



UNIVERSITY OF  
FLORIDA

IFAS EXTENSION

## Some Common Diseases of Mango in Florida<sup>1</sup>

Ken Pernezny and R. B. Marlatt<sup>2</sup>

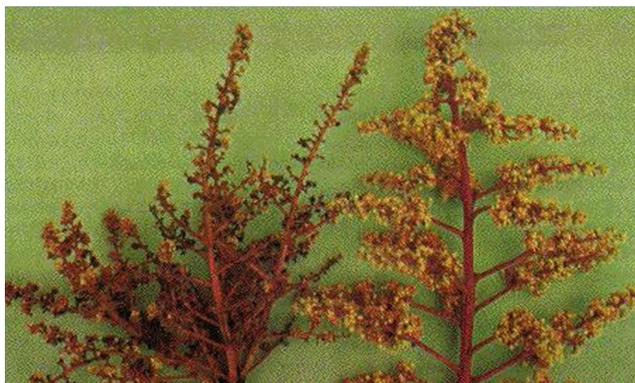
The mango tree is a tree fruit well-known and widely consumed throughout the tropical world, but is grown commercially in mainland USA only in southern Florida. Demand for mangoes is increasing in Florida as more people become aware of its unique flavor and as the Latin American population grows. It is expected that commercial and backyard plantings of mango trees will continue to increase.

The number of diseases affecting mango in Florida is relatively small but can seriously limit production if not adequately controlled. This fact sheet concentrates on the symptoms of the important mango diseases, the weather conditions conducive to disease development, and methods for control. Due to frequent changes in the availability and use restrictions for agricultural chemicals, consult the University of Florida Extension Service or the *Plant Disease Control Guide* for specific, current fungicide recommendations.

### ANTHRACNOSE

Anthracnose, the most important mango disease, is caused by the fungus *Colletotrichum gleosporioides*. Flower blight, fruit rot, and leaf spots are among the symptoms of this disease. Infections on the panicles (flower clusters) start as small black

or dark-brown spots. These can enlarge, coalesce and kill the flowers (Figure 1), greatly reducing yield.



**Figure 1.** Anthracnose on the panicles can enlarge, coalesce, and kill the flowers.

On leaves, anthracnose infections start as small, angular, brown to black spots (Figure 2). If tissue is young when originally infected, spots can enlarge to form extensive dead areas (Figure 2). Infections that begin in older leaves usually result in smaller lesions with a maximum diameter of 1/2 inch (6 mm) that appear as glossy dark-brown to black angular spots.

Fruit infection commonly occurs and can result in serious decay problems in the orchard, in transit, at the market, and after sale. The fungus apparently invades the skin of young fruit and remains in a

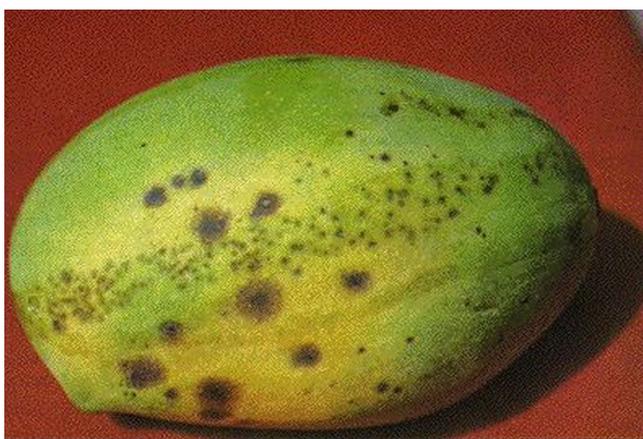
1. This document is PP23, one of a series of the Plant Pathology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date December, 1993. Reviewed July, 2004. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.
2. Ken Pernezny, Professor, Plant Pathology, Everglades Research and Education Center, IFAS, University of Florida, Belle Glade, FL 33430; R. B. Marlatt, Emeritus Professor of Plant Pathology, Tropical Research and Education Center, Homestead, FL 33031.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Employment Opportunity - Affirmative Action Employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For information on obtaining other extension publications, contact your county Cooperative Extension Service office. Florida Cooperative Extension Service / Institute of Food and Agricultural Sciences / University of Florida / Larry R. Arrington, Interim Dean



**Figure 2.** Anthracnose infections start as small, angular, brown to black spots.

"latent" (a living but nonsymptom-producing) state until fruit ripening begins. Ripe fruit, either before or after picking, can then develop prominent dark-brown to black decay spots (Figure 3). These may coalesce and penetrate deep into fruit, resulting in extensive fruit rotting. An interesting manifestation of anthracnose fruit damage is the symptom called "tear staining" (Figure 4). Anthracnose stains are created on the fruit surface where fungus spores wash along in spore-laden water droplets falling from infected twigs and panicles above the fruit.



**Figure 3.** Ripe fruit can develop prominent dark-brown to black decay spots.

Anthracnose is usually more serious in years when rain and heavy dews are more frequent during



**Figure 4.** Tear staining caused by anthracnose fruit damage.

the critical periods of infection from the onset of flowering until fruit are about half size.

Control of anthracnose, especially on very susceptible cultivars, such as 'Haden' and 'Irwin', centers on a **diligent** fungicide program. Effective control of even the postharvest phase of this disease is best accomplished by a good spray program in the orchard. Begin fungicide applications at the first appearance of panicles and continue spraying at recommended intervals until the preharvest waiting period is reached.

Homeowners with only a few trees may consider planting Indo-Chinese/Philippine-type mangoes. Many of the mangoes in this group are relatively resistant to anthracnose and will significantly reduce homeowners' dependence on regular spraying for control. Although not as colorful as the much more familiar Indian types, many of the Indo-Chinese/Philippine mangoes combine this anthracnose resistance with good flavor and a desirable low-fiber flesh.

## POWDERY MILDEW

Powdery mildew is caused by the fungus *Oidium*. Although a somewhat sporadic disease, it can cause severe crop loss due to flower and panicle infection and subsequent failure of fruit set.

The diagnostic key in the identification of this disease is the appearance of a whitish, powdery growth of the fungus on panicles and young fruit. Young infected fruit turn brown and fall. The white

growth can also be seen on the undersurface of young infected leaves. Severe infection of young leaves results in premature leaf drop. On mature leaves, the spots turn purplish brown, as the white fungal mass eventually disappears (Figure 5).



**Figure 5.** On mature leaves, powdery mildew eventually turns purplish brown.

Powdery mildew occurs in the spring and is particularly destructive in years when the weather is cool and dry.

Control is fungicide treatment.

### **ALGA SPOT (RED RUST, GREEN SCURF)**

A parasitic alga, *Cephaleuros* spp., incites this relatively minor disease of mango. Leaf spots start as circular green-gray areas that eventually turn rust red as the alga produces a profusion of rust-colored microscopic "spores" on the leaf surface (Figure 6). Infection of stem tissue can also occur and is much more serious than leaf infection. Cankers develop in the bark and stem-thickening can take place at infection sites. Rust-red "spore" masses will also develop on infected stems. Severely diseased branches may have to be pruned from the tree. Alga spot only becomes a serious problem when growers are overly dependent on organic fungicides for general foliar disease control. It normally is not a problem where copper fungicides are used periodically.



**Figure 6.** Alga spot.

### **VERTICILLIUM WILT**

*Verticillium* wilt, caused by the soil-borne fungus *Verticillium albo-atrum*, is a disease of increasing importance to mango production, especially on the Rockdale soils of Dade County. The problem is usually observed in young trees planted on land previously cropped to vegetables, especially tomatoes. The *Verticillium* fungus can survive in soil in a dormant state for at least 15 years. When trees are set in infested soil, the fungus returns to an active stage and invades the mango roots. As *Verticillium* colonizes and blocks the vascular (water-conducting) system, trees begin to exhibit symptoms of water stress.

Trees decline and die back slowly in more or less random fashion in the grove. Leaves wilt and die, often in a characteristic "one-sided" fashion, a key diagnostic feature (Figure 7). The dead leaves often remain attached to infected branches, giving the tree a "fired" appearance (Figure 7). If longitudinal cuts are made in infected branches, brown vascular discoloration is often evident.

The only practical control for this disease is to avoid agricultural land with a previous history of intensive vegetable production. Unfortunately, *Verticillium* management through site selection is becoming more difficult in areas of increasing urbanization.



**Figure 7.** Dead leaves often remain attached to infected branches, giving the tree a "fired appearance."