean boles.

In fifty years old planted Padauk in Gweth Reserve Compartment 38, north Taungoo forest division, with an average height of 101 feet more than 50 percent of the trees were strongly forked. In many of these trees, only one 10 feet log could be obtained Table (1). The trees were planted close together in 1929 and the first thinning was delayed until 1956. Apparently close spacing had little influence toward control of forking.

Table 1. Growth of Padauk and Teak in a 50 years old plantation spaced closely when planted in 1929, and with about (50) percent of the Padauk forked after three thinnings.

Species Padauk	Height in feet			Girth in inches			Fork height above ground		
	Ave.	Max.	Min.	Ave.	Max.	Min.	Ave.	Max.	Min.
No. Fork	101	120	78	45	57	39	-	-	-
Forked	101	115	75	55	59	48	13	15	10
Teak	96	110	80	45	55	40	-	-	-

1.3. Regeneration

Natural regeneration of Padauk is rather poor. This may be due in part to the tough fibrous outer covering of the fruit and the hard shell of the seed. Germination of Padauk seed is only 40-50 percent.

At Planting time some seedlings will be forked and heavily branched, others will have straight clean seems. Some very preliminary tests indicate that planting only the straight seedlings will result in a higher percent of unforked trees in the plantation than if forked seedlings are also included. However, about 90 percent straight seedlings planted with close spacing (6' x 6') in the first year produced heavily branched trees in the second year. therefore, until tree improvement for Padauk is well developed, trials to improve the bole of planted Padauk become important.

1.4 Pruning

1.4.1. Materials and Methods

Pruning was done in the second year and fourth years and planting. Three types of pruning were tested accordingly.

Lateral small branches were removed;

(b) One of the two equally strong stem was removed;

(c) Low forked trees were totally removed;

After pruning the cut surface were brushed with soluble-tar. The trees were left without anymore treatment for the rest of the growing season.

2. Results and Discussions

Observations and measurement after thirteen years of planting.

- (1) There was no decay at the point of cutting. Further investigation inside the tree trunk show no sign of disease. There was a little scar inside from the point of cutting.
- (2) The trees are straight and have a clean straight bole. At least two 15 feet logs will be obtained at the time of maturity.
- (3) The average height is 36 feet and g.b.h (girht at breast height) is 1.9 feet. The average volume has reach 7.7 cu. ft per tree.
- (4) When a site quality was compared to Teak, the growth of Padauk fall into site quality II.

"Appendix I"

Summary of Experimental Plot

Year of Established	=	1980
Area	=	10 acre
Spacing	=	6' x
Reserve	=	Ngalaik
Compartment	=	72
Spp.		<i>Pterocarpus macrocarpus</i>

Operation

Size of Sample Plot	=	0.2 ac
No. of tree in Sample Plot	=	40
No. of trees in one acre according to S. P	=	200
No. of felled trees	=	10

Table 2. Data of Field Tree

Tree No.	G. B. H		G. A. B*		ht. up . to 3" dia		M .G			Branch		Total ht.		Remark
	ft	inch	ft	inch	ft	inch	ft	inch		*G. B. B Length	ft	inch		
1	1	1	1	2	24	35	1	1	7	-	-	48	7	
2	5	11	9	4	10	10	2	1	9	-	-	48	11	
3	1	2	1	2	31	40	1	1	10	-	-	54	4	
4	6	1	11	8	11	10	2	1	9	0-10"	5'-9"	50	0	
5								1	7	0-11"	10'-7"	63	4	
	1	2	2	2	35	43	1			0-10"	3'-3"	-	-	
6	8	6	1	11	1	9	5			1'-2"	10'-10"	55	4	
7	1	2	2	3	36	34	1			1'- 0"	5'-2"	56	11	
8	9	3	4	3	0	6	2			1'- 0"	5'-4"	58	11	
9	2	2	2	2	42	36	1			1'- 4"	15'-4"	56	4	
10	0	3	5	11	9	5	7			1'- 1"	8'-3"	58	9	

* G. A. B. = girth at tree base.

* G. B. B = girth at branch base.

Table 3. Basal area base on Field on Data.

No	Girth class	No. of felled tree	G. B. H (ft)	Total B. A of each class	Avg. B. A of each class	B. A of each class in Lac sq. ft
0	1	2	3	4	5	6
1	1'.0" - 1'.5"	1	1.417	0.1254	0.1254	2.508
2	1'.6" - 1'.11"	4	1.5 1.667 1.75 1.917	0.7352	0.1838	14.704
3	2'.0" - 2'.5"	4	2.000 2.083 2.25 2.25			
4	2'.6" - 2'.11"	1	2.5	0.3906	0.3906	7.812
						48.096

Basal area/ac

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