

SEEDLING LOSSES IN ARIZONA CYPRESS

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The practice of growing Arizona cypress in forest nurseries for Christmas tree plantings has been expanding during the past few years. Susceptibility of the species to various insects and diseases, however, is the major limiting factor in its culture. Losses in nursery beds often amount to more than 50 percent of the growing stock. Mortality has been particularly high during the 1956 growing season in the Georgia Forestry Commission nurseries.

Most of the mortality has, in the past, been attributed to Phomopsis blight. Nurserymen routinely follow a spray schedule recommended by Slagg and Wright ^{2/} in which they apply 3/4 pound of Special Semesan ^{3/} with 5 ounces of DuPont spreader-sticker in 75 gallons of water per acre weekly from June 1 through September 30. Phomopsis was found commonly on the trees in early June but could not be isolated later in the season. This suggests that the recommended spray program is effective in checking; this disease.

Despite the fact that Phomopsis blight was being controlled, mortality in the beds continued and by mid-July had become severe. Examination of the seedlings revealed that a high percentage of them had been girdled below ground by an insect. Silken tubes were often found attached to the girdled seedlings. In addition, a number of head capsules and frass of lepidopterous larvae were found. Later a few larvae were found feeding on the seedlings. These have been tentatively identified as the lesser cornstalk borer.

Applications of benzene hexachloride (BHC) at the rate of 1 gallon of the 12 1/2 percent gamma isomer in 60 gallons of water per acre applied at 4-week intervals have provided adequate control of this insect. In addition to the BHC, tests have indicated that parathion at a dosage of 2 pints of the 50-percent emulsifiable concentrate to 100 gallons of water per acre or

1/ This work was done in cooperation with the Georgia Forestry Commission and the Georgia Forestry Research Center at Dry Branch, Ga.

2/ Slagg, C. M. , and Wright, E. Control of cedar blight in seedbeds. Amer. Nurseryman 78 (7): 22-25, Oct. 1, 1943. (Also Kansas State Hort. Soc. P roc. 1943: 22-25.)

3/ Manufactured by E. I. DuPont de Nemours Company, Wilmington, Del.

guthion (Bayer 17147) at a dosage of 2 pints of the 25-percent emulsifiable concentrate to 100 gallons of water per acre will control the insects.

A survey of the cover crops in the nurseries showed that field peas were heavily infested with the insect. Damage to the beds was generally greatest nearer the cover crops. The moths apparently fly from the peas and lay their eggs in the Cypress beds.

A third source of losses is the dying in August and September of the tips of terminals and laterals. The fungus Sclerotium bataticolum is present on some of these stems, and a species of *Alternaria* is fruiting on others. Both of these fungi might be pathogenic under some conditions. However, observations of the trees indicate that the tips may have been killed by some other organism and that these fungi are merely secondary. Inoculation studies are now under way to determine whether or not they are primary pathogens.