



Brian E. Whipker¹



Patrick Veazie¹

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It's Obviously an Iron Problem, But Why?

Interveinal chlorosis of the new leaves usually means iron problems. A few scattered rosemary plants had symptoms and they had one thing in common. They were under a dripping irrigation nozzle that kept the substrate overly saturated and may have limited the plant from obtaining iron. In addition, lime had been added to the top of the pot and the dripping water helped make it more available to increase the substrate pH.



Figure 1. Close-up of a rosemary plant with interveinal chlorosis of the young leaves (Photo: Brian Whipker)

On a recent extension trip, we were able to scout an impressive crop of rosemary plants being grown in the shape of Christmas trees. Three plants out of 20,000 isn't much. Those 3 plants all had interveinal chlorosis of the new leaves (Fig. 1-4). These are typical iron (Fe) deficiency symptoms.

All three plants also had in common that they were the only ones exhibiting symptoms and they were being grown under a dripping irrigation nozzle. All of the surrounding plants were normal green (Fig. 5). This was a case of excessive moisture limiting Fe uptake by the plant. In addition, a dose of limestone had been added to the top of the

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

pot. It appears the extra moisture helped make more of the limestone available to modify the substrate pH. A pourthru test found the pH to be elevated at 6.6. Similar symptoms can also develop in the case of another physiological disorder caused by cold growing conditions, abiotic factors such as root rot, and the less common Fe deficiency due to inadequate levels being provided.

Confirmation of Diagnosis

Obtaining a substrate pH of 6.6 suggests that the elevated pH is contributing to the development of Fe chlorosis. In addition, confirming an iron deficiency diagnosis with leaf tissue analysis can be challenging. Low levels may not always be confirmed. For us, we ran a leaf tissue analysis and found Fe to be low at 48.9 ppm according to the NCDA&CS lab standards.

Corrective Procedures

The easy fix is to avoid having super-saturated substrates. We have observed with other plants that normal green new growth can return if the plant is allowed to dry down between irrigations. The yellow tissue may be slow to turn green and in



Figure 2. The typical symptomology of a iron deficiency is interveinal chlorosis. (Photo: Brian Whipker)



Figure 3. Rosemary leaf blades exhibiting the various symptoms of limited iron. (Photo: Brian Whipker)



Figure 4. Comparison of iron deficient (left) and normal plant (right). (Photo: Brian Whipker)



some cases may not regain color. An iron chelate application may also be beneficial to help make additional iron available to the plant.

Conclusion

Iron deficiency of rosemary and other plant species can occur if the substrate is too wet. When symptoms appear, be sure to check the roots, substrate pH, and the moisture level of the substrate to help diagnose the situation and then plot correction steps.



Figure 5. Isolated, single plant with dripping water inducing iron chlorosis. (Photo: Brian Whipker)

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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

Dan Gilrein
Entomology Specialist
Cornell Cooperative Extension
Suffolk County
dng1@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
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

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