

Method for Recovering *Verticicladiella procera* from Basal Cankers on Eastern White Pine

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ABSTRACT

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Verticicladiella procera can be detected in eastern white pine with basal cankers by placing chips from the cankered areas on wet filter paper in petri dishes and observing fungal sporulation.

Several eastern white pine stands in southern Ohio 4–25 yr old with basal black-stained cankers were examined in the fall and winter of 1977. The symptoms were typical of white pine root decline previously reported in Ohio (1). Because recovery rate of *Verticicladiella procera* Kendrick from isolates on artificial media was very low, a method was developed specifically to detect *V. procera*.

MATERIALS AND METHODS

Entire cankered areas from trees that were dying or had been dead for up to 5 yr were placed in plastic bags with wet paper towels and incubated at 20 C, with about 10 hr of light and 14 hr of darkness per day, for 3 wk, then examined with a

dissecting microscope for *V. procera*. The pattern of sporulation of *V. procera* suggested that chips from the basal canker surface would suffice for recovery of the fungus; 10 1-in. squares of paper placed randomly on the canker surface consistently included the colonized areas.

The method was tested on 10 trees from each of four classes: 1) infected but not dying, 2) dying, 3) dead for 1 yr, and 4) dead for more than 1 yr. The bark was removed and 10 1-in. chips were taken from the cankered area of each tree using a sterilized chisel. The chips were taken to the laboratory in plastic bags under refrigeration and placed on wet filter paper in petri dishes at 20 C, with 10 hr of light and 14 hr of darkness per day.

The chips were observed every other day for conidiophore production. Conidiophores of *V. procera* were aseptically transferred from the chips onto acidified potato-dextrose agar. The

cultures were compared with stock cultures from the original Ohio isolates described by Kendrick (2), and identification was confirmed by Leon S. Dochinger, U.S. Department of Agriculture, Northeastern Forest Experiment Station.

RESULTS AND DISCUSSION

Conidiophores of *V. procera* occurred at random on 5–10% of the surface of cankered areas; the fungus never sporulated on heavily pitch-soaked areas or at canker margins, however. Among the 10 trees in each class tested, *V. procera* was recovered from all those dying or dead for 1 yr and from eight of those infected but not dying or dead for more than 1 yr.

We have used this quick and easy method for recovery of *V. procera* from symptomatic eastern white pine trees for 3 yr. The technique may work for other host species and other species of *Verticicladiella*.

LITERATURE CITED

1. DOCHINGER, L. S. 1966. Etiology of root decline of eastern white pine in Ohio. U.S. Dep. Agric. N.E. For. Exp. Stn. FS-NE-2304-5.
2. KENDRICK, W. B. 1962. The *Leptographium* complex, *Verticicladiella* Hughes. *Can. J. Bot.* 40:771-797.

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