NURSERY DISEASE PROBLEMS - PHOMA BLIGHT

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INTRODUCTION

In 1971 and 1975 there were major losses of 1-0 Douglas-fir at the Humboldt nursery in McKinleyville, California. The fungus most commonly isolated from the needles and stems of these declining trees has been a Phoma species. Although pathogenicity tests have not been conducted at this time, evidence suggests that Phoma.sp. is the probable cause of the disease.

Host and Damage. The Phoma sp. has only been found killing Douglas 1r at the Humboldt nursery. In the winter and early spring it causes a blight on the foliage of the smaller 1-0 Douglas-fir seedlings, sometimes totally destroying the foliage and buds of these seedlings.

Life History,. The following is a supposition based on field observations. At Humboldt nursery, the Douglas-fir grow 1 to 6 inches the first growing season. During the winter and early spring, rain splashing and irrigation cause a build-up of soil around the stem and into the lower crown of the smaller seedlings. Phoma which is a soil resident, grows out of the soil, initially infecting the colytedons. It then spreads up the crown of the seedling killing the needles, until the seedling is defoliated. Frequently the disease also affects the new buds.

The initial symptoms are a chlorosis of the needles. These infected needles then turn a golden brown and are cast. After an undetermined period of time the fungus will form fruiting bodies that look like black raised spots on the dead needles.

Control. The only registered control for this disease is chlorothalonil, sold as Bravo 6F. This fungicide is applied at two to four week intervals from October to April. If cultural methods can be developed to inoculate the seedling beds with mycorrhizal fungi after fumigation, the seedlings will grow tall enough, the first growing season, to withstand the effects of infection by Phoma sp.