



Rosa E. Raudales
rosa@uconn.edu



Leanne Pundt
Leanne.pundt@uconn.edu



Yonghao Li
Yonghao.li@ct.gov

Volume 11 Number 19 March 2022

Bacterial Blight on Geraniums, again.

Bacterial blight on geraniums (Figure 1), caused by *Xanthomonas hortorum* pv. *pelargonii*, is back this growing season. In this Alert we will discuss the symptoms of the disease and management options.



Leanne Pundt, UConn Extension

Figure 1. Bacterial blight on geraniums.

Last spring, I gave a presentation on common diseases in the greenhouse and I said “Bacterial Blight on Geraniums caused by *X. hortorum* pv. *pelargonii* was a prevalent problem, but not anymore”. However, this year things have changed and we have observed the disease in multiple locations across the northeastern U.S. Therefore, we will review important facts about this disease to help growers identify symptoms and prevent spreading the disease if it enters into the greenhouse.

2022 Sponsors



Funding Generations of Progress
Through Research and Scholarships



P.L. LIGHT SYSTEMS
THE LIGHTING KNOWLEDGE COMPANY

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



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

This work was supported, in part, by the USDA National Institute of Food and Agriculture, CCPM project number 2021-70006-35582. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author and do not necessarily reflect the view of the U.S. Department of Agriculture

www.e-gro.org



Host Range:

The “good thing” about this pathogen is that it “only” infects geraniums—unlike other bacteria, like *Xanthomonas campestris*, which infects a broad range of crops.

Bacterial blight can infect zonal geraniums (*Pelargonium x hortorum*), ivy geraniums (*Pelargonium peltatum*), Regal or Martha Washington geraniums (*Pelargonium domesticum*), and cranesbill geranium (*Geranium sanguineum*).

Symptoms:

The symptoms of the disease include:

- Small, water-soaked spots on the underside of the leaves, followed by wilting and death of the affected leaf (Figure 2).
- Yellow to tan v-shaped lesions wedged between the veins of the leaves (Figure 1,3).
- The petiole might remain turgid, while the leaves wilt down (Figure 4). Some describe this symptom as “umbrella-like appearance.” The affected leaves may drop off immediately or may hang onto the plant for a week or more.
- Ivy and scented geraniums do not display the distinctive symptoms described above, so keep them separate and test any incoming lots.



Figure 2. Wilting and death of leaves infected with *Xanthomonas hortorum* pv. *pelargonii*



Figure 3. Angular lesions in the leaves, cells die within the leaf veins when geraniums are infected with *Xanthomonas*.



Figure 4. Angular or v-shape lesion on mature geranium plants.

Disease Spread & Favorable Conditions:

The disease can come into the greenhouse from infected cuttings or plants. It can then spread from plant to plant with tools (e.g. knives) or via water splashing or sub-irrigation.

Warm temperatures favor bacterial foliar diseases—such as *Xanthomonas* spp. As temperatures rise the symptoms are visible faster.

Control:

The main strategy for control is to catch the disease early and prevent it from becoming a prevalent problem in your operation. Specific strategies include:

- Inspect all incoming cuttings, seedlings, or plants.
- Separate the incoming plants from established, disease-free plants for 7-10 days. Incoming plants may be infected without visible symptoms.
- Group plants by species, cultivars, planting date, suppliers, etc. If you observe problems in one lot, you can quickly isolate the problem.
- Scout frequently. Discard any symptomatic plants and the surrounding containers distanced about 3ft from infected plants.
- Prevent water or substrate splashing.
- If you suspect infection, test incoming plants using an ImmunoStrip® for *Xanthomonas* (<https://orders.agdia.com/agdia-immunostrip-for-xan-isk-14600>) or send infected material to a plant diagnostic clinic near you to confirm the cause of the disease.
- Disinfect all surfaces that were in contact with infected plant material or substrates.

Finally, stay in contact with your suppliers and local diagnostician or extension agent. They will be able to provide you accumulated information obtained from several operations in the region.

Additional Resources:

- Nameth, ST, ML Daughtey, GW Moorman, MA Sulzinsk (1999) Bacterial Blight of Geranium: A History of Diagnostic Challenges <https://apsjournals.apsnet.org/doi/pdf/10.1094/PDIS.1999.83.3.204>
- New England Floriculture Guide <https://greenhouseguide.cahnر.uconn.edu/>
- UConn Greenhouse IPM <https://ipm.cahnر.uconn.edu/greenhouse/>
- *Xanthomonas*, Bacterial Blight on Geranium video by Rick Yates, Griffin Virtual Expo <https://www.youtube.com/watch?v=O31Wa0-FxuQ>

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
tfz@psu.edu

Dan Gilrein
Entomology Specialist
Cornell Cooperative Extension
Suffolk County
dog1@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
rglopez@msu.edu

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

Dr. W. Garrett Owen
Greenhouse Extension & Research
University of Kentucky
wgowen@uky.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 ©2022

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 CALS
College of Agriculture and Life Sciences

**Cornell Cooperative Extension
Suffolk County**

IOWA STATE UNIVERSITY

**University of
Kentucky**



PennState Extension

**UTIA INSTITUTE OF
AGRICULTURE**
THE UNIVERSITY OF TENNESSEE

UCONN

**MICHIGAN STATE
UNIVERSITY**



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

**PURDUE
UNIVERSITY**

**NC STATE
UNIVERSITY**



**THE OHIO STATE
UNIVERSITY**

**UofA DIVISION OF AGRICULTURE
RESEARCH & EXTENSION**
University of Arkansas System

In cooperation with our local and state greenhouse organizations

MAUMEE VALLEY GROWERS
Choose the Very Best.



Metro Detroit Flower Growers Association



**Indiana
FLOWER
GROWERS
Association**

