REPELLENT TREATMENT OF PINE SEED FOR BIRD PROTECTION

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One of the serious problems at the W. W. Ashe nursery has been the protection of pine seed from birds in the beds from the time of sowing through the cotyledon stage. The procedure in the past has been to use a bird patrol with shotguns, or firecrackers inserted into lengths of cotton rope. It was necessary to use various numbers of men from dawn until sundown. The annual expenditure was usually around $3, 500 based on protecting an area producing 30 to 40 million pine seedlings.

The mourning dove caused the greatest damage.

In the fall of 1956 after hearing various reports of successful use of bird repellents, it was decided to try some on fall-sown longleaf seed.

As a check on ease of application, effectiveness as a repellent and effect on germination, four different repellents were used. The treated seed was sown on 18 beds, 4 x 400 feet. Screened plots were set up on the beds to exclude birds and these plots were sown with untreated seed as a check on germination. None of the seed was stratified.

A bird patrol was not used. A daily check was made for damage by birds. When germination was complete, a seedling count per square foot was made. This showed no difference in germination for the treated and untreated seed. All of the seed, regardless of the repellent used, germinated at about the same time.

Although the birds concentrated in the nursery area sown with the above seed, since it contained the only freshly turned soil, there was no bird damage. The treatment was considered successful and plans were made to treat all the seed to be sown during the spring of 1957.

Upon receipt of a report of the work of Harold J. Derr and Brooke Meanley on the use of various bird repellents, a decision was made to use the compound Arasan (Tetramethylthiuram-disulfide 50%). Arasan was favored because the above report showed protection against rodents as well as birds. The area around the nursery contains both rats and mice. Arasan is sold by E. I. DuPont De Nemours & Company.

Approximately 6, 000 pounds of loblolly, slash, sand, and shortleaf pine seed were treated with Arasan and sown on 56 acres of seedbeds during March 1957.

Bird patrols were not used and there was no damage to seed or seedlings. All of the loblolly seed was stratified 30 days or more before treatment.

The method of seed treatment was as follows: A 55-gallon steel drum with one head removed is used to hold an asphalt emulsion mixed at a rate of 3 gallons of water to 1 gallon of asphalt. The asphalt is manufactured by the Flintkote Company and their trade name is Hydrault Protective Coating, Type C-13-HPC. A wire mesh basket slightly smaller in diameter than the drum is filled with a known weight. of seed. The seed are immersed in the asphalt solution and stirred slightly. They are left in only long enough to coat all seed. The basket is raised from the drum and the excess solution allowed to drain back. While the seed drain, 1 pound of the repellent for 4 pounds of longleaf seed, 1 pound for 6 pounds of slash seed, or 1 pound for 8 pounds of loblolly seed, is weighed and placed in a mixing drum. The seed are then poured into the drum which is then rotated slowly for a few minutes so that each seed becomes thoroughly coated.

The seed are then dried in the sun, on canvas, until the coating is firm. They are now ready for planting and may be easily planted with a seeder. Occasionally it may be necessary to clean the excess repellent dust out of the seeder.

The total cost of treating 6, 000 pounds of seed with Arasan was $1,'200.
The usual bird patrol cost has been about $3, 500. It is believed that the seed received better protection than could have been given with a bird patrol. The 14 use of Arasan resulted in a saving of $2, 300 for the nursery.