RUST OF WESTERN LARCH CONES - USDA FOREST SERVICE NURSERY, COEUR D'ALENE, IDAHO

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Nursery Disease Notes #75

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During extraction of western larch (Larix occidentalis Nutt.) seed at the USDA Forest Service Nursery, Coeur d'Alene, Idaho, several cones from the Fernan Ranger District, Idaho Panhandle National Forests were found that had evidence of superficial growth of a rust fungus on the outer cone scales. Samples were taken to the laboratory and the fungus was examined under the microscope. Several aecial blisters were found on the cone scales; aeciospores resembled those described for the genus Melampsora (Ziller 1974).

Descriptions indicated that the fungus could be either M. medusae Thuem. or M. occidentalis Jacks. Both have been frequently reported on larch needles; however, only M. medusae has been reported on cones (Ziller 1974). Morphologically the two species are differentiated on the basis of spore size (Ziller 1955). Since there were no "known" organisms available for comparisons, it was assumed that the rust was caused by M. medusae.

This is the common conifer-poplar rust which can infect several different coniferous species including larch (western and tamarack), Douglas-fir, ponderosa and lodgepole pine, grand fir, and western hemlock (Ziller 1965; Ziller 1974). Its telial hosts are aspen, several species of cottonwood and many types of poplar. Most damage occurs on telial hosts throughout North America (Heather and Chandrashekar 1982; Schipper et al. 1978). Damage can be extensive within poplar stands and is especially serious in young plantations (McCracken et al. 1984; Schipper et al. 1978). Damage to conifer hosts is usually minor, often resulting in only small amounts of needle necrosis (Sutherland and Miller 1987). The fungus occurs occasionally on cones (Myren and Gross 1977; Ziller 1974), but has not been reported as being a major problem of seed production.

Normally this disease only occurs periodically and is of no consequence. Therefore, control measures are usually not necessary. However, the disease may be more important on larch cones than currently thought. Larch seed cones may often be damaged extensively, especially by insects (Miller 1986). It is possible that diseases such as cone rust are also involved in limiting seed production. Cones should be carefully scrutinized for presence of rust prior to shipment to the nursery. Any with evidence of rust on cone scales should be discarded prior to shipment.

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