

## MIST BLOWERS AS A NURSERY TOOL

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In the Douglas-fir region the trend is toward larger planting stock and older age classes. To some nurseries this means a 2- to 3-million-tree transplanting program. In areas of heavy vegetative competition, the larger sized planting stock is gaining in preference. Because these areas also abound with rodents, a foliar repellent spray needs to be applied as a defense against browsing and clipping by these animals. Initial repellent treatments in the nurseries of the Northwestern States were made on seedlings in beds averaging 50 seedlings per square foot. At this density conventional agricultural spraying equipment could do an adequate job at a nominal cost per thousand seedlings sprayed. When the same equipment was used to spray transplants at a density of from 6 to 8 per square foot, the costs of material and application per thousand trees skyrocketed.

Efforts to reduce these costs produced gratifying results when some experimental spraying was done with a backpack mist blower. Savings incurred by using a mist blower has made it possible to continue foliar spraying of the larger planting stock.

While the backpack mist blower is ideal for small lots of trees and is especially suited for applying experimental quantities of material, it is not sufficiently practical for use of a large-scale production basis. A foliar repellent spray, however, can be applied to transplant trees in the nursery beds, at a reduction of 65 percent of the spray material, by using tractor-mounted mist blowers that are equipped with a fan-shaped duct to direct the airflow (fig. 1). The sheetmetal outlet used is 36 inches wide, 4 inches high, and 18 inches long. There are three 1/4 AXH SS whirljet nozzles spaced as shown across the opening of the outlet. We found that by putting in wooden baffles to restrict the outlet opening to 1 inch in height, back 4 inches from the outer edge, we obtained more complete coverage. This can be compared to the choke of a shotgun barrel.

The only material that we have applied in quantity is the foliar repellent spray TMTD recommended by the Bureau of Sports Fisheries, U.S. Fish and Wildlife Service, to reduce the browsing and clipping of planted trees by small animals and rodents. The formulation contains 10 percent Thiram (tetramethylthiuramdisulfide), 10 percent Rhoplex AC-33 (an acrylic resin), and 80 percent water and inert material (percentages are based on weights of active ingredients; other special thickening or sticker material is often used).

This is our first effort to adapt the mist blower for use in our nursery. We are certain that future improvements and modifications of the machines and of nursery techniques will result in greater use of mist blower equipment to apply fertilizers, insecticides, weedicides, and other field applications. We feel that the mist blower apparatus will have a definite place in forest nurseries.

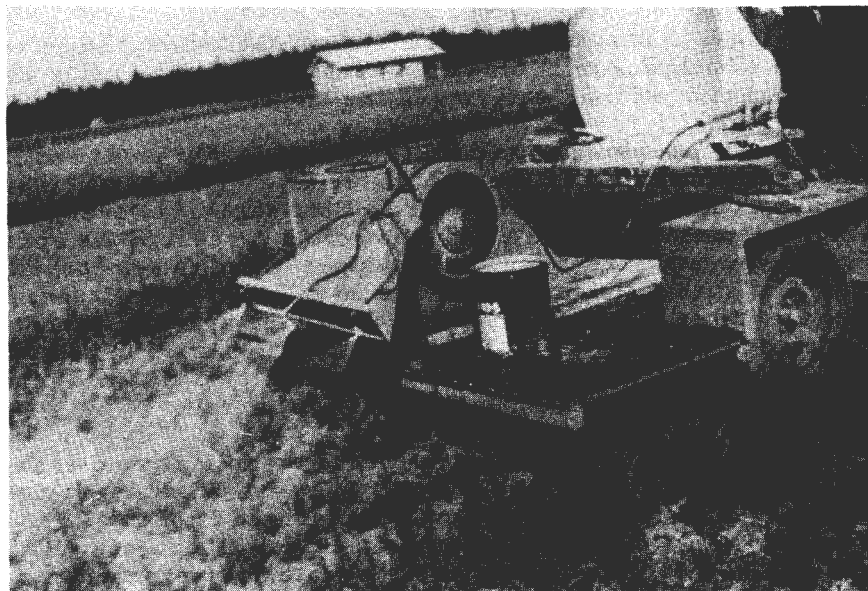
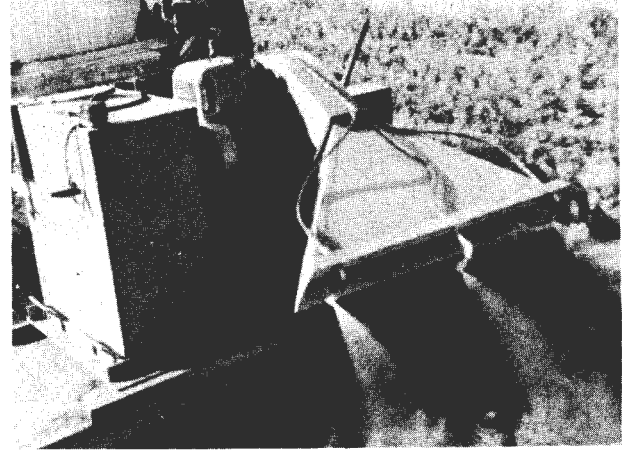
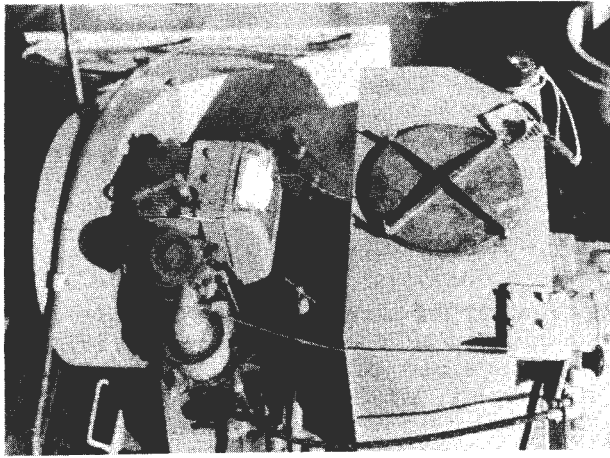


Figure 1.--Mist blower in operation.