

The Turfgrass Pathology Program



Program Update

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In this and coming issues of *CUTT*, we will discuss various aspects of our research, outreach and teaching programs, and current issues in turfgrass pathology. The first article of this series presents an overview of the Turfgrass Pathology Program at Cornell.

The Turfgrass Pathology Program examines environmental issues surrounding disease control. Research projects are focused on golf turf with studies in the following areas:

- impacts of microbial inoculations and compost amendments on disease control
- the impacts of fungicides and compost amendments on disease control and soil microbial properties
- biological and chemical seed treatments to improve stand establishment
- mechanisms of biological control by bacterial inoculants
- bentgrass rhizosphere microbiology
- *Pythium* tolerance among bentgrass cultivars
- the biology and ecology of *Pythium* species and *Sclerotinia homoeocarpa*.

These projects maintain an applied focus but also are designed to examine basic biological and ecological interactions among plants, microorganisms and soils.

The main emphases of our research have been on studies of biological disease control and on the ecological relationships of soil microbes to turfgrass health. These are areas of research for which few scientists have been engaged and for which many of the answers to sustainable disease management lie. Our goals are to develop sustainable nonchemical approaches to disease control as well as to develop an understanding of how soil microorganisms influence plant health so that management practices that maintain optimum soil quality can be used to maximize turfgrass health.

The results of our research efforts are extended to turfgrass managers through outreach programs. The turf pathology outreach program is focused primarily on educating turfgrass managers about disease diagnosis and nonchemical management strategies. Turfgrass disease diagnoses and associated educational programs are handled by the Insect and Plant Disease Diagnostic Laboratory on the Cornell campus under the direction of Diane Karasevicz. Currently the diagnostic laboratory processes between 50 and 60 turfgrass samples a season, providing information on causal agents and disease management strategies. In addition to microbial plant pathogens, nematode diagnoses are also handled by laboratory staff. The most common disease

diagnoses in 1996/97 were for *Pythium* root rot, anthracnose, *Leptosphaerulina* leaf spot, and summer patch.

Major turf pathology educational offerings occur as part of the following campus-based programs:

- **The Cornell Turfgrass Short Course**, offered each year during the first half of January. Six hours of turfgrass pathology instruction covers basic aspects of turfgrass disease identification and management.
- **The Cornell Advanced Diagnostic Turfgrass Short Course**, offered in selected years during the first week of August. This 2-day course offers intensive training in both field and laboratory disease diagnosis and in IPM methodologies.
- **The Cornell Turfgrass Field Day** takes place annually during the third week of August and provides opportunities to review current research and outreach efforts.

In addition to these campus-based programs, there are dozens of regional, statewide and nationwide programs providing current information on various aspects of turfgrass pathology. These include such New York-based programs as the Cornell Long Island Turfgrass Short Course and the New York State Turfgrass Association Conference and Show. Throughout the year, presentations are made at many other state-sponsored turfgrass conferences, usually dealing with aspects of biological control and soil microbiology, and at selected national and international conferences and educational programs. Additionally numerous written resources are prepared each year; *CUTT* is one example.

In the next issue, we will be reviewing some of our recent research findings and how they may be of use to you. Stay tuned!

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