NURSERY PRODUCTION, COST REDUCTION, QUALITY STOCK PRODUCTION

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In North Carolina, we feel that there is a very close correlation between quality stock production and cost reduction. And, since we get no legislative operations budget, we are extremely cost conscious.

We know that hand labor is the most expensive item of cost in nursery production. How far a nursery can go toward reducing hand labor depends a great deal on nursery operation toward quality stock production.

All of us are faced with questions regarding the use of soil fumigants, chemical herbicides, the correct spraying, fertilization, and irrigation programs. None of us are perfect, but even worse, many of us get into the rut of being completely satisfied with the same old methods we have always used.

We have had to fight our way out of these ruts in North Carolina simply to continue our operations on receipts. We have learned that in some instances we have to spend money to save money. At our Goldsboro Nursery, fumigation before each seedling crop is necessary to get high quality seedlings. We know that this is not necessary in all nurseries, but for us regular fumigation has paid off.

We approached the labor reduction problem from the standpoint of increasing uniformity in the seedling beds. Our aim was to cut out all grading of seedlings, and in the past shipping season, no grading was done in our nurseries. This has been accomplished by the following:

1. Chemical treating of seed.

2. Sizing seed and planting by size. The large seed will germinate quicker than small seed. And, in the past, the small seed is sure to have accounted for many culls. In operation , the small seed is planted first (10 days to 2 weeks before the medium and large seed). Differences in size of seedlings produced is negligible.

3. Broadcast seeding. We feel that each seedling has a. better opportunity to develop when broadcast than when planted in drilled rows. Since no cultivation is done to either broadcast or drilled seed, we see no advantage to planting in rows.

4. Seedlings per square foot. We are growing loblolly at about 32 seedlings per square foot, and slash at about 30 seedlings per square foot. These densities give us approximately 890,000 loblolly seedlings and 840,000 slash seedlings per acre.

5. Correct mulching.

6. Correct spraying program.

7. Correct fertilization program.

8. Root pruning--when seedlings reach the desired size for lifting we prune all tap roots at the 5-inch level. This not only stops top growth, but helps increase the fibrous root system. We feel that the short tap roots help prevent U-root when the trees are outplanted. Normally, one pruning in August or September is all the pruning necessary in North Carolina. Pruning definitely assists in making the plants more uniform.

9. We feel that a selective herbicide of the Dacthal type definitely has a place in the forest nursery. Dacthal is applied directly to the freshly seeded bed and controls many weed seed, especially grasses. A great reduction of labor has been affected by the combination of fumigation and herbicide application.

By use of the above cultural methods, we feel that in 1963-64 we actually shipped better quality seedlings without grading than we did in the past with grading. This also cut down on the exposure time of the seedlings from the seedbed to the seedling bale.

Our count is determined by weight, and except for those seedlings that are being check-counted, our seedlings have a very short root exposure time. Since all of our seedlings are dipped in a clay suspension, they have no good opportunity to dry out between the field and the bale.

In conclusion, we are convinced that we are producing a better quality plantable seedling than we have in the past. And this is being done at a great reduction in hand labor. It is only by use of the methods outlined that we are able to continue to operate on receipts while costs of labor and supplies continues to increase each year.