Cornell CALS
College of Agriculture and Life Sciences

Plant Disease Diagnostic Clinic
Plant Pathology and Plant-Microbe Biology Section
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Apple Scab: *Venturia inaequalis*

Introduction

Apple scab occurs wherever apples are grown and may be a very serious disease in susceptible varieties. The disease can also infect crabapple and mountain ash. Scab diseases similar to apple scab occur on pear, firethorn, and hawthorn. The scablike leaf spots and fruit spots, from which the name was developed, may cause defoliation and reduction in fruit quantity and quality.

Symptoms and Signs

The disease may affect leaves, petioles, pedicels, fruit, and twigs. The symptomatic spots are most noticeable on leaves and fruit. Infections first appear as olive-green spots with indefinite borders. With age, these spots become more prominent and darken to greenish-black with a velvety appearance (Fig.1). Severe spotting will cause leaves to senesce and fall off. Spots on young fruit result in deformation and cracking (Fig. 2). If the infection is severe, the fruit may drop off before ripening.

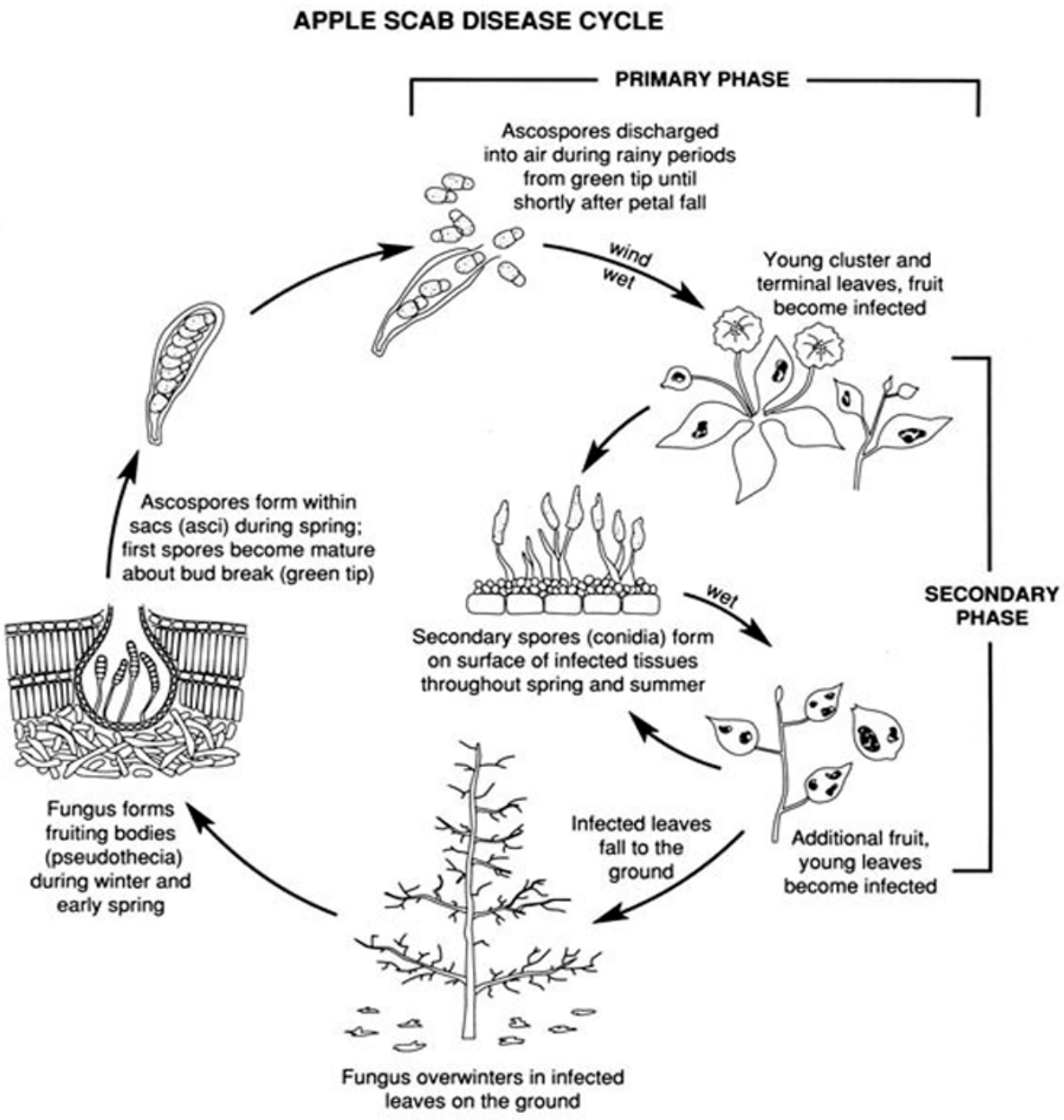
Figure 1: Scab symptoms on leaves. (provided by Dr. Wayne A. Sinclair, Cornell University)

Defoliation may result in a reduction of flower bud formation so that bloom or fruit yield the next year will be reduced.

Figure 2: Apple fruits showing scab symptoms. (provided by Dr. Wayne A. Sinclair, Cornell University).

Disease Cycle

This disease, caused by the fungus *Venturia inaequalis* (anamorph *Spilocaea pomi*), may be quite severe when rainy, cool weather occurs in the spring. Fungal spores are produced in early spring on dead, fallen apple leaves about the time buds begin to develop. These spores are splashed by rain and blown by wind to land on developing plant tissue and initiate infections. After spots appear on the newly formed leaves, more spores are produced that spread infection to other parts of the tree. Again, rainy weather greatly encourages spore spread and infection during the secondary phase of spore production. The fungus overwinters on fallen leaves.



Apple Scab disease cycle.

(provided by Dr. Wayne Wilcox, Cornell University, NYSAES, Geneva, NY)

Management Strategies

Collect and dispose of fallen leaves in autumn. This will help reduce the inoculum that may cause disease the following spring. A spray schedule with emphasis on the early part of the season is usually required for maximum production of high-quality fruit.

Applications should be made at pink, bloom, petal fall, and 10-14 days after petal fall. Several products are registered to treat apple scab in New York State. Some products containing chlorothalonil or propiconazole may be registered for managing this disease on ornamental plantings.

In the home orchard, some copper-based products are also labeled for suppression. Do not apply products containing copper after the "pink bud' stage. Some multipurpose spray mixtures may be available to help manage other pests, but

any product containing captan should not be applied with or near an oil spray early in the season as this may injure leaves. For a list of specific products, please see our most recent fruit fungicide table that can be found along with our list of fact sheets at: plantclinic.cornell.edu/factsheets.html.

Note that sulfur may injure certain apple varieties (MacIntosh, Golden Delicious, Jonathan, and others). Also, myclobutanil may not be registered for all uses on Long Island. Be certain any formulation(s) of pesticide(s) you purchase are registered for the intended use. Follow the label instructions for all pesticides used and avoid the use of insecticides during bloom so that bees are not harmed. For commercial applications, please refer to the appropriate commercial pest management guidelines, or contact your local Cooperative Extension Office for more information on currently registered products.

If plans are underway to plant more apple trees, consider planting cultivars that are resistant to apple scab. These include Crimson Crisp, Crimson Gold, Enterprise, Freedom, Goldrush, Jonafree, Liberty, Nova Spy, Pristine, Redfree, Scarlet O'Hara, Williams Pride, and Winecrisp. Many additional varieties have also shown resistance to scab but may be highly susceptible to other diseases or may require further evaluation to fully determine the degree of their resistance to scab.

References:

Cornell Cooperative Extension: Part I Pest Management Around the Home. (out of print)

Purdue Extension Fruit Diseases: Disease Susceptibility of Common Apple Cultivars: https://www.extension.purdue.edu/extmedia/BP/ BP-132-W.pdf

Penn State Extension: Apple Cultivars with Scab Resistance: https://extension.psu.edu/scabresistant-apple-cultivars.

Prepared by clinic staff; Updated by SLJ2 & LG658 November 2024

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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