Orange Rust: *Gymnoconia* sp. and *Arthuriomyces* sp.

**Introduction**

Orange rust is a disease of black berry and black raspberry. Purple raspberry may also become infected, but red raspberry is resistant. This rust occurs in two different forms with very similar symptoms. One form has a long cycle and affects mainly black raspberry, and the other has a short cycle and affects mainly blackberry. *Gymnoconia peckiana* was the name originally given to the fungus that causes orange rust, but some morphological differences were eventually identified between the two forms, and now separate scientific names have been assigned to them. The form on black raspberry is caused by a fungus known as *Arthuriomyces peckianus*, while the form more common on blackberry is known as *Gymnoconia nitens*. Orange rust is one of the more serious diseases of susceptible brambles in the Northeast. It should not be confused with the late leaf rust disease of red raspberries.

![Figure 1: Symptoms on upper leaf surface of black raspberry (provided by S. Jensen, Cornell University)](image1)

![Figure 2: Sporulation on lower leaf surface of black raspberry (June in New York) (provided by S. Jensen, Cornell University)](image2)

**Symptoms and Signs**

Lower leaf surfaces become covered with blister-like masses of yellow-orange spores by late May or early June. These spores serve to spread the disease to other...
plants. In addition, heavily infected leaves may die, and infected shoots will be weak, spindly and have very few, if any thorns.

Disease Cycle

Orange rust is autoecious, meaning that it lacks an alternate host and completes all of it’s life stages on one host, in this case Rubus spp. Orange rust invades the entire plant reducing blossoming and fruit set. Although orange rust does not kill plants, it is systemic in the plant and heavily infected plants are of no value. They will not recover and unless destroyed, will persist as a source of inoculum that may spread the disease to additional plants.

Management Strategies

To control orange rust begin by planting only healthy black raspberry and blackberry stock. Eradicate infected wild blackberries and black raspberries near your raspberry patch. As the rust becomes systemic in the host, remove and destroy infected plants as soon as they appear in the spring. Thin healthy canes and keep weeds down to promote good air circulation which helps prevent spore germination and infection. There are no effective fungicides for control of orange rust at this time.

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