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DISORDERS

Sooty Mold on citrus

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FIG. 1

Type Problem: Plant Disorder

[Plant pathologists usually group causes of plant health problems or diseases into two categories. Some diseases in plants are caused by non-living factors including environmental stress or improper cultural practices. This category of diseases is referred to by a variety of names. The term 'Plant Disorder' is utilized herein. Other equivalent terms and references include 'abiotic diseases', 'physiological disorders', 'non-parasitic diseases', 'non-infectious diseases', and 'non-pathogenic diseases'.

Other plant diseases are caused by a living pathogen (or more than one pathogen including fungi, bacteria, viruses, and nematodes. This category of diseases is referred to by a variety of names including 'biotic diseases', 'parasitic diseases', 'pathogenic diseases', and 'infectious diseases'.]

FIG. 2

Period of Primary Occurrence:

- Sooty mold actively grows when temperatures are warm and humidity is high
- Sooty mold can also be a problem during our typically mild, sub-tropical winters

FIG. 3

Description / Symptoms

- Presence of sooty mold indicates that there is an insect problem on the plant (or a nearby plant)
- Sooty molds are not plant parasites nor plant pathogens and are fairly harmless saprophytic fungi
- Sooty molds are dark-colored fungi utilizing honeydew as food
- Honeydew is a sweet, clear, sticky liquid excreted by certain sucking insects including whiteflies, aphids, mealybugs, leafhoppers, soft scales, cottony scales, psyllids and other insect pests that suck sap from plant tissues
- Fungi that most commonly cause sooty molds are in the genera *Capnodium, Fumajo* and *Scorias*
- Species of sooty molds growing on honeydew are determined by a combination of the environment, the host, and the insect species producing honeydew
- Sooty mold fungi overwinter on twigs and branches
- Spores produced by sooty mold fungi are windblown

FIG. 4

- Appearance of a black or charcoal gray continuous sheet of mold that will peel away like delicate black tissue paper (Fig. 2 & 3)
- Distorted, rolled or pale foliage, deformed blemishes
- A thick coating of soot on leaves which can result in premature leaf drop, dead leaves, premature fruit drop and decreased fruit production
- Understory plants may be affected but have no insect pest infestations if overstory plants are infested with sucking insects, i.e., honeydew will drop onto understory plants


FIG. 5


FIG. 6

Plant Problems Caused by Sooty Molds

- Stunted growth may occur because sunlight penetration is reduced/inhibited reducing plant's photosynthesis ability
- The combination of a large number of sucking insects and a thick growth of sooty molds may drastically reduce the vigor and beauty of ornamental plants and reduce the value of fruit crops
- Problem worsens under drought conditions – lack of rain concentrates honeydew and insects may increase honeydew production
- Shrubs and plants growing under shady conditions are more susceptible to serious damage

Best Management Practices (BMP)

Sooty molds can be indirectly controlled by reducing populations of sucking insects that excrete honeydew. The first step in control of sooty mold is to accurately identify the insect pest problem (aphids, scales or other sucking pests) and suppress the specific pest excreting the honeydew to manageable levels

NON-CHEMICAL CONTROL

- Plants can tolerate a light amount of sooty mold
- Avoid over-feeding plants with nitrogen all at once causing fast growth; where possible, use a urea-based, time-release plant formulation throughout the growing season
- Dislodging moderate levels of insect infestations with a strong stream of water early in the day on a frequent basis can help manage pest populations
- Attract and release natural predators (such as lady beetles, parasitic and braconid wasps, green lacewings, and lizards) to help provide natural control

ANT MANAGEMENT

- Ants (including imported fire ants) will protect honeydew producing insects from predators and parasites in order to harvest the honeydew. Controlling ants is imperative and will allow natural parasites and predators to better control sucking insects
- Prune or trim the infested plant parts

CHEMICAL CONTROL

- Applications of a botanical insecticide with pyrethrin as an active ingredient provide control for many sucking insect pests on citrus
- Dormant oil (winter), horticultural oil, neem oil and insecticidal soaps help control heavier infestations year round (be sure to follow directions so new growth is not damaged)

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