

Eggplant, Pepper, and Tomato

White Mold

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Identification and Life Cycle

White mold is caused by the fungus *Sclerotinia sclerotiorum* (or rarely *S. minor*), and can be an occasional problem on tomato and, less frequently, on pepper and eggplant. The disease cycle begins primarily from windblown spores (ascospores). Dormant fungal resting structures called sclerotia on the soil surface or buried 0.75 to 1 inch germinate during cool, moist weather and form small mushroom-like structures called apothecia. These apothecia eject ascospores that are carried by wind and irrigation water to tomato and other hosts. Ascospores must have an energy source to initiate infection, and often this energy source is fallen flower petals. After the fungus grows on the dead or dying tissue it invades healthy stems. Several days of cool (52 to 60°F) and continuously wet conditions are necessary for infection. Prebloom infection may occur if plants are damaged by frost or mechanically. The pathogen is readily disseminated by wind-blown spores, irrigation water, and in infested soil. *S. sclerotiorum* survives between tomato, pepper, and eggplant crops pathogenically on many other crops (dry bean, sunflower, melon, carrot, and potato among others), weeds, and as dormant sclerotia in the soil.

Plant Response and Damage

White mold symptoms are generally first noticed near flowering. Infection usually begins in leaf axils or in stem joints where flower petals have fallen, appearing as water-soaked areas. Stems are later invaded and become soft, watery, and eventually the infected tissue dies. Infected stems often turn a bleached, light gray. White cottony mycelium is often apparent on diseased stems. About seven to 10 days after infection, hard, black, irregularly-shaped sclerotia appear on diseased tissues. Sclerotia form in stems as well. The pathogen can also attack plants at the soil line. Large areas of the field may become diseased and die if soil infections occur. Fruit infections appear gray and quickly succumb to a watery rot. Sclerotia are visible in infected fruit.

White mold is more common on tomato than eggplant or pepper, but cool, wet conditions are essential for disease. The disease reduces both yield and fruit quality.

Management Approaches

Biological Control

Biological control agents (Contans) that attack sclerotia in the soil are commercially available and provide some disease control if applied as a prophylactic to the soil each year.

Cultural Control

Practice a 3-year or longer crop rotation between crops. Eliminate weeds in and around fields and rotation crops that can serve as alternate hosts for the white mold pathogen. Deeply bury crop debris soon after harvest to reduce pathogen overwintering and survival. Promote rapid leaf and soil surface drying by avoiding dense plantings, staking plants, and orientating rows parallel to the prevailing wind direction. Apply adequate but not excessive nitrogen fertilization to avoid dense canopies that favor white mold. Avoid overhead irrigation if possible, and time irrigations to prevent continuous soil wetness and prolonged periods of leaf wetness.

Chemical Control

Fungicide applications may be necessary to control white mold when weather conditions are favorable for disease, but chemical controls are most effective when combined with as many cultural control strategies as possible. Soil fumigation destroys white mold sclerotia, but probably is not economical or necessary in most tomato production regions in the High Plains.

Product List for White Mold:

Pesticide	Product per Acre	Remarks
Dichlone 50	1 lb/100 gal	Transplant dip

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