



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

Calla Lily: Mottling and Necrotic Spotting

An infection by the tomato spotted wilt virus (TSWV) of calla lily resulted in mottling of the flower and leaves, along with necrotic leaf spots.



Everyone who grows calla lilies (*Zantedeschia spp.*) is familiar with the primary disease bacterial soft rot (*Erwinia carotovora*). Shoots start to wilt, rot at the base (Fig. 4), and have the characteristic fish smell.

A number of viruses are also reported on calla lilies. The two primary ones common in greenhouse forcing are impatiens necrotic spot virus (INSV) and tomato spotted wilt virus (TSWV). Dasheen mosaic virus has also been reported.



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¹ Department of Horticultural
Science, NC State University

Figure 1. Mottled spotting on calla lily caused by TSWV.

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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

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Plant Symptoms

Calla lilies are one of my favorite plants, so any time I visit a greenhouse with a crop, I will scout for disorders. On a recent trip noticed a single plant with a mottled pattern on the inflorescence (spathe) (Fig. 1). A few leaves also had yellow ringspots (Fig. 2), while a slightly older leaf had small necrotic spots (Fig. 3).

Tomato spotted wilt virus (TSWV) was confirmed with an enzyme-linked immunosorbent assay (ELISA) test by Mike Munster of the NC State University Plant Disease and Insect Clinic (<http://www.cals.ncsu.edu/plantpath/extension/clinic/>). The INSV test was negative.

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/>).

Management

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

Note: while calla lilies can have virus infections, the frequency in greenhouse production is low.

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>

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Figure 2. Ringspots on younger leaves of calla lily denoting TSWV.



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Figure 3. Advanced necrotic spotting caused by a TSWV infection of calla lily. These spots were on older leaves than the ringspot symptoms.



Figure 4. Wilt and rot associated with bacterial soft rot infection of calla lilies.

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