

GRAY LEAF SPOT – 2016 THE WORST YEAR EVER FOR OHIO!

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Gray Leaf Spot was confirmed in Ohio much earlier than normal! On Friday July 29, 2016 two cases of the disease were confirmed in the clinic that day. This is at least a month earlier than normally detected in Ohio. Both cases were in central Ohio and at sites that have had a history of the disease. This can be a very destructive disease to ryegrass, both annual and perennial.

Since then there has been many confirmed cases from Cincinnati to Cleveland. Many of the sites had the disease at some point in the past BUT the disease was confirmation in sites where it had never been seen or suspected in the past. Sites included sport facilities (including city/municipal soccer and sport fields – high school fields - professional baseball, soccer and football facilities), golf course fairways and roughs, and the disease is suspected in home lawns but there have been few confirmations.

The disease is caused by the fungus *Magnaporthe oryzae*, also often referred to as *Pyricularia grisea*, and can be a severe problem in the South Eastern US, Mid-Atlantic region and Midwest states on perennial ryegrass. This pathogen is also a serious disease on rice and called blast. Gray leaf spot can occur on ryegrass athletic fields, golf courses, home lawns and parks. However, confirmed cases in Ohio have been primarily on golf courses and athletic fields. Weather patterns that favor Gray Leaf Spot are warm to hot temperatures and high relative humidity especially at night, and periodic rainfall.

Why was the disease so severe in 2016?

This is a good question and it appears that the higher than normal temperatures especially in June, July, August and September favored disease development. There was also a

trend in higher than normal night temperatures and in many locations night humidity was high. These conditions were nearly ideal for the fungus to grow and produce abundant spores. These weather patterns also weakened the turfgrass leaving it more vulnerable to the disease.

Symptoms:

Gray leaf spot or Blast gets its name from the devastating scorched appearance it causes on the foliage of turfgrass. Quite literally, severe outbreaks look as if the turfgrass leaves have been scorched with a flamethrower! Symptoms of gray leaf spot may mimic drought. Check the soil to see if there is adequate soil moisture, if so and if other species of grass are unaffected then gray leaf spot may be the problem. The pathogen kills the plant by causing severe leaf blight. Part of the blighting process involves the production of phytotoxic chemicals, which disrupt the normal biochemical and physiological balance within the plant. Initial symptoms often appear as small pinpoint lesions, which often go unnoticed or mistaken as a less aggressive leaf spot disease. Under optimal environmental and host conditions, these small spots quickly turn into water soaked spots, which then coalesce into water-soaked leaf tips which then progress rapidly to necrotic leaf tissue. At times there may be twisted leaf tips. Patches of Kentucky bluegrass, fine fescues, bentgrass, and other perennial weedy grasses and annual grass will not be affected. In later stages of disease development, the sward may take on a gray color as a result of the mass production of spores/conidia by the pathogen – hence its name, gray leaf spot. In most cases the ryegrass will quickly die and appears as drought stress. In years when there are gray leaf spot outbreaks there is a strong correlation to weather patterns of warm days and nights combined with high humidity and rain fall.

Cultural Management Practices:

- Reduce or limit nitrogen fertilizer in the summer. Avoid quick-release sources of nitrogen.
- Irrigate early morning and avoid evening irrigation. Check the soil moisture level because the disease mimics drought stress. Over watering greatly increases the severity of the disease.

continued on page 12

continued from page 11

- On athletic fields be wary of using rain tarps during gray leaf spot-susceptible times (August through September in the Midwest).
- Replace damaged areas with a resistant type of turfgrass such as Kentucky bluegrass.
- If ryegrass is planted use new perennial ryegrass cultivars that are developed to be less susceptible to the disease. Check the National Turfgrass Evaluation Program (NTEP) web site for results of field testing: <http://ntep.org/>

When selecting seed make sure ALL CULTIVARS of ryegrass HAVE IMPROVED GLS RESISTANCE. If a cultivar is stated to have GLS resistance this does not mean it is immune and over time susceptibility to GLS can change.

Chemical Management:

Chemical management must be timed to prevent damage. Stopping this disease once established in a sward can be extremely difficult and may result in loss of turfgrass. Some of the most effective products are: thiophanate-methyl, azoxystrobin, trifloxystrobin, pyraclostrobin, and DMI's + chlorothalonil. Resistance to fungicides has been reported. No more than two applications in a season of the chemical family's benzimidazole (thiophanate-methyl) or strobilurin (azoxystrobin/pyraclostrobin) are recommended to avoid the development of fungicide resistance. Read labels carefully for more information. Fungicide programs in most years should be started in mid-July to early August depending on historic patterns of disease development in the area.

Remember disease prevention applications, PRE-DISEASE, are much better and successful than POST disease infection applications.

For diagnosis work send turfgrass samples to:

C. Wayne Ellett Plant and Pest Diagnostic Clinic
Department of Plant Pathology
201 Kottman Hall
2021 Coffey Rd.
Columbus, OH 43210

For more information about sampling and for turfgrass sample forms visit one of these sites:

<http://ppdc.osu.edu>

<http://turfdisease.osu.edu/>



An athletic field with Gray Leaf Spot (GLS) Columbus Ohio



Close-up of infected perennial ryegrass with GLS