



Hickory Downy Leaf Spot: *Microstroma juglandis*

Introduction

Downy leaf spot of hickory, also known as white mold or white leaf spot, is caused by the fungus, *Microstroma juglandis*. The fungus is capable of infecting several species of Walnut (*Juglans* spp.) and Hickory (*Carya* spp.). Host plants include butternut, bitternut hickory, mockernut hickory, pignut hickory, sand hickory, shagbark hickory, water hickory, pecan, Arizona walnut, black walnut, California black walnut, Hinds walnut, little walnut, and Persian walnut. Downy leaf spot occurs in all regions of the world where walnuts and hickories are grown.



Figure 1: Leaf surface symptoms of downy leaf spot on Hickory. (provided by Dawn Dailey O'Brien, Cornell University)

Symptoms and Signs

In the spring, as leaves expand to full size, infected trees will begin to show a light green, spotty discoloration on the surface of the leaves (Fig. 1).

These spots can vary in size and may coalesce to form large angular lesions. The undersurface of the leaves contain powdery, white, fuzzy spots (Fig. 2) that may be more concentrated near the leaf veins.



Figure 2: Underside of the leaf symptoms of downy leaf spot on Hickory. (provided by Dawn Dailey O'Brien, Cornell University)

Another symptom may be broom formation near the ends of the branches. The leaves found in these brooms are often smaller than others and have a yellowish appearance. The broom leaves often shrivel, wilt and drop beginning in early summer. Brooms can become quite large reaching up to 2 meters in diameter.

Disease Cycle

The disease cycle of *Microstroma juglandis* is not completely known. Some researchers believe that the fungus overwinters as stromata in fallen leaves.

Infectious spores are released from the remains of the fallen leaves in the spring to cause new infections.

Management Strategies

Fungicide applications are not recommended as the disease is considered economically insignificant. If a pleasing appearance of the trees is desired, pruning out the brooms from within the tree's canopy may help improve the appearance.

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READ THE LABEL BEFORE APPLYING ANY PESTICIDE! Changes in pesticide regulations occur constantly. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office.

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