

Wisconsin Trials Indicate

BEST HERBICIDES FOR TREE PLANTING

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The establishment of new forest plantings by use of herbicides was started at the Hancock Experimental Farm in 1969. The objective of this trial is to determine the tolerance of two major Wisconsin Christmas tree species, white spruce and scotch pine transplants, to various herbicides on light sandy soils. Soils of this area are mapped as Plainfield sand, and are droughty under normal conditions.

Treatments were sprayed on an old alfalfa-brome sod and replicated three times. Predominant grass species were quack, brome and green foxtail. The major broadleaf weed was alfalfa with some redroot pigweed, hoary alyssum and white cockle.

Wettable powders and emulsifiable concentrates were applied with a bicycle plot sprayer having a 5 ft. swath. Granular materials were applied in a 3 ft. band with an applicator designed by Agricultural Engineers at the University of Wisconsin.

Simazine wettable powder and granules, atrazine wettable powder and dichlobenil (Casoron) granules were applied at 2, 4 and 8 lbs. (actual) per acre. Simazine WP at 2, 4 and 8 lbs. per acre was applied in combination with aminotriazole at 4 lbs. per acre and with paraquat-dichloride (Paraquat at 1 lb. per acre). The treatments were initiated the fall before planting, and again the following spring before or during planting.

Fall treatments were applied on September 11, 1969. Spring treatments were applied immediately after plowing on April 17, with the following exceptions: aminotriazole and Paraquat were applied pre-plant on April 8; and the same materials were applied by directed spray on May 29.

Results show, after one growing season, for single herbicide treatments, atrazine 80W at 4 lbs. per acre, applied fall or spring, was one of the most effective* and was the least expensive in controlling both grasses and broadleaved weeds. Germination and growth of green

foxtail in late summer was extensive. However, it did not appear to affect survival of the trees. Fall-applied Simazine WP and granules controlled grassy weeds effectively at 4 lbs. per acre, but was ineffective against broadleaved weeds. Simazine WP at 8 lbs. substantially increased the effectiveness of broadleaf weed control.

The ineffectiveness of dichlobenil was due probably to the fact that it was not incorporated into the soil at time of application. Vaporization from spring-applied dichlobenil granules may have resulted in lower tree survival.

Excellent weed control and survival of trees* were obtained with aminotriazole at 4 lbs. per acre applied in the fall, followed by 8 lbs. of Simazine WP applied at planting. Applying these same materials together in the fall, but decreasing the Simazine WP to 4 lbs. per acre, gave adequate weed control and tree survival.

This herbicide trial will be continued for at least two more growing seasons to observe effectiveness for continued weed control and for phytotoxicity to the trees.

* 90% or more

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These are the spray rigs the Hancock Experimental Farm used in its herbicide trials on new forest plantings.