

## Powdery Mildew of Roses

### Symptoms

As the name of this disease implies, what is very descriptive of this disease is that whitish patches appear on infected leaves (Figure 1). These whitish patches on the leaf surface are actually the fungal mycelia that are colonizing and expanding through leaf tissue and producing conidia (asexual spores). Observed microscopically or with a strong magnifying lens, mycelia appear as threadlike and branching and are composed of masses of hyphae, the vegetative growth of the fungus. Younger leaves will not only exhibit powdery growth but may also be distorted in appearance.

However, prior to the powdery growth on leaves, early symptoms could be observed as raised and sometimes reddish areas on the surface of the upper leaves.



Figure 1. Powdery mildew on a rose leaf. Note the heavy white mycelial growth on the upper (adaxial) surface of the leaf.

### Causal Agent

The fungus *Podosphaera pannosa* (previously referred to as *Sphaerotheca pannosa*) causes powdery mildew on roses.

This fungus can also be found on almonds, apricots, and peaches. Fungal populations from one host may or not be equally as aggressive on other hosts.

### Inoculum Source and Conditions

Infections are initiated from overwintering mycelium, conidia, or ascospores on fallen leaves, from infected tissue such as buds and canes, or can be windblown as conidia or ascospores from other locations. At temperatures around 68°F (20°C) and a relative humidity close to 100%, it only takes conidia 2-4 hours to germinate once they land on a leaf surface and fungal penetration could take place within six hours. Within a day, tissue colonization takes place.

It is possible for the fungus to overwinter as ascocarps (the fruiting body of the fungus), but that is usually not the norm.

### Disease Management/Control

- Use of resistant varieties can potentially halt disease development and secondary inoculum production. However resistance may be lost to new races.
- Place plants in locations with more sun than shade.
- Do not over-fertilize.
- Lowering night humidity (ie. with fans, heaters).
- Fungicides can be used as protectants (preventive applications), eradicants (curative applications), or combination of (ie. myclobutanil).
- If less toxic curative fungicidal approaches are sought, horticultural oils (stylet, neem, jojoba) may be used. Some may be listed as organic (OMRI).
- If less toxic preventive fungicidal approaches are sought, bicarbonates (ie. potassium bicarbonate), biological fungicides (ie. *Bacillus subtilis*), and wettable sulfurs are options available for organic production.

Prepared by Dr. Ronald D. French<sup>1</sup> ([rdfrench@ag.tamu.edu](mailto:rdfrench@ag.tamu.edu))

<sup>1</sup>Assistant Professor and Extension Plant Pathologist (Amarillo, TX)  
Texas AgriLife Extension Service; The Texas A&M System February 22, 2010  
<http://sickcrops.tamu.edu>