



Management and Sporulation of Tomato Leaf Mold

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DESCRIPTION

Cladosporium fulvum is an Ascomycete called *Passalora fulva*, a non-obligate pathogen that roots the disease on tomato known as the tomato leaf mold. *P. fulva* merely attacks tomato plants, especially the foliage, and it is a common disease in greenhouses, but can also occur in the field. The tomato leaf mold fungus is a definite pathogen of tomato plant *Lycopersicon*, this pathogen has restricted host range (host specific pathogen) that only infects tomatoes, mainly in greenhouses.

The symptoms of this disease commonly occur on foliage, and it progresses on both sides of the leaf on the adaxial and abaxial surface. The older leaves are infected first and then the disease changes up towards young leaves.

Symptoms of tomato leaf mold seem usually with foliage, but fruit infection is rare. The primary symptom appear on the upper surface of infected leaves as a small spot pale green or yellowish with undefined margins, and on corresponding area of the lower surface, the fungus begins to sporulate. The diagnostic symptom grows on lower surface as an olive green to grayish purple and velvety appearance, which is composed of spores (conidia). Continuously, the colour of the infected leaf changes to yellowish brown and the leaf activates to curl and dry. The leaves will drop upon reaching a premature stage, and the defoliation of the infected host will cause auxiliary infection. This disease develops well in relative humidity levels above 85%. When the temperature reaches optimum level for germinating, the host will be infected by the pathogen. Occasionally, this pathogen roots disease on the fruit or blossoms with various

symptoms. Fruits such as green and ripe one will grow dark rot on the stem. The blossoms will be killed before fruits mature. The life cycle twitches with the fungus overwintering as sclerotia on plants debris, in seeds and in soils as a saprophyte.

CONCLUSION

Conidia also play a key role as a survival structure, once they are resistant to drying, and might survive up to one year in the absence of a susceptible host. When conditions are encouraging the sclerotia yield new conidia, which act as primary inoculum to infect plants. The conidia produce mycelium that infects the plant over stomata when humidity is 85% or greater and produce conidiophores on the abaxial leaf surface of infected leaves. The symptoms usually start to appear 10 days subsequently inoculation with spore formation, a large number of conidia are formed and these spores are easily spread from plant to plant by the wind, splash water, on tools, clothing of workers and also by insects. Spores are highly dependent on weather condition to germinate, thus they only geminate in water films or when the humidity level are greater than 85%, at temperature among 40 °F and 94 °F (4° C and 34 °C). However the optimum temperature for germination is between 75° F and 78 °F (24 °C and 26 °C).

The pathogen is probable to grow in humid and cool conditions. In greenhouses, this disease causes big problems during the fall, in the early winter and spring, due to the high relative humidity of air and the temperature, that are propitious for the leaf mold advance.

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