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MERIA NEEDLE CAST ON BAREROOT 2-0 SEEDLINGS AND YOUNG
TREE IMPROVEMENT PLANTATION TREES -
USDA FOREST SERVICE NURSERY, COEUR D'ALENE, IDAHO

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During the spring and early summer of 1990 at the USDA Forest Service Nursery in Coeur d'Alene, Idaho, extensive injury to western larch (*Larix occidentalis* Nutt.) was seen in bareroot 2-0 stock and young trees within a tree improvement plantation located in the southwest corner of the nursery. Examination of injured seedlings and trees indicated severe infection by the needle cast fungus, *Meria laricis* Vuill. This disease was associated with prolonged periods of cool, wet weather (Dubreuil 1982), which persisted throughout much of the spring and early summer. The last major outbreak of this disease at the nursery occurred during the 1983 growing season (James 1985). Since that time, growers have applied protective sprays of chlorothalonil and benomyl to larch seedlings each spring during periods of high susceptibility. These fungicide applications are especially important on 2-0 bareroot stock where most of the damage is usually seen.

Fungicide applications were made on bareroot larch seedlings during 1990 as in previous years. However, extensive rains occurred throughout most of the spring and early summer. As a result, severe necrosis of larch foliage became evident (figure 1). Although fungicides were applied when weather permitted, they did little to significantly reduce disease symptoms as long as cool, wet weather persisted. However, seedling mortality, which had been common in previous outbreaks (James 1985), was very rare in 1990. Finally, dry, warm weather occurred in July and infected seedlings slowly began to recover. New foliage was produced during July and August and by the time of seedling dormancy in the fall, evidence of the disease was minimal. Although disease could be found in 1-0 stock, severity was light and seedlings appeared mostly normal when entering the dormant stage at the end of the first growing season.

Western larch in the Coeur d'Alene tree improvement plantation were in their third growing season after outplanting. The planting stock was container-grown seedlings from many different families. Plantation trees had grown extensively during the first two seasons and some were several feet tall. Meria needle cast was noticed during the early spring of 1990, affecting young foliage that had just formed (figure 2). The disease spread throughout the spring and early summer and many trees had extensive needle injury. However, despite the disease, young infected trees continued to grow rapidly. Because of their size, trees could not easily be sprayed with protective fungicides. However, one application of chlorothalonil was made at the end of spring with a specially rigged applicator. When warm weather finally occurred in July, the disease did not progress, but remained static throughout the rest of the growing season. Estimates of levels of disease damage were taken within



Figure 1. Bareroot 2-0 western larch with Meria needle cast at the USDA Forest Service Nursery, Coeur d'Alene, Idaho.

the plantation as well as individual growth characteristics. The plantation will probably be maintained for a few more years, although certain individual trees may be periodically removed.

Meria needle cast is a persistent threat to western larch seedlings at the USDA Forest Service Nursery in Coeur d'Alene. This disease occurs at low levels during most years. Although it is most damaging to 2-0 bareroot stock (Cooley 1984), the disease may also occur on 1-0 bareroot and container-grown stock (James 1985). The existing program of protective fungicide applications during the spring is usually effective (Cooley 1981). However, occasionally when cool, wet weather persists for very long time periods and seedling foliage does not dry out, disease outbreaks may be expected. This is what happened in 1990. Fungicides probably help keep the disease from becoming more lethal, such as prohibiting fungal invasion of stem tissues and preventing girdling cankers. When dry weather finally occurred in the summer, infected seedlings were able to "out-grow" the disease sufficiently so that by the time seedlings were lifted, they appeared healthy and met specifications for outplanting.

Continued applications of fungicides in the spring are recommended to reduce impact of Meria needle cast in the future. These treatments are especially important in 2-0 beds of larch where potential for damage is greatest.



Figure 2. Meria needle cast on foliage of young western larch tree within a tree improvement plantation at the USDA Forest Service Nursery, Coeur d'Alene, Idaho.

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