

Diseases Of

Wax Myrtle

In Florida Landscapes



BY Dr. E. L. Barnard
Forest Pathologist
Division of Forestry,
FDACS

Wax-myrtle or southern bayberry (*Myrica cerifera* L.) is a shrub or small tree native to the southeastern coastal plain of the United States. Its natural range extends from southern New Jersey to the Florida Keys and westward into southeastern Oklahoma, East Texas, and Central America. Wax-myrtle is also endemic to Bermuda and the West Indies. The leaves, bark, roots, branches, and waxy fruits of wax-myrtle have been used for various medicinal purposes, and the wax from its berries is still used to make fragrant bayberry candles, as well as soap and shoe polish in some localities.

Wax-myrtle is adaptable to a variety of site conditions and is increasingly popular as an ornamental due to its rapid growth, favorable

response to pruning, and attractive evergreen foliage. The popularity of wax-myrtle as an ornamental in Florida is further enhanced by its native plant status, low maintenance requirements, wildlife food value, and statewide availability.

Generally, wax-myrtle is not seriously affected by infectious diseases, another feature which adds to its desirability as an ornamental. In recent years, however, two relatively obscure and potentially serious diseases have been diagnosed with increasing frequency on wax-myrtle in Florida landscapes. This could reflect an upsurge in disease occurrence or simply be a natural result of the increased utilization of wax-myrtle as an ornamental. In either case, recognition by arborists and other landscape professionals is a first step toward increased understanding and eventually better plant health care.



Fusarium wilt. Wax-myrtle exhibiting a general loss of vigor, stunted, curled, wilting, and off-color foliage, and/or death of branches or entire stems are commonly infected by the vascular wilt fungus, *Fusarium oxysporum*. Although laboratory isolation and identification of the fungus is required for diagnostic confirmation of the disease, visual diagnostic support is often supplied by a distinctive pale to dark brown staining or discoloration of the xylem (wood) in infected branches and stems (fig. 1). Sometimes, depending upon stage of development, lighting, etc., this vascular staining displays a notably purplish hue (perhaps related to pigmentation of the fungus itself). To date, confirmed reports of the disease are all from central to southern Florida, with a notable number of reports concentrated near Tampa Bay.

Fusarium oxysporum is a soilborne fungus and presumably enters wax-myrtles by direct penetration of roots or through root wounds resulting from transplanting or landscape maintenance operations. Feeding injuries caused by certain plant parasitic nematodes may also be important points of entry for the fungus. Once inside a susceptible host, the fungus enters the xylem and colonizes the plant's vascular system. This results in restricted water flow, and the eventual demise of the infected plant.

Because of the soilborne nature of the wax-myrtle wilt fungus, disease management is based on common sense and good horticultural practices. Recognize the risks of pathogen-infested soils (e.g., soils where plants have succumbed to the disease), minimize injuries to landscape plants, practice good sanitation (i.e., removal of infected plants/infested soils) when replacing diseased plants, and avoid the movement or use of infected plants and pathogen-infested soils. Soil fumigation may be useful in certain situations, and the possibility of disease resistant wax-myrtle varieties or cultivars in the future should not be dismissed.

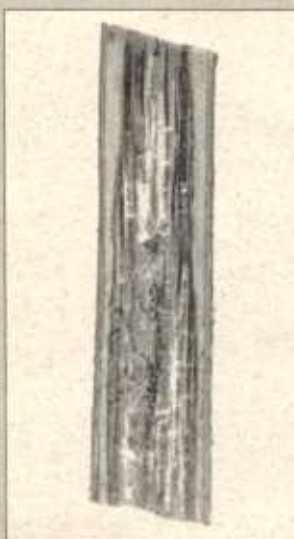
Inonotus heartrot. The fungus, *Inonotus rickii*, causes a severe heartrot in the stems of wax-myrtle. Infections have been observed in abundance on



Fig. 1. Vascular staining in the xylem (cross section) of a 2-inch stem of wax-myrtle caused by *Fusarium oxysporum* (photo: courtesy of the Division of Plant Industry, FDACS).



Fig. 2. Heartrot of wax-myrtle caused by *Inonotus rickii* in cross (a) and longitudinal (b) sections of infected stems (photo: courtesy of the Division of Plant Industry, FDACS).



plants in natural settings as well as in urban landscapes in southern Florida. Infected plants may appear unthrifty, but healthy appearing plants are infected as well. The branch stubs and associated callus tissues of infected plants often display a dark brown to red-brown or coffee-colored staining due to the apparently profuse "bleeding" of xylem sap at these foci. At certain times, the fungus produces distinctive "dusty", red-brown to brown beard-like growths at the branch stubs. These growths are the fruiting bodies of the fungus' asexual stage (*Ptychogaster cubensis*), and the "powder" or "dust" is a profusion of fungus spores; a helpful diagnostic feature.

Internally, *Inonotus rickii* causes a distinctive spongy, yellow-brown to red-brown decay of the central xylem (heart) tissues of infected wax-myrtles (fig. 2). This decay is often flecked with distinct streaks of white (mycelium of the fungus itself) and is bordered by a dark purplish-brown zone of solid, but stained xylem tissue (possibly evidence of strong compartmentalization). Extensive decay may contribute to a general decline in plant vigor and renders infected stems vulnerable to breakage.

Infections of *Inonotus rickii* presumably result from airborne spores which initiate infection at branch stubs or stem injuries. Accordingly, prevention in urban landscapes is based on sound arboricultural practices. Avoid planting infected plants, minimize stem/branch injuries, and conduct pruning operations carefully. Do not prune trees during periods when sporulating structures (e.g., the beard-like fruiting bodies,) are known to occur.

A word of caution. Apparently, it is not uncommon to extract wax-myrtle from the wild for market and landscape purposes. Accordingly, since both *Fusarium* wilt and *Inonotus* heartrot occur in natural stands, extreme caution must be exercised during such operations. Digging and marketing infected plants is a sure-fire way to spread disease and worsen the threats represented by the diseases. "An ounce of prevention is worth a pound of cure".