

# Root Rots on Shumard Oak in a Central Louisiana Nursery

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Isolations from apparently diseased 1-0 Shumard oak seedlings grown at a small private nursery in Lecompte, La., yielded the root rot fungi *Cylindrocladium scoparium* Morgan and a *Phytophthora* sp. This is the first report of *C. scoparium* on Shumard oak and the first time it has been noted in Louisiana.

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In 1981, a high percentage of the Shumard oaks (*Quercus shumardii* Buckl.) in a plantation near Logansport, La., were evidently diseased. These seedlings had been transplanted from a small private nursery located in Lecompte, La. In the same plantation, seedlings of saw-toothed oak (*Quercus acutissima* Carruthers) and loblolly pine (*Pinus taeda* L.) obtained from a separate Louisiana nursery were apparently unaffected.

Foliar and root symptoms on the Shumard oak included leaves with brown irregular areas at the margins and taproots with extensive necrosis (fig. 1). Foliar symptoms were present both in the plantation and at the nursery (fig. 2); root symptoms were present only at the nursery.

## Methods

Isolations were attempted from nursery and plantation soil samples using Flowers and Hendrix medium for *Phytophthora* and from seedlings using potato dextrose agar (PDA) for other possible pathogens.

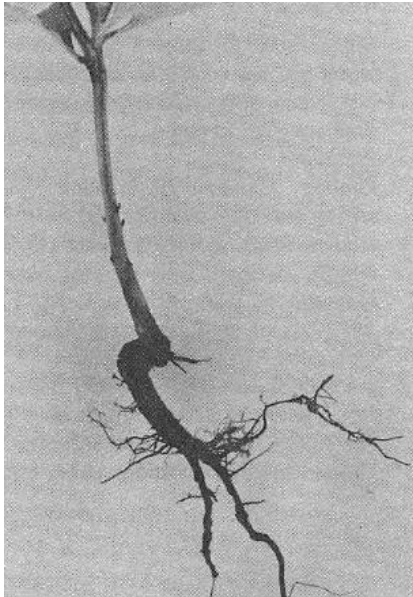


Figure 1.—Extensive root necrosis cause by *Cylindrocladium scoparium* on Shumard oak.

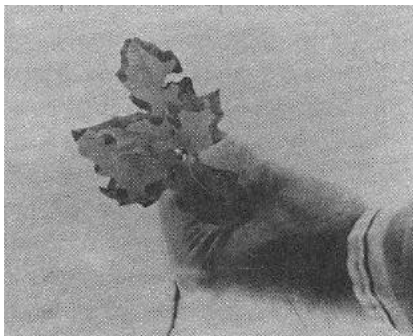


Figure 2.—Foliar symptoms associated with *Cylindrocladium* root rot of Shumard oak.

## Results

High propagule counts of *Phytophthora* sp. were obtained from soils collected from both the nursery and outplanting area. Counts of 16 and 62 propagules per gram of soil were obtained

from the nursery samples. The outplanting sample yielded 7 propagules per gram.

Root tissue isolates from the nursery on PDA consistently yielded the fungus *Cylindrocladium scoparium* Morgan.

## Discussion

The two pathogenic soil fungi *Phytophthora* sp. and *Cylindrocladium scoparium* have diversified host ranges and cause severe seedling losses to a variety of hardwoods. The presence of *C. scoparium* in Louisiana was previously unknown (1). If these pathogens are transported to uninfested outplanting sites, subsequent root disease could pose problems for affected landowners in Louisiana.

In North and South Carolina and Kentucky, *Cylindrocladium* spp. destroyed all or most of walnut (*Juglans nigra* L.) (2, 3), yellow-poplar (*Liriodendron tulipifera* L.) (1, 3), and sweetgum (*Liquidambar styraciflua*) (4) crops at forest tree nurseries in the 1960's and early 1970's.

Preplant soil fumigation with MC-33 (67 percent methyl bromide and 33 percent chloropicrin) is currently recommended as the most effective prevention of these root rots. Once the disease appears, control of *Cylindrocladium* root rot can be achieved with soil drenches using benomyl (Benlate). Only Captan is registered and is effective

against *Phytophthora* root rot once it appears. Local extension agents or foresters should be contacted for specific information about the use of these chemicals.

#### Literature Cited

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2. Cordell, C. E.; Matuszewski, M. *Cylindrocladium scoparium* – damaging black walnut seedlings in Kentucky nurseries. Plant Dis. Rep. 58: 188-189; 1974.
3. Cordell, C. E.; Skilling, D. D. *Cylindrocladium* root rot. In: Peterson, G. W.; Smith, R. S., eds. Forest nursery diseases in the United States. Agric. Handb. 470. Washington, DC: U.S. Department of Agriculture; 1975: 23-26.
4. Kuhlman, E. G.; Cordell, C. E.; Filer, T. H., Jr. *Cylindrocladium* root rots of sweetgum seedlings in southern forest tree nurseries. Plant Dis. 64(12): 1079-1080; 1980.

#### Correction

The Winter 1983 issue of Tree Planters' Notes (Vol. 34, No. 1) contains an error on page 11 in table 1 of the article "Evaluation of Six Weed Control Treatments in an Interior Spruce Seed Orchard" by Paul J. Birzins. The percentage of weed encroachment for the control should read "33.3bc."