



# What's Happening in 1993?

By UW-Madison Turfgrass Group

Research and education are the cornerstone of our industry and over the last few years we have begun to focus our attention on the "epicenter" of this endeavor—the Noer Facility. Activities abound at the Facility even during the stillness of the winter. But, before we discuss these activities, I have noticed some confusion, during my travels, among our allied industries, between our Noer Facility and the National O.J. Noer Research Foundation. I urge you to be clear in your communications to distinguish and clarify their perceptions.

### Facility Manager

The loss of Tommy Salaiz, our first facility manager, has made for an interesting winter and one in which Julie and I began our indoctrination to University politics. I can only say how grateful we should be for the experience and wisdom of Wayne and Chuck. Much open discussion occurred regarding the future of the position which resulted in the approval to solicit applications. Position descriptions were sent to all turfgrass programs in the nation, including Canada, and the response has been wonderful. Applications have been received from nine different states with candidates who possess excellent practical experience and a sound appreciation of research. We are interviewing the candidates during the latter part of April and may have made a selection by the time this issue goes to press. This is very exciting stuff!

### Field Day

The second Field Day held at the Noer Facility will be Tuesday August 17th, 1993. This year's Field Day will include an equipment show, the opportunity to wander through the demonstration areas, and a guided tour of the research plots. Please mark your calendars (you may notice it is the day after the WGCSA meeting at SentryWorld); we'd like it to be the Best Ever!

### Turfgrass Pathology Research— Dr. Julie Meyer, Department of Plant Pathology

#### Snow Mold Research

In the face of environmental concerns about the use of mercury-based fungicides, the management of gray snow mold will be a major research direction this year and in years to come. In 1992, a bentgrass cultivar trial was established and will be rated for snow mold tolerance over several seasons. In the fall of 1993, evaluations of non-mercury fungicides as well as an evaluation of brewery waste composts/extracts on control of snow mold will be conducted in both southern and northern locations.

Long-term research on snow molds will also be started this year. There is some encouraging work on biological control of gray snow molds that was done in the late 1980's in Ontario, Canada. Researchers at the University of Guelph found isolates of a nonpathogenic fungus, *Typhula phacor-*

*rhiza*, that suppressed gray snow mold disease to tolerable levels. *Typhula phacorrhiza*, is a close relative of the *Typhula* fungi that cause gray snow mold, except that it lives on organic matter and is not a pathogen. This spring we will begin isolation and evaluation of potential biocontrol organisms such as *Typhula phacorrhiza*. We will also be collecting isolates of snow mold fungi from across the state so we can begin to determine the temperature and moisture ranges when the sclerotia of these fungi begin to germinate. This is important to know so that fungicide applications can be timed in the fall to correspond with sclerotia germination—the most vulnerable stage of the life cycle and the time that fungicide applications would be most effective.

### Necrotic Ring Spot Research

Necrotic ring spot is a persistent disease on Kentucky bluegrass that needs much more research. Dr. Gayle Worf did excellent work in discovering the pathogen that causes this disease. We would like to carry on his work and continue studying the biology and management of this pathogen. We will set up a cultivar resistance study and also look for opportunities to suppress this pathogen biologically. The first step planned in this direction is to see if the disease can be suppressed by increasing microbial activity of the turf with organic fertilizers or composts. We will attempt to establish a disease nursery of necrotic ring spot for demonstration as well as research purposes.

### Additional Cultural Management Research

In addition to snow mold and necrotic ring spot cultivar trials, I would like to continue Dr. Worf's experiments on management of *Helminthosporium* leaf spot with species mixtures. We also have the NTEP tall fescue plots, with 96 cultivars, that will be checked and rated for disease throughout the season.

We know there are interactions between turf fertility and turf diseases, and there are many good research topics to study in this area. This year we plan to evaluate the control of summer patch on *Poa annua* with acidic fertilizers, the effect of organic fertilizers on suppression of dollar spot (and brown patch if weather conditions are right), and the effect of nitrogen on dollar spot of bentgrass. Dr. Wayne Kussow will be a valuable consultant and collaborator in these studies.

We have excellent weather data equipment at the Noer Facility and this is a good opportunity to begin to organize this data for use with disease forecasting models that are available for several diseases, including dollar spot, leaf spot, and *Pythium*. We will also set up the PestCaster and evaluate how well these forecasting models work under our Wisconsin conditions.

### Soil and Fertility Research— Dr. Wayne Kussow, Department of Soil Science

#### Nutrient and Pesticide Losses from Turf

The objective of this long-term study is to determine how subsoil compaction influences runoff and leaching losses of nutrients and pesticides from turf. Installation of the plots and runoff collection systems was largely completed in 1992. Some adjustments remain to be made and pan lysimeters installed in each plot. The Kentucky bluegrass will be managed to simulate a home lawn situation with regard

to fertilization, weed control, irrigation and mowing. Volumes of runoff and leachate will be measured and samples analyzed for nutrient and pesticide content.

### Development of Standards for Organic Amendments in Sand Matrix Putting Greens

Experiments are underway to provide measures of the biological stability of a large variety of organic amendments and to relate this and numerous other properties to the greenhouse performance of mini putting greens. Installation of forty 8' x 8' putting greens at the Noer Facility was 70% completed last fall. Their construction will be completed as soon as weather permits and the greens seeded to 'Penncross' creeping bentgrass. Observation wells will allow us to monitor soil moisture in each green, periodically sample the rootzone mixes to measure composition changes, and to observe root growth throughout the season. Frequent visual ratings will serve to characterize treatment effects on bentgrass establishment and changes in quality over time.

### Environmentally Responsible Nitrogen Management

This study, begun in 1992, will continue for at least two more seasons. The objective is to identify N management strategies that provide satisfactory Kentucky bluegrass color and quality while minimizing clipping production and avoiding leaching loss of nitrate. The N variables are carrier, rate and frequency of application.

### Temperature Dependency of N Release from Milorganite

This study is still in the planning stage, but 1993 implementation is anticipated. The basic premise of the study is that effective use of Milorganite as a turf fertilizer requires knowledge of how temperature affects microbial release of the predominantly organic N in Milorganite.

### Turfgrass Physiology and Weed Research— Dr. Frank Rossi, Department of Horticulture

#### Predictive Weed Models

The objective of this research is to quantify developmental stages of weeds to properly employ integrated management strategies such as biological control options. We will initiate experiments designed to determine the environmental conditions (soil moisture, light penetration through the canopy, degree days, etc.) necessary for the emergence and growth of turfgrass weeds such as crabgrass and annual bluegrass.

#### Winter Injury Research

The objectives of this broad based project are to determine various causes of low temperature injury and freezing stress (crown hydration) and investigate cultural management options which could minimize this severe stress problem. Species and cultivar evaluations will be initiated to determine individual selections and mixtures which afford greater winter hardiness under several maintenance programs. Laboratory research will be initiated with Chris Bullinger (the WTA Research Asst.) to investigate cellular level response to low temperature and freezing stress.

#### Creeping Bentgrass Seeding Density

We will conduct this experiment at three locations to determine the affect of seeding density on establishment

rate, seedling vigor, wear tolerance, and disease infestation of creeping bentgrass. There are many questions which continue to arise regarding the amount of seed required for optimum density. Are we sacrificing long term sward vigor for immediate dense and finer leaf turf?

In addition to individual projects, the UW Turfgrass Research Group expects to collaborate on several projects as part of the continued development of our program. As a group, we will continue the species and cultivar evaluations, herbicide, fungicide, fertilizer and plant growth regulator evaluations, and begin construction of our experimental greens. 🌱

### Answers to the puzzles on page 18.

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