OC0348

Michigan State University Extension-Oakland County

Apple Scab on Crabapples

Scab is one of the more serious diseases of ornamental crabapples. Scab can also be a problem on mountain ash if weather conditions in early spring are optimum for the development of this disease. Very susceptible trees can become 90% defoliated by mid-summer. Defoliation of trees is not only unsightly, but it also reduces the vigor of the tree. This loss of vigor may make infected trees more susceptible to environmental stress and other pests that attack weakened trees. Finally, it has been shown that badly diseased trees often fail to blossom adequately in the following year.

Symptoms

The symptoms appear first on the young leaves in spring and early summer as olive green or brown spots with uneven feathery margins on either surface of the leaves. Heavy attacks of scab can affect entire leaves; leaves become brown and seem coated with a gray-green moldy covering. On older leaves, the diseased areas appear as definite spots, slightly raised, black in color and velvety in appearance. As the spots develop, the leaves may turn yellow and drop prematurely. The symptoms on the blossoms and fruits are similar to those on the leaves except that fruits may be deformed if heavily infected. Typical fruits lesions are distinct, almost circular, olive green spots that later become brown with black margins and a corky appearance.

Causal Organism

Scab is caused by a fungus, *Venturia inaequalis,* that overwinters in the infected fallen leaves. During the early spring, the fungus develops special structures that forcefully eject the spores during warm spring rains. These spores are carried to the young leaves by wind currents. If weather conditions remain favorable, the spores will germinate and infect the leaves or fruit. Spores can be discharged for a period of six weeks during the spring. At 70ºF, the optimum temperature, nine (9) hours of continuous wettings is necessary for spore germination and infection to occur. At 46ºF, twenty (20) hours of continuous

wetting is necessary for infection. This data confirms that warm, wet, and humid spring and early summer weather are very conducive to scab infections. Infected leaves and fruits also produce spores that can continue the infection process throughout the season if the weather is conducive.

Control Sanitation

Raking and burning infected fallen leaves will help to eliminate some of the inoculum. However, spores can blow in from other areas.

Plant Resistant Varieties

Many varieties of crabapple are resistant to apple scab and should be planted where possible. For example, many commonly grown crabapple cultivars in Michigan – 'Almey,' 'Hopa,' 'Eleyi' and 'Radiant' are severely susceptible to scab. Fairly resistant cultivars, such as 'Adams,' 'Bob White,' 'Dolgo,' 'Profusion,' 'Red Jewel' and *Malus Zoribunda, M. sargentii* and *M. x Zumi calocarpa* and a number of others are remarkably more attractive during scab outbreaks than are susceptible cultivars. Lists of scab resistant and scab susceptible cultvars are available from many sources. Michigan State University Extension publication E-2177 "Crabapples: a Selection Guide" (50 cents) contains helpful recommendations. Before purchasing a crabapple, find out about its scab susceptibility rating.

Chemical Control

Fungicide sprays will effectively control apple scab if they are applied at regular intervals and good coverage is obtained. Fungicides registered for this disease on apples of crabapples include captan, mancozeb (FORE), Daconil 2787, or Benomyl (Benlate) or other broad spectrum fungicides. New fungicides may also become labeled for controlling this disease. Always read the pesticide label and consult with knowledgeable sales representative. Follow the labeled instructions for use. A few well-timed applications limit scab disease and keep the leaves from falling. Make the first application just after bud growth in the spring. Most springs in Michigan are wet enough that the disease requires two or more applications at 14-day intervals. Very wet summers require additional sprays, but three applications usually provide satisfactory control. If scab must be totally prevented, make applications approximately every 10 days, beginnings as buds swell in spring.

Would you like additional information?

Additional information is available on-line. Please see MSU Extension-Oakland County's publications as well s MSU Extension's Bulletin Office on campus.

Contact our Plant & Pest Hotline (248/858-0902) for assistance with plant identification, pests and diseases, weeds, trees and shrubs, lawn, flowers, fruits, vegetables, grasses and groundcovers, native plants, plant propagation, and many other gardening topics.

MICHIGAN STATE UNIVERSITY EXTENSION

Distributed by MSU Extension-Oakland County, 1200 N. Telegraph Road, Pontiac, MI 48341, 248/858-0880, www.msue.msu.edu/oakland