

SIMAZINE MAY STUNT YOUNG EUROPEAN LARCH

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Growth of young European larch (*Larix decidua* Mill.), weeded with the herbicide simazine 80W, was measured in a plantation near La Crosse, Wis. This study was prompted by an earlier observation in which it was noted that many larch leaves had died following application of simazine.

The plantation studied contained four blocks of 2-0 stock planted in April 1967. Each block had 25 rows of 20 trees each, for a total of 500 trees. The blocks were densely covered with Kentucky Bluegrass, alfalfa, wild carrot, and other weeds up to 3 feet high that were competing with the new seedlings. In October 1967, simazine 80W was applied at a rate of 5 pounds per acre using a backpack sprayer. A 2-foot-diameter circle around each tree in every other row was sprayed. Care was taken to avoid spraying the tree foliage. The concentration used was that recommended by the University of Wisconsin 1 for general use in weeding conifer plantations.

Seedling response in sprayed versus unsprayed rows was determined in three ways: (1) Current growth of the terminal shoot, (2) mortality, and (3) incidence and degree of leaf dieback. Growth was measured twice: July 15 and November 6, 1968. Seedling growth was measured in all rows in July, but in only 40 percent of the rows in November. Rows selected for the November measurement were chosen at random, and the July data used in the analysis were taken from these same rows. The average growth per tree per row was calculated and used as a dependent variable in an analysis of variance. Only surviving trees were used in the growth averages to avoid confounding growth with mortality. No statistical analysis of mortality or leaf dieback was made.

1 Wisconsin Conservation Department. Recommendations for weed control in forest plantations for the 1963 growing season. Misc. Res. Rep. 5, 5 p. 1963.

The July measurement showed that average growth on sprayed rows was 14 percent less than on unsprayed rows (significant at the 99-percent level), and ranged from 0 to 22 percent on individual blocks. The lack of a significant interaction (95-percent level) between spraying and time suggests that most of the growth loss occurred in the first half of the growing season (fig. 1). Second-half growth rates were about equal even though competition from weeds had been reduced on sprayed rows. Mortality was 12 percent on sprayed rows and 10 percent on unsprayed rows. Needle dieback occurred only on sprayed rows with smaller seedlings being most affected.

These results suggest that simazine should not be used in young European larch plantings.

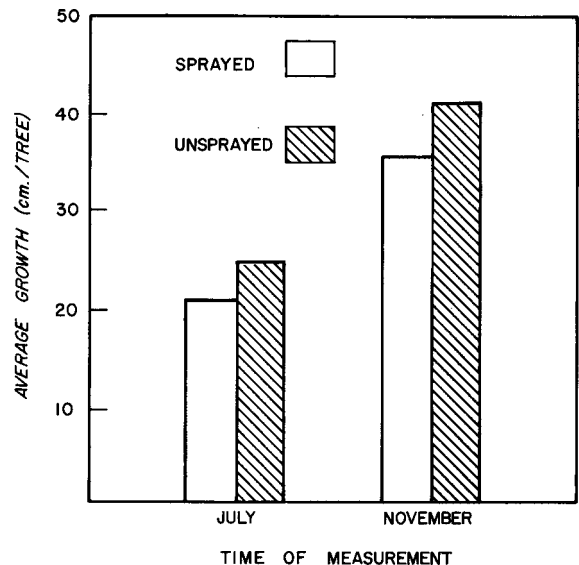


Figure 1.—Growth of sprayed and unsprayed seedlings as measured in July and November.