CYLINDOCLADIUM SCOPARIUM: A PATHOGEN OF SEEDLING EUCALYPTUS

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Cylindrocladium scoparium Morgan, a widespread fungal pathogen on a variety of plant species including forest trees, has caused severe damage to container-grown eucalyptus crops in south Florida over the past two years. Losses in one nursery alone have reached nearly 220,000 seedlings, including 1/2 of one 1979 Eucalyptus grandis W. Hill ex Maiden crop. C. scoparium is endemic to much of the United States and, in Florida, is commonly recovered from leaf spots on Eucalyptus spp. in the field. Under nursery conditions including close spacing of seedlings, overhead irrigation, high relative humidity, and comparatively high temperatures, the fungus becomes a highly virulent and destructive pathogen on seedling eucalyptus.

Infections begin primarily as leaf spots, although stem lesions indicative of direct stem infections are sometimes present. With time, infections progress to a blighting of the lower foliage, accompanied by severe lesions or cankers on the lower stem. These stem lesions develop from a rather superficial browning of the outer cortical layers to a black and/or "constricted" canker, completely encircling the infected stem. Lesions are frequently centered at points of leaf petiole attachment, suggesting a progress of infection from leaves to stems through the petioles. Heavily infected seedlings often die in the nursery, but more frequently, severely damaged seedlings simply break off at the point of stem lesion development and are rendered unsuitable for outplanting.

Limited outplant trials have shown that seedlings with slight to moderate infections present no serious problem in terms of outplant performance. Survival and growth of such seedlings following outplanting does not differ appreciably from that of disease-free seedlings. Apparently, disease development is largely arrested once seedlings are removed from the nursery environment. Heavily infected seedlings, on the other hand, represent a very poor risk in terms of outplant success. Although a few of these seedlings will "come back" by means of root sprouts, etc., most fail altogether. Evidence suggests that root infections by C. scoparium are involved in these situations.

Results of a fungicide screening trial, conducted in south Florida in 1979, indicate that adequate control of this disease problem may be achieved in the nursery with applications of chlorothalonil and/or benomyl.

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[1]Reprinted from: BARNARD, E. L. 1980. Pest Management in Florida's Commercial Forest Nurseries. Fla. Sect. SAF. Spring Symposium. 11p. (in press).