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Treatment of Sooty Mold-Symptoms and Therapy

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The term "sooty mold" refers to a group of fungus species, including *Capnodium mangiferae, Capnodium ramosum, Meliola mangiferae, and Tricospermum acerinum*, which thrive on the sugary excretions (honeydew) produced by insects that consume sap, including scale insects, aphids, and whiteflies. Even when fungi do not directly infect plant tissues, they can nonetheless significantly affect plant health by blocking sunlight and preventing photosynthesis. Sooty mold gets its name from the dark thread like growth (mycelium) of the fungus that resemble a layer of soot. Sooty mold forms on plant parts and other surfaces where honeydew accumulation takes place, but it doesn't hurt plants. Because they consume plant sap, phloem-feeding insects such as aphids, whiteflies, and the mango leafhopper (*Amritodus atkinsoni*) have been connected to the diseases. Further spread of the fungus is encouraged by the honeydew ooze that might drip onto nearby leaves or plants. The fungi remain on different plant parts, equipment, or modes of transportation as mold or spores. The diseases are mostly found in mango, guava, sapota, citrus, papaya, pomegranate, banana, bean, bitter gourd, melon, okra, brinjal, tomato, chilli, coconut, black and green gram, peanut, soybean, maize, sorghum, and sugarcane

Sooty symptom on Citrus, Guava, Sapota and Coconut

How to Spot Sooty Mold Disease Symptoms

Primary Symptoms

The development of black, soot-like patches on the surfaces of leaves, stems, and fruits is the most noticeable symptom of sooty mold. These patches are simple to identify and if ignored, can spread over vast areas.

In general, insect-damaged plants are subject to sooty mold specially fruit crops. Some insects construct honeydew, a sticky, sugary fluid that attracts other insects, leading to where the mold thrives. As it feeds on the honeydew, the mold progressively covers the afflicted plant portion, turning it a variety of black hues.

As not pathogenic and non-parasitic fungal infection, sooty molds do not cause symptoms or colonize plant tissues.

Honey dew secretion by sap feeding insects

However, they can also affect the plant vigour by interfering with the photosynthesis and gas exchange activity in the atmosphere. The growth and survival of the plant may be impacted by severely diseased leaves that die and fall off.

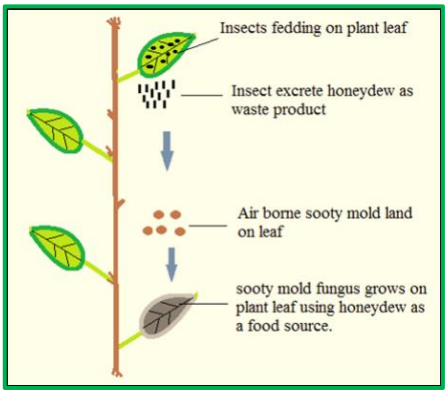
Honeydew secretion with sooty mold symptom on mango leaf fruit and branches

Secondary Symptoms

Due to compromised photosynthesis, afflicted plants may display secondary symptoms in addition to the obvious mold. These include diminished vigour overall leaf yellowing or chlorosis and stunted development. Honeydew can cause other problems includes drawing more pests or encouraging the growth of bacteria and other fungus.

Preventing Sooty Mold Disease

- **Biological Control**: Introducing natural predators like ladybugs, lacewings, and parasitic wasps can help keep pest populations in check.
- **Insecticidal Soaps and Oils**: Regular use of neem oil or insecticidal soaps can lower pest populations without endangering beneficial insects.
- **Regular Monitoring**: Regular plant inspections can assist in identifying and controlling infestations before they worsen.
- **Proper Watering**: To minimize leaf moisture and prevent overwatering, water plants at the base rather than above.
- **Pruning**: By improving air circulation and lowering humidity around plants, regular pruning of dense foliage reduces the spread of mold.
- **Sanitation**: To lessen the sources of fungal spores, remove and destroy any diseased plant detritus.
- Make sure there is enough sunshine and space between the trees or plants.
- To keep ants and other insects that feed on plant sap from getting to trees or plants, erect physical barriers around them.
- Make sure the trees receive enough water and fertilizer to give them the best defense against parasites that feed on phloem.



Treatment Methods for Sooty Mold Disease

- Physical removal is often the first step in treating sooty mold
- Washing off mold: Gently wash affected plant parts with a solution of water and mild soap. Use a soft cloth or sponge to avoid damaging the plant surfaces.
- Pruning: Cut away heavily infested leaves and branches to reduce the fungal load and improve air circulation. Dispose of pruned material properly to prevent further spread.
- Controlling sooty molds and insects simultaneously is essential. Use systemic pesticides like methyl demeton 25 EC to control insects. Add 1 kg of starch or maida to 5 liters of water to form a solution. Dilute this mixture to 20 liters after boiling. Mold and dried starch flakes will be removed with this method.
- Spraying the plant with fish oil resin soap or crude oil emulsion and starch (250g: 250g: 450 l water) will control the insect as well as remove the entire surface grown fungus mat, which will come off as flakes in due course.
- Dusting sulphur will also be helpful in the control of sooty mold.
- Spraying insecticide followed by spraying with fungicide viz., Bordeaux mixture 1% is also recommended
- Spraying of wettable sulphur methyl parathion + gum acacia (0.2% + 0.1% + 3%) at 15 days interval reduces the sooty mold incidence.