HOW TO

Recognize and Control Sooty Molds

United States Department of Agriculture **PREPARED BY** Forest Service North Central Research Station

Sooty molds are dark fungi that grow on honeydew excreted by sucking insects or on exudates from leaves of certain plants. Typically, sooty mold growths are composed of fungal complexes made up of ascomycetes and fungi imperfecti. Some of the common genera of fungi found in sooty mold complexes are *Cladosporium*, *Aureobasidium*, *Antennariella*, *Limacinula*, *Scorias*, and *Capnodium*.

The dark color of sooty mold growth is due to the presence of melanoid pigments in the cell walls of the hyphae that make up the sooty mold colonies (fig. 1). Many sooty mold fungi have mucilaginous cell walls that help them adhere to the surfaces on which they grow and also serve to prolong periods of wetness by absorbing moisture for their growth.

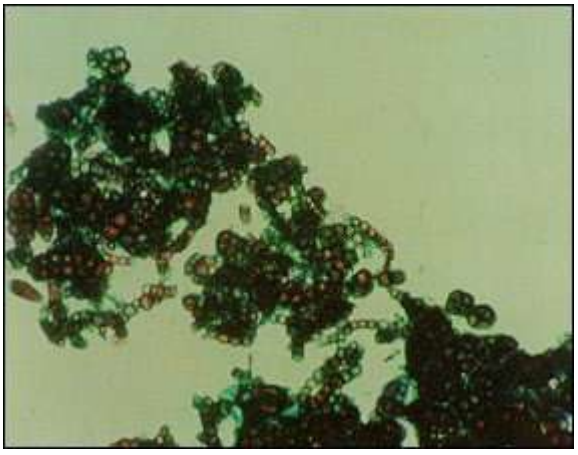

Figure 1. Closeup of sooty mold growth showing individual fungal cells.

Honeydew excreted by sucking insects such as scales and aphids (fig. 2) serves as a balanced growth medium for fungi. Insect honeydews contain sugars, amino acids, proteins, minerals, and vitamins. All are required for fungus growth. Sooty molds can also grow on exudates produced by glandular trichomes on leaves of some plants such as *Catalpa*, *Hibiscus*, and *Juglans* species.

Sooty mold growth is of two types. The first is a deciduous growth on leaves, which lasts for the life of the leaf. The second is persistent growth on stems and twigs of woody plants and on humanmade structures. In this type, growth is renewed from existing mycelium of the fungi produced the previous season.

Figure 2. Aphids on undersurface of black walnut leaflet.

Sooty mold coverings on leaves block light, making photosynthesis less efficient. On outdoor structures and furniture, sooty mold growths are unsightly and may be difficult to remove (figs. 3-6). Many people are allergic to sooty molds, particularly the *Cladosporium* and *Aureobasidium* components common in sooty molds of the Eastern U.S.

Figure 3. Propane tank under black walnut tree with sooty mold growth on it.

Figure 4. Closeup of sooty mold colonies on surface of propane tank.

Figure 5. Sooty mold growth on surface of patio umbrella located below black oak trees.

Figure 6. Sooty mold growth on house rain gutter located below a silver maple tree.

Sooty Molds and Global Climate Change

Because sooty molds are more common under warm conditions, the higher temperatures and increased drought stress brought on by a changing climate are expected to increase the

prevalence of sooty molds. During drought, aphid populations and their honeydew production typically increase on foliage undergoing moisture stress. Also, under dry conditions, less rain would be available to remove or dilute honeydew concentrations suitable for sooty mold growth on leaves and other surfaces. During the extended summer drought of 1988, sooty molds were more prevalent throughout the Northeastern U.S.

Control

Sooty molds can be indirectly controlled by reducing populations of sucking insects that excrete honeydew. Outdoor furniture can be hosed down with water during periods of honeydew excretion, particularly during drought. The growth of sooty mold fungi is inhibited by preservatives used in treated wood in rustic outdoor furniture. Here is the recipe for a good cleaning solution for removing sooty molds from plastic or painted surfaces:

Powdered household detergent	1/3 cup
Household liquid bleach	1 quart
Trisodium phosphate	2/3 cup
Water	3 quarts

Be sure to wear rubber gloves when cleaning with this solution.

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