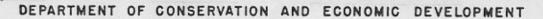
RGINIA DIVISION OF FORESTRY





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Comparative Growth and Yield of Loblolly and Shortleaf Pine in a Mixed Plantation

The Woolridge mixed loblolly - shortleaf pine plantation located in Buckingham County was hand planted by W.P.A. labor using a 6 foot by 6 foot spacing during the spring of 1937. The pines were planted on an abandoned eroded field the soil type of which is classified as Manteo silt loam.

Since being planted in 1937 the Woolridge plantation has received two thinnings --- the first thinning at age 19 years and the second one at age 24 years.

Vast differences in growth between loblolly and shortleaf pine within the Woolridge plantation has provided graphic evidence of the more rapid
initial growth of loblolly versus shortleaf pine. These differences are reflected
in the following tables the data for which was obtained from permanent plots located within the plantation (tabular data on a per acre basis):

nt bespeller vi	First Thinning (Age 19 years)		Second Thinning (Age 24 years)				
pointed throws of	Before	Cut	Leave		Before	Cut	Leave
No. Trees Loblolly Shortleaf Totals	210 844 1054	86 500 586	128 340 468		126 324 4501/	48 252 300	78 72 150
Volume (Cords) Loblolly Shortleaf Totals	16.10 12.43 28.53	3.06 4.40 7.46 ² /	13.04 8.03 21.07		22.32 12.82 35.14	6.95 8.95 15.90	15.37 3.87 19.24
Basel Area (Sq. F Loblolly Shortleaf Totals	76.53 89.06 165.59	17.30 37.19 54.49	59.23 51.87 111.10		81.08 63.18 144.26	26.03 45.58 71.61	55.05 17.60 72.65

^{1/} Lesser number of trees due to mortality between thinnings.

^{2/} Included is 1.42 cords of post volume.

Calculated Stand Production (Standard Cords)

	Total Growth Added (Age 19 to 24 yrs.)	Avg. A	Annuel oth	Avg. Annual Growth (Age 19 to 24 yrs.)
		19 yrs.	24 yrs.	
Loblolly Shortleaf	9.28 4.79	0.85	1.06	1.86
Totals	14.07	1.50	1.78	2.82

Diameter and Height Comparisons

	Avg. DBH 1/	Avg. Tot. Ht.2/
Before First Thinning (19 years)	(Inches)	(Feet)
Loblolly Shortleaf Differences	8.1 <u>4.4</u> 3.7	44 43/ 37 40/ 7
Before Second Thinning (24 years)		
Loblolly Shortleaf Differences	10.9 6.0 4.9	60 27/ 49 13/ 11

Remarks

The more rapid early growth of loblolly pine compared to shortleaf pine is very apparent in the Woolridge plantation and is clearly reflected in growth data collected from the plantation.

It will be noticed from the first table that after the second thinning the number of loblolly pines per acre exceeds that of shortleaf yet at time of planting shortleaf out-numbered loblolly 4 to 1.

Volume contributions made by both species differs appreciably. Loblolly has produced 8 cords per acre more (up to age 24 years) than shortleaf and has had a far lesser number of trees to do so.

Another economic factor to be reckoned with is that shortleaf proved to be poor "trainers" for loblolly pines. Within the Woolridge plantation loblolly pine gained an early dominance over shortleaf and from all indications will maintain it.

- 1/ Diameter at breast height.
- 2/ Based on random measurements, all merchantable diameter classes included.
- 43/ Basis or number

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