College of Agriculture, Food and Environment
Cooperative Extension Service

Plant Pathology Fact Sheet **PPFS-OR-T-14**

Submitting Turfgrass Samples for Disease Diagnosis

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Introduction

Plant disease diagnosis performed by the University of Kentucky Plant Disease Diagnostic Laboratory (UK-PDDL) is one of the services offered to citizens of Kentucky through the Cooperative Extension Service. Proper collection and submission of turfgrass samples can enhance the accuracy and timeliness of diagnosis, while poor samples can make disease identification difficult or impossible. This publication aims to assist those submitting turfgrass samples by providing information on how to properly collect and submit samples for the quickest and most accurate diagnosis.

Gathering Information

Photograph the Site

Before collecting a turfgrass sample, take photographs of the affected area. Photographs that accompany physical samples can be extremely helpful, and those taken at a distance are often the most useful. Photograph any large-scale patterns in affected areas, such as patches that coalesce, circular or ring-like spots, or straight-line patterns (Figure 1 vs. Figure 2).

Ask Questions

After taking high quality photographs of the damaged turf, the following questions should be asked, answered, provided to your county Extension agent, and included with the sample to assist in diagnosis.

What kind of plant is it and what is its use? Identify the plant species and variety. If the stand is mixed with different species and/or varieties, please note this. Also include information on the use of the grass, e.g., putting green, fairway, athletic field, or home lawn.

How old is the planting? Note if the disease is on a new planting or a well-established turfgrass stand, e.g., is the turfgrass 6 months old or 6 years old?

Figure 1. This photo, taken at a sufficient distance to reveal a ring-spot pattern, is helpful for diagnosis.

Figure 2. This close-up photo obscures any large-scale patterns and is less helpful than the more distant picture in Figure 1.

What management practices have been used on the site? Describe recent chemical applications, including herbicides, fungicides, insecticides, plant growth regulators, and fertilizers. If possible, provide pesticide application records for the past 30 days. In addition to chemical applications, be sure to include information on recent cultural practices, such as aerification, topdressing, verticutting, or brushing. Include information on mowing height and frequency of mowing, as well as frequency and timing of irrigation.

What were the recent weather conditions? Include recent temperatures and rainfall. Make note of any unusual events as well, such as heavy rains that resulted in standing water.

Where is the turfgrass located? Describe the microclimate of the affected area. Is the location in full sun, partial shade, or heavy shade? Is it an especially wet or dry area? Are there other relevant factors that are unique about the affected site?

What are the symptoms? Describe the symptoms of concern, such as leaf spots, crown rotting, and/or wilting. Have symptoms progressed or changed over time? When did symptoms first appear, and when was the sample collected? Did the symptoms occur in a uniform pattern or in a random distribution? As noted above, photographs can help to clarify symptom patterns.

Figures 3 & **4**. Collect samples from the margin of the affected areas so that both symptomatic and healthy plants are included.

Collecting Samples

When collecting samples for submission, it is vital to make sure living grass is included. Take samples from the edge of the affected area, attempting to collect both symptomatic turf and healthy turf in the same sample (Figures 3 &4).

Close-mown turf

For golf and sports turfgrass, collect at least two 'cup cutter' sized plugs approximately 3 inches deep, along with pictures and full descriptions of growing conditions.

Taller turf

When collecting from lawns or areas where grass is taller than close-mown golf or sports turf, a shovel may be used to collect approximately a 6-inch by 6-inch turf sample at a depth of 3 inches.

Sample storage

Do not store samples in extremely hot or cold environments (such as closed in a car in summer) prior to submitting them.

Submitting Samples

Keep samples intact

Turfgrass samples should be kept intact as much as possible. To prevent the soil from breaking apart during transport, wrap the roots/soil with aluminum foil and/or plastic wrap while leaving the foliage uncovered (Figure 5).

Do not add moisture

Additional moisture, such as wet paper towels, should NOT be added to samples as moisture may increase the rate of deterioration of plant material.

Figure 5. Wrap and carefully package samples to hold soil in place and avoid contamination of leaves with loose soil. Place sample form in plastic bag to protect it from soil and moisture.

Labeling samples

Label samples clearly to correspond with information on the Plant Disease Identification Form (available through the local county Extension office). Place forms in plastic bags to prevent damage and ensure that they remain legible (Figure 5).

Shipping samples

If samples are shipped, they should be placed in sturdy boxes and packed securely with dry newspaper to prevent damage during shipping (Figure 5).

Samples may be shipped to the UK-PDDL by the county Extension agent or Extension office staff. To coordinate a direct mailing or drop-off, please contact the local Extension agent, UK Extension Turfgrass Specialist, or UK-PDDL staff for assistance. Overnight shipments allow for the quickest turnaround and least amount of damage to samples. Plan to send or deliver samples early in the week to prevent possible delays over the weekend.

Remember: Good samples lead to good diagnostics.

Other Resources

For information about how to submit samples of trees, ornamentals and other plants, see this Extension publication:

Submitting Plant Specimens for Disease Diagnosis (PPFS-GEN-09)
http://plantpathology.ca.uky.edu/files/ppfs-gen-09.pdf

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