Potomac Rose Society Information Bulletin
DEDICATED TO SERVE THOSE WHO ENJOY ROSES
District of Columbia and Potomac Area of Maryland and Virginia
Affiliated with the American Rose Society

POWDERY MILDEW

Powdery mildew is known in all countries in which roses are grown all over the world. The first account of the symptoms on a rose was around 300 BC although the actual causal pathogen wasn't described until 1819. Powdery mildew is very host specific. That means, for example, that even though the symptoms are similar, the pathogen that causes powdery mildew on lilac, ***Microsphaera penicillata***, is not the same as the one that appears on roses, ***Sphaerotheca pannosa***.

The symptoms of powdery mildew include:

Slightly raised, blister like areas on the upper leaf surface at the top and outer branches of the bush.

"Fuzzy" patches on the surfaces of young leaves, stems, and on unopened buds begin to appear.

Curled and distorted expanding leaves.

The aesthetic quality of the bush and blooms can become greatly compromised. The more mature leaves on the lower portions of the bush are not usually infected. Blackspot, the other common fungal disease of our area, is more commonly seen in the lower portion of the bush where air circulation is limited and moisture collects on leaf surfaces.

The conditions that favor the onset of powdery mildew are:

Warm dry days with low humidity ***(79-82° F with a relative humidity of 40-79%)***.

Cool evenings with higher humidity ***(59-68° F with a relative humidity of 90-99%)***.

The disease can appear quite suddenly and increase dramatically over a very short period of time. During the warm, dry mid-day hours, spores detach themselves from an infected leaf and spread on currents of air to new points of infection on young leaves. As the evening hours come on and the temperatures lower, these spores absorb enough moisture from the air to germinate. Germination can begin 2-4 hours after the spore is deposited on the leaf. A fine penetration tube pierces into the leaf cuticle and epidural cells, absorbing nutrients, impairing cell functions, and generally weakening the plant. As the disease progresses, white mycelium patches containing new spores appear on the infected leaf surface, ready for the next breeze to carry them on and begin the disease cycle all over again.

Unlike blackspot where a film of moisture on the leaf surface is necessary for germination, wet weather actually inhibits development of powdery mildew. High humidity provides all the moisture needed for germination.

As the season progresses and the weather continues to cool, spores capable of surviving the winter months appear as dark, spherical bodies (like coarse black pepper). These can be seen easily with the eye on the white mildew patches. Spores can also overwinter in bark crevices, unopened buds, and fallen leaves.

Just as with blackspot, recognition of potentially favorable conditions and prevention is key to controlling powdery mildew. There are three possible actions:

#1: Select resistant varieties
#2: Use common sense cultural practices
#3: Spray with systemic fungicides

Whenever possible, select resistant varieties. Some new rose varieties show high level of resistance but this resistance may not be stable. A rose may be resistant in one geographical area but susceptible in another due to the many different races of the powdery mildew pathogen in different parts of the country.

Keep your beds free of dead leaves or infected canes. Controlling potential fungal disease problems is one of the key reasons why I prune my bushes severely every spring and make sure infected plant material goes into the garbage can rather than my compost pile located near the rose bed.

This information bulletin is based on an article by Jo Ann Crystal for *The Newsletter of THE POTOMAC ROSE SOCIETY.* If you have questions on this or any other aspect of rose growing, please contact one of our consulting rosarians for free advice. For information regarding membership, contact Joseph M. Covey, (301) 279-0028.