

Helicopter Seeders Can Damage Conifer Seed

Helicopters are used in many parts of the country to broadcast tree seed on cutover, burned, or nonstocked lands. To determine if seed germination is reduced when helicopter seeders are used, the Forest Service tested three seeding systems commonly used in the Pacific Northwest. Tests were conducted in western Oregon in spring 1969 using Douglas-fir (*pseudotsuga menziesii*) and noble fir (*abies procura*) seed.

System No. 1 dispersed seed through a slinger unit consisting of two 16-inch discs separated by five vertical vanes. Seed entering between the two spinning discs was forced outward in all directions.

System No. 2 broadcast seed by a blower unit which moved it along

an airstream through a flexible hose. The hose was split to feed a spreader unit on each of the helicopter's skids.

System No. 3 is similar to 1. Instead of a disc-shaped slinger, it used eight tubes radiating from a central hub. Seed was dispersed in all directions as the hub rotated.

The helicopters were not *flown* for these tests. They were raised off the ground on blocks to allow slinger units to be lowered to normal operating position. Seed samples were passed through the seeders and caught in traps and sent to the seed testing laboratory at Corvallis, Oreg. for germination tests. A control (no treatment) sample was also tested.

Test results were as follows:

<i>System</i>	<i>Germination percentage</i>
Control (no treatment)	82.8
No. 2	75.8
No. 3	74.2
No. 1	54.7

The tests indicated that the germination percentage of Douglas-fir and noble fir seed can be reduced when sowing with helicopter seeders. It may be worthwhile for those planning seeding projects to determine which seeder is best suited to their needs prior to seeding. A more detailed account of this test can be obtained from Missoula Equipment Development Center, in ED&T 1771-*Investigation of Helicopter Conifer Seeding Equipment*.

Next year, if there are enough students interested, a horticultural vocational education course will be set up to run half the year, Haever said. If successful, it will run throughout the year after that.

Haever said the school has developed other vocational education at the school along similar lines. These programs are intended to give the students an opportunity to find an interest and then develop it so they will have a vocation after high school.

Voc-Ed training has proven very useful in helping deaf youngsters develop, and is especially helpful in providing incentive for those students who have difficulty with their regular school work. It is also good for developing a sense of responsibility, especially among the older students who help with the supervision of the younger ones, Haever added.

The seed and styrofoam "plug" containers were provided for the project by the Forestry Department, and the greenhouse already existed on the Deaf School grounds where it was used for raising greenery for the campus grounds.

The seedlings will be used in the State's reforestation program in Lane County and northwestern Oregon after the first rains next fall. (From *The Forest Log*, Salem, Oreg.)

Tree Giveaway

Winnebago Industries Inc. of Forest City, Iowa, has invited its dealers in the northeastern part of U.S. to participate in a tree giveaway program this year in which 150,000 trees will be passed out. Winnebago press letter says the giveaway was prompted by the report by Forest Service that it has a 4.2 million acre backlog of needed planting.

New Books

Viereck, Leslie A. and Elbert L.

Little, Jr.

1972. Alaska Trees and Shrubs. U. S. Dept. of Agriculture, Forest Service. Agriculture Handbook No. 410. 265 pp. This handbook serves to identify the native woody plants of Alaska and to provide additional related information. The 33 species of trees (also 1 naturalized) and 94 species of shrubs are described in nontechnical terms. For each species, abundant notes are included on its ecology, occurrence and uses, as well as a small range map showing its distribution in Alaska. Each species is illustrated with a black and white line drawing. Keys are included for the trees and shrubs in their winter-leafless condition, as well as in their summer forms. The vegetation of Alaska is de

scribed in detail, and the types of forests and tundra are shown on a large folded map in colors. The book is described as a response to the need for information about the natural resources of Alaska and an indispensable tool for people desiring to learn the names and other information about native trees and shrubs. It will be of particular interest to those interested in preservation and wise use of the State's resources and environment.

New Publications

Wearne, Robert A.

1972. Dollars and decisions in tree planting. U.S. Department of Agriculture, Extension Service, PA 992. Pre-planning, as outlined in this publication, can make the difference between profit and loss from tree planting decisions. The economic principles involved apply for tree growers in any part of the country. Briefly, total costs of tree planting equal the original planting costs, plus annual maintenance costs, plus interest on these investments. This publication takes you step-by-step through the process of finding the total cost. It gives examples to illustrate the process, - - and worksheets for calculating your own costs.