THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Gray Leaf Spot --- Alert

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Gray Leaf Spot has been confirmed in Ohio! On Friday July 29, 2016 two cases of the disease were confirmed in the clinic. 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. To date this is only a serious disease on ryegrasses in the Midwest.

The disease is caused by the fungus *Pyricularia oryzae* (teleomorph *Magnaporthe grisea*) and can be a severe problem in the Eastern and Midwest USA on perennial ryegrass. It is also a serious disease on rice 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.

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 pinprick 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.
- 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 RESISTACE. 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, pyraclostrobiln, and DMI's + chlorothalonil. Resistance to fungicides has been reported. No more than two applications in a season of the chemical families benzimidazole (thiophanate-methyl) or strobilurin (azoxystrobin/pyraclostrobiln) 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.

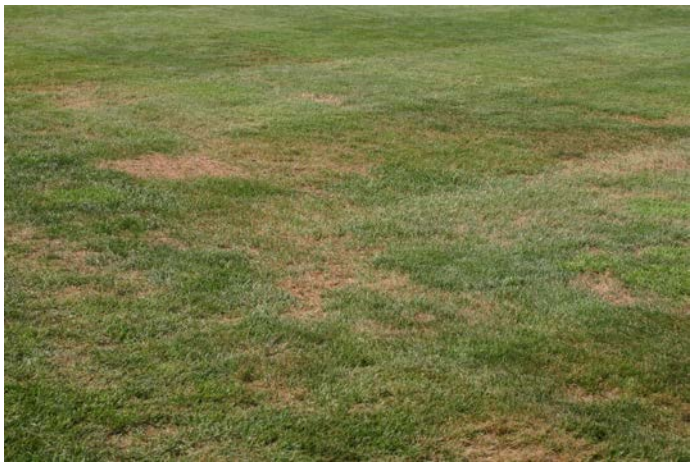

Photo 1: An athletic field with Gray Leaf Spot (GLS) 2014, Columbus Ohio

Photo 2: Close-up of infected perennial ryegrass with GLS.

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/