



Brian E. Whipker¹



Patrick Veazie¹

Volume 12 Number 6 February 2023

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).

www.e-gro.org

¹NC State University, Dept. of Hort. Science
bwhipker@ncsu.edu

2023 Sponsors



American Floral Endowment

Research Internships Scholarships Education

Funding the Future of Floriculture

Bali

fine



P.L. LIGHT SYSTEMS
THE LIGHTING KNOWLEDGE COMPANY

Reprint with permission from the author(s) of this e-GRO Alert.

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)

e-GRO Alert

www.e-gro.org

CONTRIBUTORS

Dr. Nora Catlin
Floriculture Specialist
Cornell Cooperative Extension
Suffolk County
nora_catlin@cornell.edu

Dr. Chris Currey
Assistant Professor of Floriculture
Iowa State University
ccurrey@iastate.edu

Dr. Ryan Dickson
Greenhouse Horticulture and
Controlled-Environment Agriculture
University of Arkansas
ryand@uark.edu

Thomas Ford
Commercial Horticulture Educator
Penn State Extension
tf7@psu.edu

Dan Gilrein
Entomology Specialist
Cornell Cooperative Extension
Suffolk County
dgg1@cornell.edu

Dr. Chieri Kubota
Controlled Environments Agriculture
The Ohio State University
kubota_10@osu.edu

Heidi Lindberg
Floriculture Extension Educator
Michigan State University
wolleage@anr.msu.edu

Dr. Roberto Lopez
Floriculture Extension & Research
Michigan State University
rlopez@msu.edu

Dr. Neil Mattson
Greenhouse Research & Extension
Cornell University
neil.mattson@cornell.edu

Dr. W. Garrett Owen
Sustainable Greenhouse & Nursery
Systems Extension & Research
The Ohio State University
owen.367@osu.edu

Dr. Rosa E. Raudales
Greenhouse Extension Specialist
University of Connecticut
rosa.raudales@uconn.edu

Dr. Alicia Rihn
Agricultural & Resource Economics
University of Tennessee-Knoxville
arihn@utk.edu

Dr. Debalina Saha
Horticulture Weed Science
Michigan State University
sahadeb2@msu.edu

Dr. Beth Scheckelhoff
Extension Educator - Greenhouse Systems
The Ohio State University
scheckelhoff.11@osu.edu

Dr. Ariana Torres-Bravo
Horticulture/ Ag. Economics
Purdue University
torres2@purdue.edu

Dr. Brian Whipker
Floriculture Extension & Research
NC State University
bwhipker@ncsu.edu

Dr. Jean Williams-Woodward
Ornamental Extension Plant Pathologist
University of Georgia
jwoodwar@uga.edu

Copyright © 2023

Where trade names, proprietary products, or specific equipment are listed, no discrimination is intended and no endorsement, guarantee or warranty is implied by the authors, universities or associations.

Cooperating Universities



**Cornell Cooperative Extension
Suffolk County**



PennState Extension

IOWA STATE UNIVERSITY



UCONN



**College of Agricultural &
Environmental Sciences
UNIVERSITY OF GEORGIA**

**MICHIGAN STATE
UNIVERSITY**



**P PURDUE
UNIVERSITY®**



**THE OHIO STATE
UNIVERSITY**

**NC STATE
UNIVERSITY**

In cooperation with our local and state greenhouse organizations



Metro Detroit Flower Growers Association

