MODIFYING NURSERY STOCK TO FIT MODERN PLANTING METHODS

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Nursery practice underwent considerable development in many places before there were any effective machines for planting forest trees. Development was most pronounced where it was stimulated by active constructive thought and experimentation on the part of the men in charge of nurseries. It is a continuing process. Those nurserymen who contribute most are the ones who not only produce ingenious and practical gadgets to further their nursery culture of trees, but who also manage to modify planting stock to make it highly suitable for restoring productivity on different sites in the forests. Planting poor stock on difficult sites is throwing good money after bad.

Stock improvement does not always require elaborate experiments. With tillage, fertilization, root pruning, transplanting, etc., a nurseryman, can modify the character of his output. Of course he cannot be expected to produce stock that is custom grown for limited and specialized uses. Rather than to cater to the needs of problem areas he must try to meet the needs of many users.

Planting machines are a promising new development, here to stay. Certainly our planting projects should be mechanized everywhere that obtainable machines can operate. However, there are still many planters who cannot get the heavy equipment and many places where it cannot work, particularly in mountainous terrain.

Can a nurseryman supply the needs of hand-tool and machine planting with the same type of stock? Perhaps not always, but in many instances the answer is probably yes. It is recommended that much more attention be paid to physiological quality, as P. C. Wakeley explained in Southern Forest Experiment Station Occasional Paper 122, "Planting the Southern Pine," pp. 286-290. For both machine and hand methods the puny seedlings should be culled out. Root systems in either method need good, well-balanced nursery development. Growth may need to be checked to avoid getting tops that are too large or lateral roots that are too stiff and difficult to handle. Larger or older trees might be better if they could be

economically produced, handled, and planted, but there is the rub. Medium-sized trees are best in bar or hoe planting, using the cheap slit method. Fortunately for seedling growers the machines employ a modified slit method. The trench is an elongated slit. When it closes, the roots are fanned out in a single plane. This is an unnatural position, of course, but research has failed to trace any growth or survival handicap to this situation on most sites. (Extremely adverse sites are a different problem.)

It would appear that the medium-sized, well-balanced coniferous stock commonly produced can be planted equally well by bars, hoes, or machines. Over-sized seedlings are inferior stock because of the limitations of standardized equipment. The possible benefits from retooling to handle larger stock seem unwarranted in view of the cost. Hence nurseries would do well to grow and to grade their stock to suit modern tools as well as to meet site requirements.