HARVEST AND PROCESSING AT THE GEORGE H. WEYERHAEUSER NURSERY

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Abstract: Harvest of the seedling crop generally begins in early December and runs through late February or early March. The J. E. Love lifter is used to supply seedlings to a processing system that results in high quality seedlings graded to customer specifications.

Lifting of the pine seedling crop in eastern North Carolina generally begins in early December. The actual start-up date depends upon the number of chilling hours received. Generally, early lifting means minimal cold storage with storage lengths increasing as more cold hours are accumulated.

We have used the Love lifter for harvesting our pine crops for twelve (12) years. The lifter itself is pulled by a tractor and powered by a PTO driven hydralic pump. The operating controls that control the knife, belts, and lateral movement of the machine are all tractor mounted. These controls are all hydralic on our machines. The knife is driven on an eccentric shaft which gives it a vibrating action to help loosen soil from around the root systems. The sixteen (16) belts are then lowered to lift the seedlings from the bed. Each pair of belts lifts one of the eight rows of trees. As the trees travel up the belts, they are continuously hit by the side to side motion of the root shakers. The lifter travels at a speed of from fifteen (15) to twenty (20) feet per minute.

Our handling trailer is attached to the back of the lifter. There are three (3) employees handling the seedlings. One moves the seedlings off the drop table, another loads the slings with roots toward the middle, and the last one waters the trees and hooks the slings then loads them on a transfer conveyor to be conveyed to a haul trailer. The carts on the trailers are loaded and carried to the packing shed to be unloaded by a fork truck. While the haul trailer is in transit, the slings being loaded on the lifter are piled on the transfer conveyor.

We have recently converted to a bulk handling system where the lifted seedlings are watered and put into large boxes. This has further reduced our lifting crew labor by 25%.

As we see it, the advantages of the Love lifter are:

1. High volume production. The lifter can lift about 100,000 to 125,000 seedlings per hour.

2. Minimal labor required with only 6 people per crew.

3. Quality lifting. The disrupter blade allows for extensive soil disruption resulting in minimal root damage.

4. Good soil removal with minimal damage from the soil shakers.

5. Reliable parts and service through J. E. Love Company.

Disadvantage of the Love lifter is:

1. Cost may be prohibitive for some smaller nurseries. Depending upon type of handling system, the list price ranges from about sixty thousand dollars ($60,000) to sixty-five thousand dollars ($65,000).

After lifting, the seedlings are brought into the packing building where they are put on a conveyor belt to be culled. Culling specifications are determined by customer needs. Graded seedlings are put on the bottom of a two tiered conveyor and the culls are discarded on the floor. The graded trees continue to the end of the conveyor where one thousand (1000) plantable seedlings are put into bags and sprayed with Kaolinite clay slurry. These bags are stamped with the appropriate family and an expiration date depicting the optimum planting window based on cold hour accumulations. Quality control inspectors continuously monitor product quality in terms of total numbers and percent culls. The seedlings are then strapped and put on pallets for cold storage.