

LATERAL ROOT PRUNING IN THE
MISSISSIPPI FORESTRY COMMISSION NURSERIES

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Abstract: Lateral root pruning is used in the Mississippi Forestry Commission Nurseries to increase the lateral root development and for ease in lifting, packing^g and planting in field after the seedling leaves control of the nursery. Generally this operation takes place from August 15 to September 15 depending on seedling size and before seedlings are lifted.

Lateral root pruning has been used for several years in the Mississippi Forestry Commission Nurseries. Up until four years ago this decision was left to each nurseryman. Some nurserymen liked this practice and would lateral prune and other nurserymen would not prune. Four or five years ago the decision was made that all Mississippi Forestry Commission Nurseries would lateral prune as a S. O. P. ^Practice and would undercut if possible. This decision was brought about partly because the Mississippi Nurseries started to use the Love-Oyjord seeder. This seeder puts the seed in a small drill with six and one-half inch spacing between drills. This narrow drill forces the seedling roots to become intertwined with each other. Other reasons are ease of Planting by field personnel, easy lifting of seedling by hand and increased roots being planted on the seedling.

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We hoped the field survival would increase over what it had been in the past. We also want to stop the planter from doing his own pruning on a stump etc. on the planting site. This had been quite a problem in the past. The nurserymen visited some planting sites and found there were more roots being cut off the seedling than were being planted. We brought this to the attention of the District Forester then tried to come up with some system to stop the planters from doing excess pruning in the field. It is hard to tie survival to any one thing, but we are getting better survival on outplanting now than we were in the late 1970's.

The lateral pruner disc is run between each drill and on the outside of the drill next to each alley. This takes place in mid-September. Usually there aren't a lot of roots cut at this time, but the slot that the pruner leaves, will stop the roots and the roots will put on more short roots. The pruner is run about 3 to 5 inches deep on this trip. Irrigation is applied after lateral pruning and we expect a small flush of growth due to increased moisture getting to the roots. The lateral pruner has been used to run over seedlings that were small in mid-August, then fertilizer was applied ahead of irrigation. This put growth on the seedlings most of the time.

The seedling crop is checked closely before lifting. If we feel that the lateral roots are going to give the planter a problem we lateral prune again prior to lifting the seedlings.

The planters have been pleased with this operation. We feel that cutting the roots while the seedlings are still in the ground allows us more control over the root length rather than allowing the planter to prune on the planting site.

The lateral pruner used in the late 1970's and early 1980's was not doing the job that was wanted. The machine was mounted under the tractor on a single axle. This pruner was controlled by the operator on the tractor. I feel that we may have damaged as much as 10% of the seedlings with these pruners by not being able to control them.

In 1983, the people at Mount Olive Nursery built a different pruner from the old single axle type that had been used in the past. This new machine used two axles and the blade cut every other middle in the drills. The rear axle is approximately twelve inches to the rear of the front axle. This keeps the seedlings from being lifted up during the cutting process. The machine uses a hydraulic cylinder to control the steering and requires a person to ride the machine. This machine has two gauge wheels and the lateral disc can be taken off using the frame for an undercutting blade, or a lifting blade. I would advise anyone to use as large a disc on the lateral cutter as they can get. We use a 22 inch blade on these we built. haven't had any damage to the seedling crop if this pruner is not run too fast. If the rate of travel is too fast the man on the machine has a problem controlling it.