



by Brian E. Whipker¹
(bwhipker@ncsu.edu)

Ranunculus: Necrotic Leaf Spots and Mottling

An infection by the impatiens necrotic spot virus (INSV) of ranunculus resulted in necrotic leaf spots and mottling and is discussed in this article.



Plant Symptoms

On a recent greenhouse visit, ranunculus plants with dark necrotic spots (Fig. 1), distorted growth (Fig. 2), petiole discoloration (Fig. 3), and scattered leaf mottling (Fig. 4) were observed. Thrips were present on some of the ranunculus plants in the greenhouse, but at low levels (Fig. 5).

Impatiens necrotic spot virus (INSV) was confirmed with an enzyme-linked immunosorbent assay (ELISA) test by Mike Munster of the NC State University Plant



Figure 1. Necrotic spotting on ranunculus caused by INSV.

¹ Department of Horticultural Science, NC State University

e-GRO Alert

www.e-gro.org

CONTRIBUTORS

Dr. Nora Catlin
Floriculture Specialist
Cornell Cooperative Extension -
Suffolk County
nora.catlin@cornell.edu

Dr. Kristin Getter
Floriculture Outreach Specialist
Michigan State University
getterk@msu.edu

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

Dr. Brian Krug
Floriculture Ext. Specialist
Univ. New Hampshire
brian.krug@unh.edu

Dr. Joyce Latimer
Floriculture Extension & Research
Virginia Tech
jlatime@vt.edu

Dr. Roberto Lopez
Floriculture Extension Specialist &
Research
Purdue University
rglopez@purdue.edu

Dr. Paul Thomas
Floriculture Extension & Research
University of Georgia
pathomas@uga.edu

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

Copyright © 2014

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.

Disease and Insect Clinic (<http://www.cals.ncsu.edu/plantpath/extension/clinic/>).

If you suspect a virus problem, have the plants tested by a diagnostic clinic. You can also conduct in-house testing with ELISA kits from Agdia (<http://www.agdia.com/>).

Interesting to note that the grower stated that INSV sometimes flares up in the greenhouse. One cyclamen plant was also found to have leaf spots (Fig. 6). Although we did not test this plant for INSV, the symptoms were typical for that disease on cyclamen. The cyclamen crop very likely was the source

of the virus and with thrips always being a challenge to control, they vectored the spread to the ranunculus. Therefore, if INSV becomes a problem in your greenhouse, remember to rogue out suspected plants to help avoid continual infestations.

Management

Once a plant has INSV, it cannot be cured. So discarding infected plants is the only option. Note some plants may be asymptomatic but still have INSV. Thus with the primary method of spreading INSV is by Western Flower thrips (*Frankliniella occidentalis*) feeding, it is critical to keep them under control.

Additional INSV Information

<http://www.ces.ncsu.edu/depts/ent/notes/O&T/production/note120.html>

<http://www.ces.ncsu.edu/depts/ent/notes/O&T/flowers/ort072e/ort072e.htm>

<http://ncsupdicblog.blogspot.com/2012/01/sample-of-week-insv-on-cyclamen.html>

Cooperating Universities



Cornell University
Cooperative Extension
of Suffolk County



THE UNIVERSITY OF GEORGIA
**COOPERATIVE
EXTENSION**

College of Agricultural and Environmental Sciences
College of Family and Consumer Sciences

NC STATE UNIVERSITY
Floriculture



VirginiaTech
Invent the Future



UNIVERSITY
of NEW HAMPSHIRE
Cooperative Extension

**In cooperation with our
local and state greenhouse
organizations**



© Brian Whipker

Figure 2. Distorted growth on ranunculus caused by INSV.



© Brian Whipker

Figure 3. Petiole necrosis on ranunculus caused by INSV.



Figure 4. Mottled leaves on ranunculus caused by INSV.



Figure 5. Thrips feeding on ranunculus.



Figure 6. Necrotic leaf spots on a single cyclamen plant in the greenhouse. Although we did not test the plant for INSV, symptoms are typical for what is observed with an INSV infection of cyclamen.

To subscribe to e-GRO Alert, go to:

www.e-gro.org

and click on the subscribe button