AN INTRODUCTION TO WEYERHAEUSER SOUTHERN NURSERY OPERATIONS

George P. Finger
Operations Manager
Southern Production Facilities
Weyerhaeuser Company
Hot Springs, Arkansas

Most of our nursery sites are carved out of the forest or from rough agricultural land. We have four nurseries in the South--in North Carolina, Alabama, Arkansas and Oklahoma--with a total annual capacity of about 130 million 1-0 stock.

The sites weren't all gravy - some had some soupy spots, such as you probably haven't seen. Our major species is loblolly pine, but we have played around with a few hardwoods, such as sycamore and sweet gum.

Three of our nurseries are on almost pure sand--Norfolk sand; but the one in Alabama is on a sandy silt loam that grows the greenest trees, but has the most traffic problems.

I want to tell about an innovation by one of our nurserymen. Many of you are familiar with the Lily Rotera--it has a trailing set of four rolling bars that churn through the soil, loosened by its preceding mechanical teeth. The nurseryman added the rolling bar (trailer) to a two-way gang disc harrow. It speedily covers the ground, mixes well and leaves the whole field virtually flat. I am a firm believer in no-ruts-or-ridges soil management.

We use MC-2, methyl bromide, at all nurseries each year just prior to sowing, usually stripping the application of 325 pounds per acre with a plastic cover. We mark off accurately to come back a couple of days later with the alternate strips. Generally, we do our own applications, but contract if we get into a weather bind. This year we had some large acreages treated only with Modown and Devrinol as preemergent weed treatment. These treatment areas look good.

Tarp removal is handled using our washing machine wringer type remover that loads the used plastic into our manure spreader, which mechanically unloads at the land fill.

Seed bed preparation after fertilization and/or other treatments starts off with a rototiller that has a partial bed shaper built into it, and is followed by a roller to pack and give final bed shape.

Our seeding is all done with the sometimes notorious Stan Hay seeder. I was the first to use it, so far as I know, in a forest nursery, and have been attacked in and out of the company because of it. It's great if your people are trained--it's difficult to calibrate. I, myself, want an Oj·ord somewhere, but so far it remains on my "want" list.

Immediately after sowing, within three beds adjacent, we apply a fiber mulch slurry to the beds using either a Finn or Bowie hydro-seeder. The green color of the mulch fades to mud brown within a day or two. The mulch keeps the seed moist, reduces wind losses, and with the addition of Petroset, helps to hold the bed surface together through <u>some</u> of the torrential rains we have at every nursery.

Seed counts rand seedling inventories begin as checks of sowing rate; and are then made in June, July, and October. We have the inventory on computer by bed foot per seed lot now. A little super buggy now speeds the on-the-ground plot taking so that we cover a thirty million tree nursery for full inventorying in two days. This buggy used to be a golf cart--now only the gears, batteries, and wheels remain. It provides a seat on either side of the bed for the inventory crewmen. It allows accurate bed footage tracking for locating the plots and also provides visitors from Tacoma a joy ride close to the ground.

We spray Varsol for weed control, and in early summer Fermate for control of cronartium Fusiforme--I mean we were spraying 33 miles of bed every four to eight days. To beat that down, we built unit sprayers--a unit being nine beds wide. Coverage is excellent--and distribution is uniform with good flow controls from the tank. Prior to this we were doing three beds at a time. This sprayer has cut our summer manhours by one-fourth.

We were dissatisfied with fertilizer distribution using standard nursery and slower applicators and built a distributor unit using three standard John Deere auger type hoppers. With this distributor we cover three beds--treat <u>only</u> the beds-- and have good control of the amount and the distribution. It is very easily calibrated and changes in rates are quite simple. It also saves 33% of fertilizer material when we used to put it in the paths.

We've been lateral pruning for about three years, both to force bushy roots and/or to reduce root entanglement at lifting. We built our own units that work like a charm. Nine rolling coulters keep well without the rows of trees, cutting between each row at a depth of about six inches.

On trial now is a lateral pruner that will also undercut. I don't hold much hope for the current trial model. We are trying several new ideas on undercutting--some of which <u>may</u> change entire bed sowing configurations in width and length.

All of our nurseries have a version of a (mechanical) roto-hoe unit for cultivation and weeding the tractor paths.

Lifting is, of course, all via our Love lifter, which picks all eight rows from a nursery bed at a speed that gives us about 2,000 trees per minute, bringing them soil-free to the trailer unit behind the Love lifter where the seedlings go into canvas slings--root to root. They are watered in the sling, the sling is closed with hooks, and then conveyed to a trailer to be carried to the pack room.

In the pack room after culling, the trees are placed in multiwall Kraft bags, and the roots are lightly covered with a clay slurry spray, which may or may not contain Furadan for Pales weevil control. Then the bag is rolled

down, automatically strapped, and ready for storage or shipment. In cold weather, the shipments may be on tarp covered flat beds, but almost always are made in refrigerated vans.

I haven't gone into much detail--I can go on for hours--I came to learn from you gentlemen and have picked up a few things in the last two days I plan to steal or at least try. I used someone else's invitation. as an excuse to be here and I appreciate your allowing me to do so.

Remember to grow them straight, healthy, and without too many blank spots.