

PRACTICES USED IN HANDLING SEED AND CONTROL OF
WEEDS AT THE WAYNESBORO NURSERY

Clarence W. Walley, Mississippi Forestry Commission
Waynesboro, Mississippi

The first part of my discussion will be about seed, seed collection, seed storage, and planting of both pine and hardwoods.

SEED

A very small word; however, it creates quite a task when seeding time arrives. It becomes necessary to know the true value of seed and how to seed for a desirable uniform density; i.e., 30 plantable seedlings per square foot for pine and 20 per square foot for hardwoods. I think all seed should be laboratory tested so a nurseryman can know the true germinability of his seed before seeding. There are many culprits to contend with in growing a crop of seedlings (cut worms, nematodes, root rot, fungus, fusiform rust, storms, and mechanical damage). However, with the help of our Seed Laboratory, for the past number of years we have been able to get within a very close desirable density for pine, and we probably could with hardwood if we would be willing to pay the price to have the Lab test the seed.

In days before the Seed Laboratory, we would run a cut test, look, and figure, trying to come up with a seeding rate to get a good, uniform density of seedlings but always ending with a sad experience. Also, rodents and birds were problems. It was really hard to combat all of these culprits. Since Morkit and anthraquinone came into use, we have eliminated the bird and rodent problem and the Seed Laboratory has taken the guess work out of seeding, when we will use it! But, still we have to combat the weeds and the rest of the culprits mentioned above.

Treatment and pretreatment of seed.--Seed should be stored in cold storage. Pine seed, with a low moisture content, can be stored below 0°F; however, hardwood seed should be stored just above freezing unless it is a species which can be dried to a low moisture content without damage to the seed.

Prior to seeding, I treat the seed with a bird repellent. In so doing, it is necessary to imbibe enough moisture into the seed for it to have the proper "umph" to germinate. We use Dow Latex 512-R, thus prohibiting moisture penetration after it is applied. As a pretreatment, we stratify all seed unless the laboratory test shows that stratification will damage the seed. We stratify slash pine seed for 15 days; loblolly, 30 days or more; and hardwoods, 60 days, at or above 36°F (34° - 38°F). A cold soak on baldcypress seed is good and this can be done by sinking the seed in a pond for about 60 to 90 days, if such facilities are available.

We stratify the seed by mixing them in wet peat moss at a ratio of 1:1 by volume, then storing in a cooler at the recommended temperature.

I especially prefer to plant hardwood in March and pine in April. The soil should be treated with a suitable fumigant to control root rot, fungus, and weeds.. We are able to spray gum and baldcypress with an herbicidal oil (Naptha).

WEEDS

Weeding of seedbeds dates back to one of the most obnoxious tasks (if not the most) that nurserymen have to face. The cost of everything is going up and yet our patron, vendor, or who have you, still wants to plant cheap seedlings--all of which behooves us to come up with cheaper and better ways to combat weeds. I have tried a pre-emergence (weed) grass repellent (Treflan) which works quite well. In the past, we have planted seedbeds and began oil spraying within 5 days. Now, since I have begun using Treflan, this isn't the case. This year we used Treflan under our entire seedbed area, plus about 20 acres of cover crop area, with very satisfying results. We have a few weeds that Treflan does not control. I would like to play around with a pre-emergence and a ^Post-emergence, such as Cotoran and Kramex plus a few more of the broadleaf weed chemicals. How about 2,4-D? I think if we could control the broadleaf weeds as well as the grasses, we would be in for quite a saving in weeding costs.

For 5 weeks after planting this year, I did not apply mineral spirits and then we only had broadleaf weeds. Mineral spirits is not an undesirable control, but it is a very expensive control and as mentioned before, it does not control all weeds. The most effective way that I have found for the use of mineral spirits is to construct a boom using 8001 SS Tee-Jet nozzles (fan type) spray, placing the nozzles about 14 inches apart and about the same height from the ground, keeping the boom uniformly level while traveling so that the spray rig won't create a drift. We have used varying rates of application per acre. To say which is the most effective would be wrong because conditions vary in each case. The most effective time is when the grass is most succulent from having the night shade, plus the dew (the heavier the dew, the better kill you can expect). I begin spraying around 5:00 a.m. and continue until the dew dries or the wind velocity becomes so that the spray begins to drift. The most effective rate (gallons per acre) is what it will take to kill the grass and not damage the seedlings. Also, I find that the seedlings will stand much more oil than some would recoiruriend.

The structure of a good oil spray rig is a pump, tank, bypass regulator, and guage. I prefer a three-bed boom, consisting of 19

nozzles so that it will cover beds and alleys, with individual cutoff valve for each bed. My first experience with an herbicide was 5 gallons of motor oil, SAE 30, mixed with 100 gallons of water. It worked good until it ate up all our old-fashioned rubber hose. It also killed the grasses. Then next was a fly spray hand pump with Stoddard Solvent from northern California. It killed the grass and did not hurt the pines.. That is when we came up with the low pressure manifold. We attached it to our Hardie sprayers by reducing the pressure from 350 pounds p.s.i. to about 20. The nozzles were changed from the potato beetle (circular) nozzle to the fan (Tee-Jet) nozzle which was better. Then later we came up with a lighter rig which was easier to handle and was still more effective. I am not so sure but that it would pay to increase density, fumigate with MC2, or something as equal, and plant two crops of seedlings in succession before moving off to another planting site.

As a footnote, I would like to make mention of the fact that it is very hard to grow seedlings for an area as large as I have (from northeast Mississippi to the Gulf Coast, which is 300 miles). Most people prefer large seedlings; however, a few people prefer small ones and since we do not grade our seedlings into but one size, it becomes quite a problem. Industry, as a whole, definitely wants larger seedlings.