



What is the Role of TDL?

By Dr. Geunhwa Jung, Department of Plant Pathology, University of Wisconsin-Madison

Wow! It has been two years since I was appointed as a turfgrass pathologist at the University of Wisconsin-Madison. Until recently, I was primarily focused on research in the lab, which requires more time to get established. My graduate students are now well trained and have a clear and solid understanding of their research objectives and how to solve various problems that they might face. Now the time is fully ripened for me to concentrate my efforts into real world problems and to become a valuable instrument for people working with turfgrass in Wisconsin.

My primary responsibility is to provide you with accurate and fast diagnosis of diseased samples received from commercial (golf courses superintendents, sod producers, athletic field managers, lawn care managers, and others) and homeowners through the vehicle of TDL (Turfgrass Diagnosis Lab), previously called TDDL (Turfgrass Disease Diagnosis Lab) as well as with recommendation of disease management. The main reason to change the name was to centralize one place to handle any turfgrass related problems. To make the recommendation reasonable and practical, research plots at the O.J. Noer Research Facilities and right at your golf courses, should be maintained and tested with new products for the control of diseases which are most severe in Wisconsin.

Over the last five years Mr. Jeff Gregos, program manager for Horticulture and Plant Pathology, has played an important role in keeping two main tasks described above rolling successfully. I really appreciate his unselfish dedication to keep the TDL reputa-

tion high and to continue providing valuable information to you. Without hesitation, I can commend his many contributions to Wisconsin turfgrass research during the years that I have been acquainted with him. Simply, we are extremely fortunate to have him. Another important person, whenever we are talking about the TDL, who should not be forgotten is Mr. Gary Gaard. Every summer Gary has been out at the O.J. Noer to diagnose homeowners' samples. This is all boiling down to teamwork. We are all in the same boat to put turf research programs at the University of Wisconsin-Madison on top. In addition, because of the importance of fungicide recommendation and TDL, I hired one Post-Doc fellow to design and evaluate the experimental plots, analyze the data, prepare reports, and make the best recommendation. This Post-Doc will also diagnose the diseased samples along with Jeff and Gary. Basically I want to fortify and strengthen a wall of the TDL and Plant Pathology responsibility.

Most of all, over the past years your active participation in either financial contribution as contractors or your faithful commitment of sending samples truly allows the staff and me to understand what our role means to you. Your continued involvement is extremely important for us to keep the lab active and accessible, as well as to provide you the best quality of services and information.

As a token of many thanks to you, I would like to summarize two years' TDL activities by reporting on how many samples Jeff and Gary processed each year, how diseases occurred in each year, which disease was the most frequently diagnosed, and when the disease actively occurred during the year. Therefore, we might have an idea of seeing a bigger picture of the possible outbreaks of certain diseases in each month and over the year so that future plans of scheduling preventive fungicides can be anticipated and initiated in a timely manner. I do want to emphasize that our observations or conclusions listed below were not drawn from planned experiments. It is simply my interpretation of what we received and diagnosed at the TDL over the years.

The total number of samples processed in 2000 and 2001 were 184 and 133, respectively.

The following conclusions were made by the interpretation of disease samples received and diagnosed during last two years:



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Patch diseases (necrotic ring spot, summer patch, and take-all)

- Most predominant disease in homeowner's samples is necrotic ring spot (NRS), one of the ectotrophic root-infecting fungi which seems to peak in mid summer.
- Kentucky bluegrass species, in 5-6 year old sods with blend of cultivars, is most susceptible to NRS.
- The other ectotrophic root-infecting fungi found in cool season climate zones like Wisconsin are take-all and summer patch.
- However, spring dead spot and bermudagrass decline are patch diseases infecting warm season grass species.
- Summer patch is destructive primarily on Annual bluegrass, Kentucky bluegrass, and fine-textured *Festuca*.
- An interesting finding is the constant occurrence of NRS and summer patch throughout the whole year due to irrigation and rainy weather, promoting the development of symptoms.
- Take-all is a destructive disease on newly established creeping bentgrass greens.

Snow mold (*Microdochium* patch called pink SM and *Typhula incarnata* and *T. ishikariensis*, called gray SM and speckled SM)

- Pink SM occurs in early spring and late fall. It can occur all year long as long as the weather is cool

and wet regardless of snow.

- Typhula blight, meaning both gray SM and speckled SM, occurred predominantly in 2001 (9 samples) due to a longer snow cover than 2000.

Dollar spot

- There is a trend of two outbreaks throughout a year, summer and late fall. This is a well-understood observation.
- You might recall our difficult time of controlling dollar spot in 2000, which is reflected in the number of samples processed.

Anthracnose

- This disease is becoming more of a problem in old courses, mainly due to overpopulation of *Poa annua* which is the most susceptible host species during warm weather.

- The samples came in all season long (May through October) during both years

Some diseases such as rust and powdery mildew

- The TDL did not receive any samples diagnosed for rust and powdery mildew in 2001. It does not mean these diseases did not occur at all. It means that fewer outbreaks occurred in 2001 than 2000 which can be mainly due to weather conditions.

This year I can't wait to see how the occurrence pattern of different diseases is changed. More interestingly, can we have severe snow molds this year relative to last year? 🌿

Table 1. A summary of turfgrass diseases diagnosed at TDL during two years (2000 and 2001) using diseased samples from commercial and homeowners.

| Year 2001 | Yellow Patch | NRS | Summer Patch | Take-All | Melt Out | Fairy Ring | Microdochium Patch | Anthracnose | Red Thread | Dollar Spot | Pythium | Bipolaris | Rust | Powdery Mildew | Snow Mold | Brown Patch |
|-------------|--------------|-----|--------------|----------|----------|------------|--------------------|-------------|------------|-------------|---------|-----------|------|----------------|-----------|-------------|
| March-April | | 1 | 2 | 1 | | | | | | | | | | | | |
| May | | 1 | 2 | 4 | 3 | | 6 | 1 | | 1 | | | | | 3 | |
| June | | 2 | 1 | 5 | 3 | 1 | 6 | 1 | 2 | 4 | | | | | 1 | |
| July | | 6 | 1 | | | | 2 | 1 | 3 | | 1 | | | | 5 | |
| August | | 2 | 2 | 13 | | | | 4 | | 1 | 5 | 1 | | | | 2 |
| September | | 1 | 3 | 1 | | | | 3 | | | | 1 | | | | 2 |
| October | | 4 | 2 | 1 | | 1 | | 2 | | 1 | | 3 | | | | |
| November | | 2 | 5 | | | | | | | | | | | | | 1 |
| Total | 0 | 19 | 18 | 25 | 6 | 2 | 14 | 12 | 5 | 7 | 6 | 5 | 0 | 0 | 9 | 5 |

| Year 2000 | Yellow Patch | NRS | Summer Patch | Take-All | Melt Out | Fairy Ring | Microdochium Patch | Anthracnose | Red Thread | Dollar Spot | Pythium | Bipolaris | Rust | Powdery Mildew | Snow Mold | Brown Patch |
|-------------|--------------|-----|--------------|----------|----------|------------|--------------------|-------------|------------|-------------|---------|-----------|------|----------------|-----------|-------------|
| March-April | 1 | 3 | 3 | 3 | | | | | | | | | | | | |
| May | 8 | 3 | 1 | 8 | 6 | 3 | 6 | 1 | | | | | | | | |
| June | 2 | 1 | 1 | 3 | 6 | 2 | | 9 | 6 | 7 | 1 | | | | | |
| July | 1 | 4 | 4 | 7 | | 2 | | 3 | 5 | 8 | | 3 | 2 | | | |
| August | | 3 | 1 | 2 | | 3 | | 3 | 1 | 5 | 1 | 7 | 2 | 2 | | |
| September | | 3 | 3 | | | 2 | | 2 | | | | 2 | | 1 | | |
| October | | 1 | 1 | | | | 1 | | | 2 | | 1 | 1 | 2 | | |
| November | | | 2 | | | | 2 | 1 | | 1 | | 1 | 1 | 1 | | |
| Total | 12 | 18 | 16 | 23 | 12 | 12 | 9 | 18 | 12 | 23 | 2 | 14 | 6 | 6 | 0 | 0 |