



Charles Anfield, CGCS, *Heritage Bluffs Golf Course*

Maximizing Turf Disease Control

The Midwest members met on a warm and sunny October day for education and golf at the impeccably maintained, Arthur Hills designed Chicago Highlands, hosted by Michael Huestis and his staff.

Dr. Rob Golembiewski from the Bayer Green Solutions Team made his presentation on “Maximizing Turf Disease Control.”

Plant health is an ambiguous term that has been used freely in the turf industry, but has not been clearly defined. Dr. Rob had a couple of definitions:

1. Optimal plant growth and development in the presence / absence of abiotic and biotic stress.
2. Environmental conditions are balanced with management inputs to meet expectations of golfers.



Turfgrass breeding programs are making improvement in dollar spot resistance.

He explained, “superintendents are at the core of plant health”.

Weather patterns have a huge influence on plant health anywhere. Root growth of bentgrass and *Poa annua* respond differently to soil temperature ranges and soil moisture. Random large rainfall events can significantly modify conditions in a hurry.



Disease can become an issue year round. Disease calendars, models and programs can become useful to pinpoint the mostly likely conditions that will favor a specific disease on a specific turf type. The disease triangle model factors in relationships and requirements between the host, pathogen and environment.

Disease control can be achieved through:

1. Genetics: “We have come a long way in genetic breeding over the last 25 years.” Some varieties are being bred to be drought tolerant. Other breeding programs are making improvements in dollar spot and gray leaf spot resistance.



Other breeding programs are focused on drought tolerance, reducing the need for water inputs.

2. Biologicals: "As a stand-alone product we are not there yet. Most people will combine the biological applications with low rates of fungicides."
3. Cultural Methods: These would include mowing, dew removal, topdressing, etc. This is probably the area of disease control where Superintendents have the most influence. Inputs of Nitrogen will decrease dollar spot disease pressure. Spoon-feeding applications using an ammonium Nitrogen source provides the best results to reduce disease severity. Low mowing heights have proven to increase turf to disease susceptibility. Decreased photosynthetic ability of having less leaf area decreases overall plant health. Dew removal by dragging or rolling to displace moisture and reduce leaf wetness duration has proven to decrease disease incidence. Research conducted by Dr. Rob while at Oregon State University (GO BEAVERS!) demonstrated that by substituting rolling instead of mowing on Poa annua greens, plant health increased without loss of green speed. Some diseases are enhanced by compaction and low soil moisture. Aerification and judicious irrigation will be useful tools to influence and maintain plant health.
4. Chemical Control: Different growth regulators can be combined for synergistic activity to enhance plant growth. Certain products applied for certain diseases create disease resistance over time. Nozzle types can optimize coverage and improve fungicide performance. Fan type nozzles work best for foliar diseases. Increase water volume for stem base and crown diseases. For root borne diseases water in product immediately.

Suffice to say, plant health is critical to providing excellent playing conditions. That's us. We are the "keepers" of the green and it is our job to educate ourselves, use science and research in the attempt to do everything better and more efficient. That's the progression that any profession needs to get stronger. For the game of golf, it's all about the turf. 

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