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Shasta Daisy: Undifferentiated Basal Growth

A few scattered Shasta or margarita daisy (Leucanthemum x superbum) were observed to have a large growth mass near the stem base. This symptom was likely the result of a rhodococcus infection. Growers should inspect Shasta daisy plants and rogue out infected ones to prevent further spread.

When viewing a growing block of Shasta daisies at a perennial greenhouse, some of the plants did not have robust leaf growth (Fig. 1). Upon further inspection of those plants, one could observe a large mass of growth near the base of the stem (Figs. 2-4).

This mass of growth, or gall, appears to have been caused by a rhodococcus infection. The only way to have a positive identification is to have the plant diagnosed by a plant disease clinic, such as the Oregon State University Plant



Figure 1. The lack of robust leaf growth of Shasta daisy was a cause of concern and required further investigation of the cause. (Photo: Brian Whipker)

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

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 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).

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If you have infected plants, they should be 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. For example, scented geraniums commonly harbor rhodococcus without symptoms. A few years ago, the recommendation to a grower was to discard his scented geranium stock plants and replace them with new stock from a specialized propagator. Ironically it turned out that the following year the replacement plants had more severe infections.

In prior years, Shasta daisy plants with similar symptoms have been submitted to the NC State University Plant Disease and Insect Clinic. Shasta daisies should be considered as a possible host and sanitation practices should be used after plant maintenance activities. Photographs of crown gall symptoms on Shasta daisy are provided in this Alert. This will assist growers to recognize this disease.

Previous e-GRO Alerts (#3.24, #4.37, and #5.37) outline leafy gall symptoms likely caused by rhodococcus on geraniums, wallflower, and coreopsis. An infection of a rose plant was highlighted in #5.37. Alert #3.24 contains useful information on sanitation practices that may also be used to control agrobacterium.

Additional Resources:

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

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

e-GRO Alert 5.37 by Josh Henry and Brian Whipker provides a photographic guide of symptoms on roses.

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

<http://plant-clinic.bpp.oregonstate.edu/rhodococcus>



Figure 2. Stunting and basal growth can be seen with this Shasta daisy plant. (Photo: Brian Whipker)



Figure 3. Basal growth on Shasta daisy. (Photo: Brian Whipker)



Figure 4. A close-up of the mass of basal growth on a Shasta daisy. (Photo: Brian Whipker)

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