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Knock Out Rose: Undifferentiated Growth on Stem

A Knock Out rose from the previous year's crop was observed to have a large woody mass near the base of the stem. This symptom was likely the result of an infection caused by agrobacterium. Growers should inspect plants being held over from previous years to ensure that the bacteria are not spread throughout the crop.

While out on an extension visit, we were walking through a field of pot grown Knock Out roses that had been held over from the previous year's crop. The plants looked healthy, but one plant was found to have a large mass of growth near the base of the stem (Fig. 1). Upon closer inspection, a second smaller mass was found slightly further up on the stem (Fig. 2). Aside from the galls, there were no other symptoms, and the plant appeared normal and healthy. The symptomatic cultivar was called 'Blaze', and had dark pink flowers. Several roses in the area were observed though there was only one plant with this type of symptom.

This hard and woody growth, or gall appears to have been caused by a species of agrobacterium. One potential species that is known to cause similar crown galls on roses is *Agrobacterium tumefaciens*. The only way to be sure of the culprit is to have the plant diagnosed by a plant disease clinic, such as the Oregon

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Figure 1. Growth mass at the base of a grafted rose plant. Photo copyright by Josh Henry.

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State University Plant Disease Clinic. This clinic, run by Melodie Putnam, specializes in diagnosing galls caused by agrobacterium and a similar bacterium, rhodococcus. More about this clinic may be accessed in the link to their website below.

Previous e-GRO Alerts (#3-24, #4-37) outline leafy gall symptoms likely caused by rhodococcus on geraniums, wallflower, and coreopsis. Alert #3-24 contains useful information on sanitation practices that may also be used to control agrobacterium.

It is important to note that the bacterium is easily spread on propagation tools and during pruning. Once a plant is infected, the bacterium may survive in the plant for long periods of time before galls appear. There is no control for the disease once a plant is infected. The reason for this is that the bacteria are found within the plant cells, and pesticides applied to the plant surface will not eradicate the problem (Oregon State University Plant Disease Clinic).



Figure 2. Gall at the graft base of a rose plant. Note the second gall forming on the stem.

Photo copyright by Josh Henry

If you have infected plants, they should be immediately discarded. If infected plants are not discarded, one risks the chance of spreading the bacteria to healthy plants during propagation and other plant maintenance activities. As infected plants may not have readily visible galls, it is important that hands and sanitation tools should be disinfected between each plant.

Photographs of crown gall symptoms on roses are provided in this Alert (Fig. 3), and should be used to help growers recognize this disease in future crops. The best way to ensure next year's crop is healthy is to start with clean stock. Growers are encouraged to inspect plants being held for stock now to help eliminate this disease from your production areas.



Figure 3. Close up of the gall at the base of the rose plant. Photo copyright by Brian Whipker

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Additional Resources:

e-GRO Alert 3.24 by Nora Catlin provides extensive details about leafy galls and control measures.

Read More: Leafy Gall (*Rhodococcus fascians*) on Geranium, Wallflower, and Coreopsis

e-GRO Alert 4.37 by Brian Whipker provides additional details about leafy galls on scented geraniums.

Read More: Scented Geraniums: Proliferation of Basal Growth

***Oregon State University
Plant Disease Clinic
Website (a resource
center of information
about *Rhodococcus* and
Agrobacterium).***

***[http://plant-clinic.
bpp.oregonstate.edu/
rhodococcus](http://plant-clinic.bpp.oregonstate.edu/rhodococcus)***
