



FOREST and SHADE TREE PESTS

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Fungicides for Tree Diseases: What, Where, When and Why Bother?

Traditional approaches to the **management and/or control of plant diseases** have and continue to emphasize the use of fungicides applied as foliar sprays, drenches (plant or soil), and in recent years, injections (esp. for larger plants; i.e., trees). To be sure, pesticidal (including fungicidal) chemistry has undergone some remarkable changes in recent years, and a wide variety of products of varying efficacy is now available to consumers and plant protection practitioners. All well and good . . . but there are a few principles that users would be well advised to keep in mind when considering the use of fungicides to deal with tree diseases. The following brief treatise highlights a few.

Effective fungicide treatments have been developed and are available for a number of tree diseases. In such cases, target pathogens (i.e., disease-causing agents such as fungi or bacteria) have been studied extensively, and aspects of their biology are reasonably well understood (time of sporulation, method of infection, conditions favoring infection, etc.). Such information, coupled with extensive and often repeated studies of application rates, timing and methods of applications, etc., provides a reasonable basis for effective fungicide *prescriptions*. Unfortunately, for many tree diseases, this kind of **information is simply unavailable**. As a result many so-called “prescriptions” are untested extrapolations and guesswork of questionable efficacy at best.

Several other factors deserve attention when fungicides are considered for treatment of tree diseases. For example, for a good many tree diseases (including heartrots, decays in general, many canker diseases, certain root diseases, and others) **fungicides just do not work!** Sometimes this reality is a reflection of the fact that the necessary research to develop an effective treatment has not been conducted. More often, however, the nature of trees and their diseases just do not lend themselves well to fungicidal control.

Further, by the time one observes symptoms of tree disease, it is more often than not **too late** for fungicides to be effective. Most fungicides function prophylactically, not therapeutically. Fungicides may **prevent** the spread of disease to uninfected trees or tree tissues by protecting against *new* infections (then, **only** if the right material is applied at the right rate, time, place and schedule). Fungicides **do not cure** trees or tissues already infected/damaged.

A final consideration is the fact that many tree *diseases* are in fact **natural and cyclic ecological phenomena** that pose no threat whatsoever to *diseased* trees. Many foliage diseases fall into this category, being nothing more than late season, **leaf senescence** phenomena. Other diseases such as certain heartrots and root and butt rots are similarly old growth, **tree senescence** phenomena that are equally, cyclic ecological realities. These are simply old age realities on “geriatric” trees. While these latter types of diseases do in fact contribute to the demise of their host trees, they are for the most part untreatable, and certainly not amendable to fungicidal control. As for the former group (late season, leaf senescence *diseases*), why would one want to resort to fungicidal *control*? The leaves are going to abscise and fall

Prepared by Dr. Ed Barnard, Forest Pathologist, Florida Department of Agriculture and Consumer Service's Florida Forest Service. For additional information, please contact a local office of the Florida Forest Service.

anyway. That's what *old* leaves do! Remember, many of the organisms we have labeled pathogens are simply performing their natural ecological role, and there is often nothing we can do about it. And, there is often no good reason to do anything about it.

Before you begin to spray, ask yourself a few simple questions. "What am I dealing with?" "Where did the *problem* come from?" "Is it a *problem*?" "When should I apply a fungicide?" "Should I apply a fungicide?" "Will a fungicide do any good?" "Why bother?"

FORESTRY OFFICES

1. Escambia, Santa Rosa, and Okaloosa Counties

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11650 Munson Highway
Milton, FL 32570 850/ 957-6140

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Bryceville, FL 32009 904/ 266-5001

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1600 N.E. 23rd Ave
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Bunnell, FL 32110 386/ 446-6785

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Brooksville, FL 34601-4201 352/ 754-6777

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Orlando, Florida 32809 407/856-6512

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Okeechobee, FL 34972-8697 863/ 462-5160

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Fort Myers, FL 33905 239/ 690-3500 ext. 100 or 101

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Everglades District
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Davie, FL 33314 954/ 475-4120