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Scab of Apple

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Apple scab is one of the most serious diseases of apple. Disease development is favored by wet, cool weather that generally occurs in spring and early summer. Both leaves and fruit can be affected. Infected leaves may drop resulting in unsightly trees, with poor fruit production. This early defoliation may weaken trees and make them more susceptible to winter injury or other pests. Infected fruits are blemished and often severely deformed. Infected fruits may also drop early.

Symptoms

Symptoms first appear in the spring as spots (lesions) on the lower leaf surface, the side first exposed to fungal spores as buds open. At first, the lesions are usually small, velvety, olive green in color, and have unclear margins. On some crabapples, infections may be reddish in color. As they age, the infections become darker and more distinct



Figure 1. Apple scab lesions of apple leaves.

in outline. Lesions may appear more numerous closer to the mid-vein of the leaf. If heavily infected, the leaf becomes distorted and drops early in the summer. Trees of highly susceptible varieties may be severely defoliated by mid to late summer.

Fruit symptoms are similar to those found on leaves. The margins of the spots, however, are more distinct on the fruit. The lesions darken with age and become black and “scabby.” Scabs are unsightly, but are only skin deep. Badly scabbed fruit becomes deformed and may fall before reaching good size.

Causal Organism

Apple scab is caused by the fungus, *Venturia inaequalis*. It survives the winter in the previous year’s diseased leaves that have fallen under the tree. In the spring, the fungus in old diseased leaves produces millions of spores. These spores are released into the air during rain periods in April, May and June. They are then carried by the wind to young leaves, flower parts and fruits. Once in contact with susceptible tissue, the spore germinates in a film of water and the fungus penetrates into the plant. Depending upon weather conditions, symptoms (lesions) will show up in 9 to 17 days.

The fungus produces a different kind of spore in these newly developed lesions. These spores are carried and spread by splashing rain to other leaves and fruits where new infections occur. The disease may continue to develop and spread throughout the summer. Because a film of water on leaves and fruit is required for infection to occur, apple scab is most severe during years with frequent spring rains.



Figure 2. Apple scab lesions on fruit.

Control

1. The use of resistant or scab immune varieties is the ideal method for controlling scab. Currently there are several apple varieties that are totally resistant to scab. Backyard growers are strongly encouraged to consider using these resistant varieties in order to reduce or eliminate the need for fungicide applications around the home. Scab resistant apple varieties include: Crimson Crisp, Crimson Gold, Galarina, Scarlet, Sundance, Prima, Priscilla, Sir Prize, Freedom, Liberty, Jonafree, Enterprise, Goldrush, Redfree, Pristine, Williams Pride, Novamac and Nova Easygro. All other varieties, including most commercially grown varieties are susceptible to scab; however, they differ in their degree of susceptibility. McIntosh, Cortland, Red Delicious and Rome Beauty are all very susceptible to scab. Golden Delicious and Jonathan are less susceptible.
2. Rake and destroy fallen leaves. This will reduce the number of spores that can start the disease cycle the next year.

3. Where resistance to scab is not present, fungicide application is the primary method of control. For the most current fungicide recommendations and spray schedules, backyard growers are referred to Bulletin 780, *Controlling Diseases and Insects in Home Fruit Plantings*, and commercial apple growers are referred to Bulletin 506-A2, *Midwest Commercial Tree Fruit Spray Guide*. These publications can be obtained through your county Extension educator or the Extension Publications Office, The Ohio State University, 216 Kottman Hall, 2021 Coffey Road, Columbus, Ohio 43210-1044.

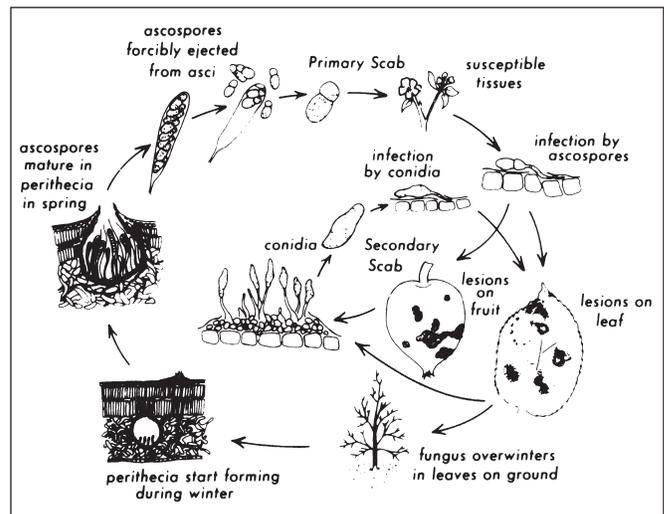


Figure 3. Apple scab disease cycle. We want to thank the New York State Agricultural Experiment Station for use of this figure. Taken from Tree Fruit IPM Disease Identification Sheet No. 1.

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