PRECISION PLANTING OF SEEDS

Gerald Black
Weyerhaeuser Nursery - Washington, North Carolina

The Weyerhaeuser Company's North Carolina Tree Nursery is using a Stan-Hay seeding machine. This was the first application of this particular type machine in a forest-tree nursery to my knowledge. The machine was purchased in 1969 for use at the Weyerhaeuser Nursery in Washington, North Carolina.

This particular machine was selected because there were several things that Weyerhaeuser Company considered important to our operation. The reasons were: (1) the precision sowing of pine seed; (2) seed sown in eight rows to allow easy use of the eight row lifter; (3) a minimum or no seed damage during sowing; and (4) minimum maintenance and breakdown problems.

As of this year the Stan-Hay seeder has been used to plant five (5) crops in North Carolina. This is a total of over 100,000,000 seedlings. This machine has never had a breakdown. To date this machine has required only preventive maintenance and a new set of seeding belts after five years of use. For the 1974 crop it was calculated that 286,140 linear feet of seed bed could be planted. The actual planted linear feet using this seeder was 286,040 or 100 feet less than was calculated. We feel that this machine has met the original requirements that we were looking for in our operation. Weyerhaeuser Company has purchased eight (8) of these machines for our nurseries in the Southern and Western states.

I will explain some of the physical aspects of the seeder using one individual seeder and also a picture of an actual seeder. Each individual planter consists of a hopper with a capacity of 4 to 5 pounds depending on seed size. With this capacity approximately 2,000 linear feet can be planted before refilling is necessary. Seed flow from the hopper to the seeding belt is controlled by a choke at the bottom of the hopper. Various sizes of chokes can be purchased. The seeding belts are made of rubber and these belts can be punched according to needs. Spring plates vary in size and number of grooves to match seeding belts to assure that only one seed is released at a time. Various pulley and drive belt combinations on the seeder are used to control the number of seed sown. The manufacturers state that seeding can be done from 2 to 4 miles per hour. I have found for pine seed that 2 miles per hour gives me the best control.

Some time-saving methods that have been found beneficial in North Carolina are:

1. Arrangement of Seed Orchard seed into a range of sizes to reduce the number of belt changes and pulley combinations required for proper density.

2. Machining out of spring plate grooves for lots of large size seed.

3. Double check seed distribution when beginning seed lots to assure proper density of sowing.

4. Keep good accurate records of machine settings from previous sowing experience (belt size, different pulley combinations, etc.).