

Selection, Scoring, Protection And Use Of Superior Trees

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The steep rise in the consumption of timber, and the rapid depletion of good individuals in the now seed-producing population, coupled with the fast diminishing amount of woodland available for purchase, has focused our attention on the improvement and development of that which we already have. In many ways the industry is being forced into a crash program. This sense of urgency should not, however, unduly hasten us into a make-do selection of the "next best" breeding stock. Careful screening of the best selections from existing stands should give us something really valuable to work with in the future. Once selected, the superior trees will cost no more to handle in the seed orchards than average trees for breeding stock.

The program of examining, selecting, scoring, protecting and using superior trees is not one to be viewed lightly. Such a program is a long-term undertaking with potentially far reaching results to the pulpwood industry; therefore, in a program of forest tree improvement through genetics, the cost which is inevitable, should be viewed leniently, in an effort to obtain the best from existing stands.

It is hoped through genetic selection we will obtain trees that are faster growing, disease and insect resistance, smaller and more efficient crowns, smaller limb diameter and flatter branching, greater height average, higher specific gravity and larger cellulose yields per individual tree. To obtain these things through selection, the following general loblolly pine characteristics are sought for the parent stock. Taller or equal in height of the stand, branching at right angle to the bole with branch diameter and length smaller than comparable trees, dense crown occupying not more than 25% of the bole height, straight bole of high form class, good pruning ability, disease free, and comparable in volume.

In order to find parent stock meeting these requirements for North Carolina Pulp Company it is necessary to examine many climatic and geographic stands and numerous sites intensively, both in the Coastal and Piedmont areas, since our company holdings are in both. We are developing North Coastal Loblolly, South Coastal Loblolly and Piedmont Loblolly seed orchards.

The actual selecting of trees for seed orchards is no easy task; pressured from above for results, pestered with ticks, chiggers, yellow flies, gnats and mosquitoes, and plain scared of snake bite, you sally forth acres to cover and miles to go. The first days are utter confusion with a kaleidoscope

of words; spiral, compressed wood, cronartium, ununiform, unicorn and outvolumed all adds to the frustration. Never have I realized a tree was so imperfect. Into another stand the search is continued with exasperating results. A smoke break is taken, the mind begins reevaluating the words "Look for the outstanding tree", during this pondering the eyes are raised and one gaze into the distance, suddenly the realization, yon stands a tree not exactly the pattern of the majority of the stand, pulse quicken, a quick trip over and behold, the outstanding tree. With greater confidence we begin to examine the stand with a more understanding eye. The period of selecting has begun and with each selection comes more confidence. Each stand is examined much on the order of a 100% cruise, by beginning at an easily identified break in the woods, topography, or landmark and worked systematically in tiers or strips until covered. This is necessary to avoid duplication and not to overlook a prospective candidate that may be indiscernible in a uniform even-aged stand.

During my initial search, I take the following equipment. Pencil, tatum holder with select tree rating sheets, spray gun filled with paint, crayon, aluminum tags, compass, diameter tape, Abney level, nails, increment borer, and of course a machette. On the grading we use the same equipment plus soil anger, bark depth gauge, and a man size increment borer, that quickly separates the men from the boys.

Trees that are satisfactory (or that have an acceptable grade) are very rare; it is essential therefore, that the selector go into many stands to find them. He must be very critical and cannot be satisfied with mediocre trees, it is my belief that better trees are to be found. Since we know only that the progeny will eventually be planted on our lands graded roughly into North Coastal, South Coastal and Piedmont, it is desirable that our selections come from a variety of sites within the broader classifications listed above.

In the selection of trees our best results have come from even-aged stands, both large and small, and mixed stands of Loblolly and Shortleaf. Old field stocking usually seeded from hedge row and wood edge trees have consistently given poor results.

As I go through the woods searching a likely stand the first thing I look for is crown, the next straightness and in order; pruning ability, branch diameter and limb angle. Usually a tree with the above characteristics has superior or equal form class in comparison with the best crop trees within the select tree stand. In judging a selected tree for superiority, we have found by picking five dominate crop trees of the stand, with nearly as possible comparable characteristics to the selected tree, and averaging and comparing to the same characteristics of the selected tree, we come up with a fine specimen. Crop tree selection may go out as far as 100 feet, but confined to the selected superior tree stand and site.

