USE OF BIRD REPELLENTS FOR NURSERY SOWING

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At the Stuart Nursery, 3, 500 pounds of slash and loblolly seed were treated with bird repellent chemicals before spring sowing in 1957. The two chemicals used were Arasan (50% TMTD) and sublimed anthraquinone. The two stickers used were Flintkote's asphalt emulsion, C-13-HPC and Dow latex, #512R (48% solids).

Quantities of materials used and the costs for 100 pounds of slash or loblolly seed were as follows:

	Amount used	Cost
Arasan	16.6 Pounds	$14.56
Anthraquinone	20.0 Pounds	17.60
Asphalt	1.8 Gallons (dilute in 2 parts water)	2.07
Latex	.3 Gallons (dilute in 9 parts water)	.68

The method of treating seed and the equipment used were similar to that recommended in "Tree Planters' Notes No. 20 of June 1955 by W. F. Mann, Jr. and H. J. Derr.

Batches of 35 pounds of seed were immersed in the sticker solution and allowed to drain. The wet seed and the dry chemical were then placed in the tumbler drum and rotated for 4 minutes. The treated seed was spread on canvas in front of a fan and stirred periodically until the seed was dry enough to feed through the seeding machine. When treating stratified seed, it is not necessary to dry the seed before dipping it in the sticker solution.

Three men treated 2, 400 pounds of seed in 8 hours by this method., This production could be increased considerably by using a small concrete mixer powered with an electric motor instead of the tumbler drum rotated by hand. Sears-Roebuck lists a suitable machine with electric motor for about $85.

Both chemical repellents and stickers gave excellent protection from bird damage. No bird patrols were necessary. In fact it was a problem to find birds on the seedbeds so that their food intake could be examined. Seven mourning doves were shot while on the seedbeds, but none of them had taken any tree seed. In contrast, birds have been a severe problem in previous years. In 1956, for example, 395 mourning doves were shot at the Stuart Nursery. During

a 6-week period, 532 man-hours were spent patrolling and shotgun shells were used costing $93.

The combination of anthraquinone and latex was found to be more desirable than Arasan and asphalt. Anthraquinone is nonirritating to handle. Arasan is very irritating to the eyes, nose and throat of the handlers and retards germination. The seed treated with anthraquinone germinated faster and tests made by the Southern Forest Experiment Station gave a consistently higher total germination for seed treated with this chemical. Latex, which is a white liquid, is cleaner to handle than asphalt, is a better adhesive, and does not cause the seed to stick together after drying, thus permitting better distribution through the seeding machine.

	Source of Supply	
Arasan (50% TMTD)	E. I. Depont De Nemours Co.	Grasselli Chemical Dept. Wilmington, Del.
Sublimed anthraquinone	American Cyanamid Co.	Calco Division Bound Brook, N. J.
Asphalt emulsion C-13-HPC	Flinkote Company	Industrial Products Div., Atlanta, Ga. or New Orleans, La.
Latex #512R (48% solids)	Dow Chemical Company	Midland, Mich.