A CASE FOR PLANTING GRADED STOCK

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A field test was conducted in northeastern Virginia to determine the effect of size of planting stock on early survival on an average site in this part of the Piedmont.[1]

Four grades of planting stock were field tested on the Dulles Airport planting project at Chantilly, Va. The species selected--loblolly pine, Virginia pine, and white pine--were chosen because these species are favored for forestation in the general area. The quality and size of the stock were average, and normal care was given to it from bed to field.

The soils are clay loams with moderately good drainage. The site is supporting a stand of Kentucky bluegrass which had not been maintained for at least four summers before planting; it had been invaded by annual weeds, concentrations of blackberry plants, and scattered dewberry vines. The vegetative competition was sufficiently heavy to interfere considerably with the growth and vigor of the planted trees, especially those of small diameter (less than four-thirty-seconds inch).

Procedure

Bundles of stock were removed from randomly selected bales of the three species. The stock was graded into four sizes, and each treee was marked with colored wrap-around bands.

1. The best of each species graded was classed as premium grade stock. This grade included trees at least five-thirty-seconds inch in diameter and 7 to 15 inches high. Broken and badly split root systems were discarded.

2. The good quality trees were four-thirty-seconds to five-thirty-seconds inch in diameter and 7 to 11 inches high.

3. The plantable grades were four-thirty-seconds inch in diameter and 5 to 9 inches high.

4. The cull grade was two-thirty-seconds to three-thirty-seconds inch in diameter and 4 to 6 inches high.

Trees were hand planted with a planting bar by supervisory personnel in April 1961. The site, which was medium and uniform, received no site preparation.

Results

An examination of the planting in April 1962 revealed a high correlation between stock quality and survival (table 1). Some of the trees classed unthrifty will undoubtely survive and overcome the vegetation competition. However, these trees have been slower getting adequately established, and apparently only a small percentage of them will develop into

[1] Proc. R-7 Nurserymen's Conf., Mont Alto, Pa., September 1962.

TABLE 1.--Summary of graded stock evaluation

Grade	Condition 1 year after planting		
	Thrifty	Unthrifty	Dead
Premium.....	84	5	11
Good.....	77	9	14
Plantable.....	63	18	19
Cull.....	59	21	29
All stock.....	69	13	18

dominants and codominants in the final stand. Unfortunately, spot mouse attacks killed several trees in the winter of 1962-1963, and destroyed the value of future tests.

The field data on survival by species and grades are shown in figure 1.

Conclusion

Only sturdy planting stock should be planted in the Northeast Region on sites where substantial competition from grass and weeds is certain. Although first-year survival of loblolly and Virginia pine trees four-thirty-seconds inch in diameter was satisfactory, only loblolly seedlings with well developed tops and root systems had a high percentage of thrifty trees. Without site preparation, the small, spindly trees gave unsatisfactory results on the moderately difficult sites.

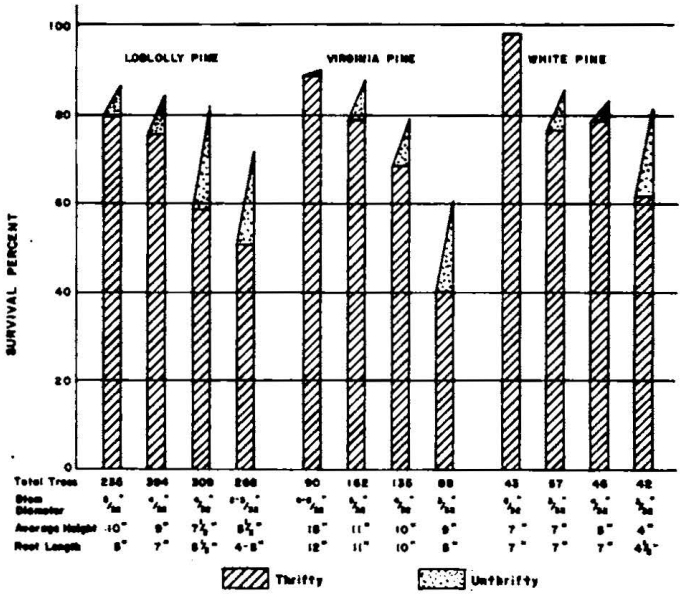

Figure 1.--Field data on survival by species and grades 1 year after planting.