



EASTERN NURSERY & GREENHOUSE PROGRAM

Eastern NC Nursery News

July 2021



Environmental Stress and Colletotrichum Leaf Spot on Itea

Besides red-headed flea beetles, I thought that *Itea virginica* was a pretty easy plant to grow with not many other problems. Since I have been extensively using this plant in my red-headed flea beetle research the past few years and also watch it closely at every nursery I visit, I have discovered another major issue that can occur. The image above shows severe leaf spot and anthracnose type damage caused by a *Colletotrichum* species. This disease is generally thought of as a secondary leaf spot. It is but the stress that makes the tissue susceptible seems to be often overlooked and the results can be devastating. Over the past few years, several samples have been submitted to the NC State Plant Disease and Insect Clinic in which close to or 100 percent of the plants are affected. In most of these cases, Mike Munster determined the main issue to be environmental stress like heat or drought stress. He also was able to isolate a *Colletotrichum* species but considered it secondary. In these cases we believe that if the plants were not damaged by the environmental stress, they would not have been susceptible to *Colletotrichum*. Last year the samples that went to the clinic were plants with severe injury to large leaves as seen on the leaf in the right-center of the image above. This year by putting the word out early in the season to growers that had the issue last year, I was able to catch plants with injury to younger leaves as seen below.



This leaf spot and anthracnose symptoms caused by *Colletotrichum* seem to follow periods of heat and drought stress that are followed by excessive rainfall. The leaves affected usually have some curling, twisting, or other deformation prior to the disease incidence but get worse with the infection. The initial damage usually follows a hot dry period in the spring or summer and symptoms of drought can be seen before the leaf spot and anthracnose symptoms show up.

This situation may be one that is easy to blame on a busy sales season and lack of labor.

Just remember when the heat turns up and the rain stops initially, follow these tips:

1. Manage irrigation closely on itea crops in order to prevent stress and damage that may make plants susceptible to *Colletotrichum*. Itea prefers moist to wet soils. So don't let plants get drought stressed during periods of hotter temperatures and increased water loss.

2. Preventing stress may be easier if itea is grown in a more suitable environment. Although most everyone grows it in full sun, itea can tolerate heavy shade and actually flowers best with just 4 hours of sun per day. Consider growing itea in areas with scattered pine shade or under 40-50% shade cloth. Check out the image at the end of the article from Daniel O'Dell at Taylors Nursery. This is what their plants look like now that they have moved them under scattered pine shade and have managed irrigation more closely to prevent drought stress.

3. If damage has already occurred and the leaf spot begins to show up, here are some treatment options I organized with input from Sara Villani our Ornamental Plant Pathologist. Chlorothalonil (Daconil), boscalid+pyraclostrobin (Pageant), and chlorothalonil+thiophanate methyl (Spectro 90WDG) work on *Colletotrichum* leaf spot. Also, mancozeb (Fore, Dithane, Pentathlon) and copper hydroxide (CuPro, Kocide) or a combination of the two (Junction) work well preventatively before any disease starts.

I would recommend a rotation of chlorothalonil with the addition of mancozeb (1st spray) and boscalid+pyraclostrobin (Pageant) or fluxapyroxad and pyraclostrobin (Orkestra Intrinsic) (2nd spray) if leaf spot is already present. Applications should be made weekly rotating back and forth until improvement is seen and then could go biweekly if the weather is dry. If periods of heavy rainfall occur then you might have to go back to a weekly rotation.

If you want to try to prevent it, then rotate applications of mancozeb and copper hydroxide or the combo (Junction) with Daconil when a 10-15 day weather pattern seems conducive to diseases (rainy and/or cloudy conditions) during the summer, following a hot, dry period.

Also, I recommend blowing prunings out of beds immediately after pruning if any plants have had leaf spots and at the end of the growing season or prior to new growth the following growing season (preferably collect and burn). This will remove inoculum that can spread the disease.

The bottom line is represented below in the image, grow *Itea virginica* in a less stressful situation, prevent drought injury, and they will be beautiful...if you manage those red-headed flea beetles.



IR-4 Grower and Extension Survey

The IR-4 biennial grower and extension survey identifies disease, pest, and weed needs throughout the country for greenhouse, nursery growers, and landscape managers.

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This biennial survey is the best way to tell the IR-4 program generally and specifically what disease, pest, and weed problems you face that you have a difficult time managing because you do not have sufficient management tools.

The survey results help to identify where new pest management tools are needed. The deadline for submitting the survey is **August 13**.

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They are also collecting project requests for 2022/2023 research. The deadline to receive

these requests by is **August 30**. If you know specifically the product you need to address your disease, pest, or weed problem, please fill out this [Project Request form](#) and submit it.

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