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Disease Alert: Daylily Rust

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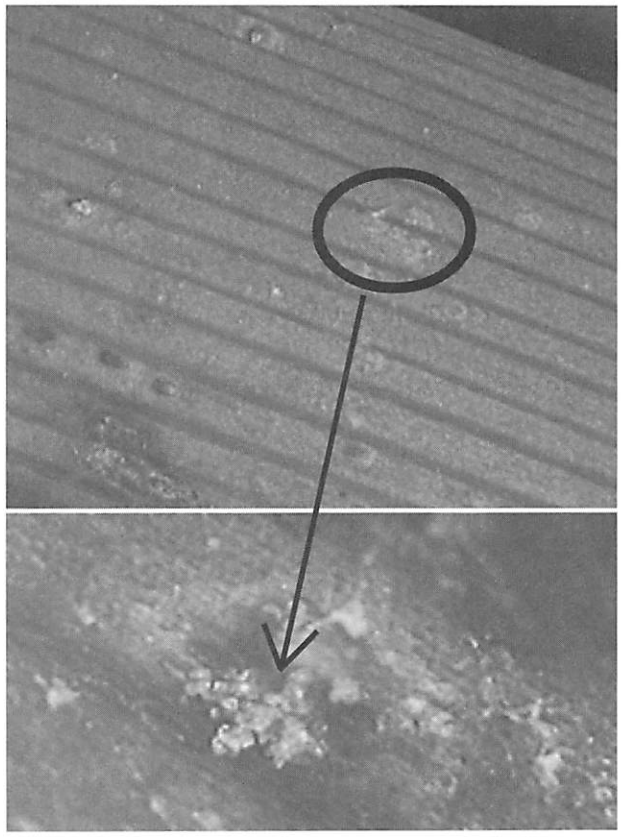
Daylily rust had never been described on daylilies in the United States until August 2000, when this disease was first described in Georgia. At that time, the disease was also known to occur in Florida, Alabama, and South Carolina. As of June 2001, daylily rust had been reported in California, Minnesota, Texas, and Tennessee. And the inevitable finally happened in North Carolina the third week of July 2001, with the first confirmed case of daylily rust being reported. The infected daylilies, as was true for many of the other states, originated from Florida. Two additional cases in North Carolina have since been confirmed.

The rust pathogen is native to Asia and thought to have been introduced in to the United States by way of daylilies coming from Central America via Florida. It is anticipated that the spread of daylily rust throughout the United States will occur within a very short time frame. As a result, federal and state pathologists have concluded that it will be impossible to contain this fungus by regulatory means.

Another disease of daylily, daylily leaf streak, has been especially prevalent in North Carolina this season. Symptoms of these two diseases are somewhat similar to the naked eye. Therefore, any suspicious material should be submitted to the Plant Disease and Insect Clinic via your county extension agent for positive identification. Daylily rust produces spores within bright orange pustules (typical of a rust disease) on both the upper and lower leaf surfaces. The spores are spread by wind to a susceptible daylily. Within 3-5 days after exposure, light yellow, water-soaked



A closeup view of daylily rust with its bright orange pustules (typical of a rust disease) on both the upper and lower leaf surfaces (photo NCSU Plant Disease Clinic).

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spots develop on the upper leaf surface where infection occurred. It takes another 7-14 days for pustules to develop on the newly infected leaf, at which time the cycle is repeated. If the leaf is held perpendicular to your site of vision, the pustules are raised above the leaf surface. In the case of daylily leaf streak, small oblong lesions form on the leaves and expand along the blade, but the lesions will appear flat. Symptoms can vary based on the variety of daylily.

The current recommendation for control is referred to as the "Florida Method," as outlined by the Florida Department of Agriculture and Consumer Services Division of Plant Industry:

1. Carefully remove and destroy infected foliage from plants on which rust is detected and on all plants in that block or bed.
2. Alternately apply two of the following four fungicides at the label rate and interval to protect new foliage as it emerges: a) propaconizole (Banner Maxx), b) azoxystrobin (Heritage), c) flutolonil (Contrast), d) myclobutanil (Systhane).

If possible, limit overhead irrigation as this favors both daylily rust and leaf streak. Avoid working in or walking through the plants while the leaves are wet.

Inspect all new plant material that you receive for symptoms of rust, upon arrival. Be especially careful when accepting material from Florida. The rust pathogen is highly aggressive and can spread quickly (a pathologist in Georgia reports that she set an infected plant on her driveway for just a short time and it ended up infecting the daylilies on the other side of her yard). Needless to say, it has the potential to quickly spread throughout a nursery under favorable conditions (infection requires leaf wetness).

For more information and to view pictures of daylily rust, go to:
http://doacs.state.fl.us/~pi/enpp/pathology/daylily-rust.html (this site also has a link to daylily streak information and photos)
http://www.ces.uga.edu/Agriculture/plantpath/daylilyrust.html