



Martin -Gatton  
College of Agriculture, Food and Environment  
Cooperative Extension Service

## Plant Pathology Fact Sheet

PPFS-GEN-22

# Sooty Molds Associated with Insect Pests

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### IMPORTANCE

Sooty molds often cause concern when their growth covers plant surfaces. These dark-colored fungi give leaves and stems an unsightly, black sooty appearance (FIGURES 1 to 4), but they do not directly infect plants. However, when sooty mold growth is dense (FIGURE 4), it can obstruct sunlight and result in yellowing tissue. Sooty mold growth is most common on ornamentals, but can also develop on fruits, vegetables, and hemp.



### FUNGAL ORGANISMS

Sooty molds are fungi that grow on the sugary honeydew excretions deposited by certain insects (see next section). Sooty molds do not parasitize or penetrate plant tissue, and they do not generally endanger plant health. Instead, these fungi break down insect excretions present on plant surfaces and utilize them as a source of nutrition. Honeydew that drips onto hard surfaces such as cars, houses, and fences may also support sooty mold growth.

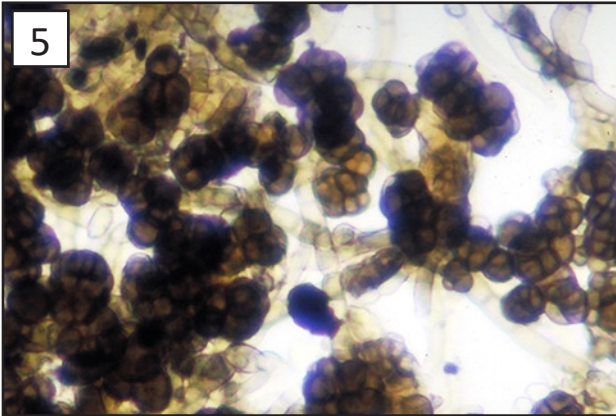
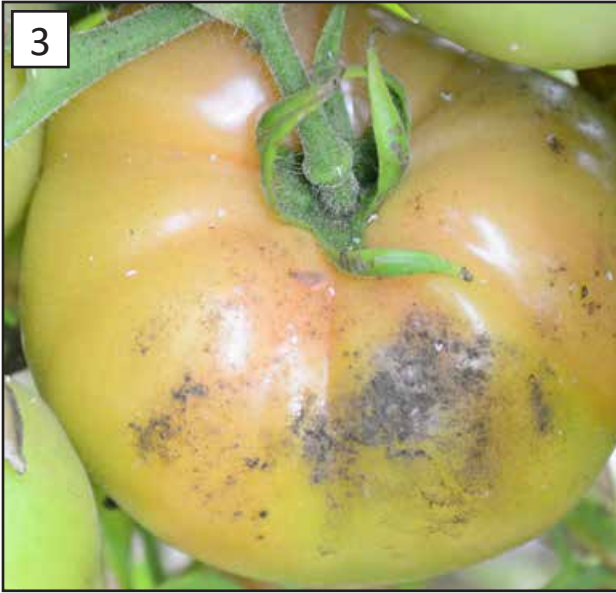
Several different fungal genera have been identified as sooty molds, including *Aethaloderma*, *Capnodium*, *Cladosporium*, *Euantennaria*, *Fumago*, *Scorias*, and *Trichomerium*. Many of these fungi are “sticky,” which enables them to cling to surfaces.

Sooty mold spores are windblown or splashed onto surfaces covered in honeydew, where they germinate and begin new colonies. Once the dark, microscopic spores and mycelia (thread-like strands that comprise the fungal body) are abundant, they become visible as black sooty growth (FIGURE 5). While moisture is needed for spore germination, sooty molds tend to be more prevalent during dry periods when honeydew-producing insect populations increase. In addition, rainy weather can dilute honeydew, as well as cause the sooty mold fungi to flake off.

**FIGURE 1.** WHILE SOOTY MOLD GROWTHS ON LEAVES AND STEMS ARE GENERALLY CONSIDERED UNSIGHTLY (ESPECIALLY ON ORNAMENTALS), THESE DARK-COLORED FUNGI DO NOT PARASITIZE PLANT TISSUES.

**FIGURE 2.** SOOTY MOLD DEVELOPS ON THE HONEYDEW SECRETIONS OF CERTAIN INSECTS. HERE, A PINE TORTOISE SCALE (*TOUMEYELLA PARICORNIS*) INFESTATION HAS PROVIDED THE FOOD SOURCE FOR THIS FUNGAL GROWTH.





**FIGURE 3.** WHITEFLY INFESTATIONS LEAVING HONEYDEW DEPOSITS CAN RESULT IN THE DEVELOPMENT OF SOOTY MOLD GROWTH ON TOMATO FRUIT AND OTHER GREENHOUSE CROPS.

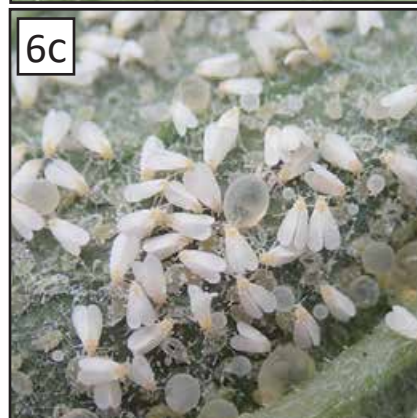
**FIGURE 4.** DENSE SOOTY MOLD GROWTH BLOCKS SUNLIGHT AND CAN RESULT IN YELLOWING. IN THIS CASE, THE INSECT CULPRIT IS THE CRAPE MYRTLE APHID (*SARUCALLIS KAHAWALUOLEALANI*).

**FIGURE 5.** SOOTY MOLD SPORES AND MYCELIA ARE MICROSCOPIC, BUT WHEN ABUNDANT, THEY ARE VISIBLE AS A BLACK SOOTY GROWTH. HERE, SPORES OF THE *FUMAGO* SP. WERE VIEWED UNDER A MICROSCOPE AT 200X MAGNIFICATION.

## INSECT PESTS

Honeydew-producing insects are sap-feeding pests, often from the order Hemiptera, also known as the “true bugs.” These insects include aphids (FIGURE 6A), mealybugs, planthoppers, psyllids, soft scale insects (FIGURE 6B), and and whiteflies (FIGURE 6C). All have piercing-sucking mouthparts, which allow them to pierce plant tissues and extract the sugary phloem. These insects consume large amounts of sap in order to obtain sufficient nourishment. Once they digest the phloem and extract nutrients, the insects excrete a significant amount of honeydew.

Honeydew-producing insects often cause more damage to plants than the sooty mold. Leaf-yellowing, cupping and curling of leaves, early leaf drop, and “dusky” leaves, as well as remnant exoskeletons, can all be indicators of honeydew-producing insect pests. Other insects (such as ants and wasps) may also be observed “tending” or visiting insects in order to consume the honeydew.



**FIGURE 6.** EXAMPLES OF HONEYDEW PRODUCING INSECTS INCLUDE APHIDS (A), CALICO SCALE (B), AND WHITEFLIES (C),

## MANAGEMENT

### Insect Monitoring & Suppression

Suppressing the insects responsible for the honeydew will deprive sooty molds of their food source. Managing insects will reduce any direct damage caused by their feeding activities.

Successful pest management begins with pest monitoring and identification. Monitoring for honeydew-producing insects can include:

- Direct monitoring by using a hand lens or other magnifying tool to look for pests on leaf surfaces and inside cupped and curled leaves.
- Tapping leaves or flowers onto a piece of paper to look for insect movement.
- Installing yellow sticky cards at plant height, and then checking the cards regularly.

Once identified, there are several options for suppressing insect pests. Most true bugs can be managed with insecticides, including:

- Horticultural oil
- Insecticidal soap
- Neem
- Synthetic insecticides.

Some sap-sucking pests, such as mealybugs and whiteflies, may be difficult to manage. For persistent pests, a systemic insecticide application is an option. Contact a local county Extension office for recommended insecticides. Regardless of the product chosen, follow the label, making sure the pest and the plant to be treated are listed.

### Sooty Mold Removal

Sooty mold removal can be difficult on established colonies that adhere tightly to surfaces. However, in some situations, the following process may be helpful:

1. Spray sooty mold-covered surfaces with a detergent mix (1 tablespoon liquid detergent per gallon of water)
2. Wait approximately 15 minutes and rinse with a strong stream of water.
3. Repeat as needed over the next few weeks.

### Do Nothing

Because sooty molds rarely endanger plant health, it is not necessary to take action if the insects are not causing significant damage.

- Allow the sooty mold fungi to “weather off” with time.

## ADDITIONAL RESOURCES

- Aphids (EntFact-103)  
<https://entomology.ca.uky.edu/ef103>
- Rosy Apple Aphid (EntFact-211)  
<https://entomology.ca.uky.edu/ef211>
- Scale Insects (multiple fact sheets)  
<https://entomology.ca.uky.edu/categories/scale-insects>
- White Flies in the Greenhouse (EntFact-456)  
<https://entomology.ca.uky.edu/ef456>
- Woody Plant Disease Management Guide for Nurseries & Landscapes (PPFS-OR-W-29)  
<https://plantpathology.ca.uky.edu/files/ppfs-or-w-29.pdf>

*September 2023*

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**Acknowledgments:** The authors thank Kim Leonberger, Plant Pathology Extension Associate, and Delia Scott, Horticulture Extension Associate, for their review of this publication.

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**Photos:** University of Kentucky—Ric Bessin (3) and Cheryl Kaiser (5); Bugwood.org—Joseph O’Brien, USDA Forest Service (1), R. Scott Cameron (2), Rebekah D. Wallace, University of Georgia (4), Whitney Cranshaw, Colorado State University (6A & 6C), and Raymond Gill, California Department of Food and Agriculture (6B)

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Revised from the original fact sheet, *Slime Mold, Lichens, and Sooty Mold Problems on Plants* (PPFS-MISC-03) by John Hartman and Brian Eshenaur.