WT&T's travelin' show

This fall we took to the road to find out what you're up to. Here's our report.

by **Ken Kuhajda,** managing editor

Four separate events. Four different sites. One constant: the flow of information.

In Wisconsin, we perused John Deere's new and upgraded products for 1986.

At the jointly sponsored Michigan State University/Michigan Turfgrass Foundation field day, we examined plots at one of the most prestigious turf schools in the country.

Cornell University's turfgrass and woody ornamental field day featured distinguished horticulturists addressing a variety of topics.

Beautiful Virginia proved an ideal setting for the informative Virginia Tech turfgrass field days in Blacksburg.

Deere: '86 and beyond

As John Deere heads for its 150th anniversary (1987), it's not anteing and folding.

Deere announced new homeowner and commercial products to more than 3,000 dealers and salespeople during three weeks of meetings ending in late September.

Promising "dramatic changes" for its 1986 consumer product line, Deere also made changes geared for the commercial audience.

On the consumer front, ten 21-inch walk-behind mowers replace four current models. Deere says they provide a greater selection of features including both two- and four-cycle engines, rope or electrical start, and a six-quart auxiliary gas tank.

Deere debuted some 20 new products to dealers including:

- Three hydrostatic drive compact utility tractor models;
- Two diesel-powered commercial front mowers along with five implements; and
- Three skid-steer loaders, all with vertical path booms.

Since entering the commercial market in 1983, Deere has purchased a 20 percent interest in the Bunton Company, a manufacturer of commercial mowers.

John Deere personnel *attach the Power Flow bagging system to a lawn tractor.*

MSU: turf and more turf

The foliage in East Lansing, Mich., home of the Spartans, was appropriately colored deep green during Michigan State University's turfgrass field day held in early September at the Robert W. Hancock Research Center.

One report in particular grabbed our attention.

B.A. Montgomery and J.M. Vargas Jr., MSU turf pathologists, are developing a computer model that predicts when summer patch outbreaks will occur and how severe they will be.

The disease, caused by the root-infecting fungus *Phialophora graminicola*, caused severe late-season turf loss on annual bluegrass (*Poa annua L.*) fairways throughout the Midwest in 1983 and 1984.

The prediction model, say the researchers, will be available in a microprocessor for access and use on the golf course.

Data should allow both small-budget and large-budget superintendents to combat the disease.

Superintendents with large fungicide budgets will be able to treat fairways just prior to a disease outbreak.

Those with smaller budgets can inform their membership of an impending outbreak even if finances prevent treatment. It tells members, "I'm

Cornell's Dr. Marty Petrovic *speaks on the AREST facility.*

Former Cornell professor Dr. Richard Smiley *addresses the subject of patch diseases.*

aware of what's going on."

The researchers are developing the program by monitoring the environmental factors (soil moisture, temperature, oxygen diffusion rate, air temperature, relative humidity) that lead to summer patch on golf course fairways.

Data was to be available sometime this fall.

Another MSU experiment involves studies on greens management, specifically the effect of different nitrogen fertilizer programs on Penncross, Penneagle, and Emerald bentgrasses.

The results:

- After four years treatment, there are few observable differences between Penncross and Penneagle plots not receiving traffic.
- Penncross is superior to Penneagle in wear tolerance and general turf quality but is more susceptible to thatch formation.
- Emerald generally ranks inferior to the other grasses and is highly susceptible to dollarspot.

Cornell: the AREST facility

Cornell University's turfgrass and woody ornamental field day in early September dawned overcast and drizzly but the poor weather didn't detract from Ithaca's beautiful countryside—or the presentations of Cornell's all-star faculty.

Of particular interest to WT&T is Cornell's AREST facility (Automated Rain Exclusion System for Turfgrass studies).

This half-completed facility should provide valuable information on water use on turfgrasses and the fate of fertilizers and pesticides.

It should be functional next year and provide several years of research data.

Cornell says it's unique among research centers worldwide for several reasons; one, it's designed to control input of water by excluding rainfall and controlled irrigation.

The facility includes a movable greenhouse (called a rainout shelter) that is activated by rain and shields the plots. Water comes from a separate irrigation system for each of the 27 plots.

The AREST facility features separate drainage systems for each plot. The plots are lined with plastic and contain seven perforated plastic drain tubes, allowing the study of the fate of pesticides and fertilizers as influenced by soil moisture and other treatment variables.

Cornell associate professor Dr. Marty Petrovic says several major projects are planned for the future including the effects of fertility on turfgrass water use.

A second study involved a summary of pathology research on patch diseases. Dr. Richard Smiley (former Cornell prof now with the Columbia Basin Agricultural Research Center in Pendleton, Ore.) and colleagues have theorized on the identity of the pathogens that cause what was once known as Fusarium blight. They have since separated the disease into summer patch (caused by *Phialophora graminicola*) and necrotic ring spot (caused by *Leptosphaeria korrae*).

Some results of the continuing study:

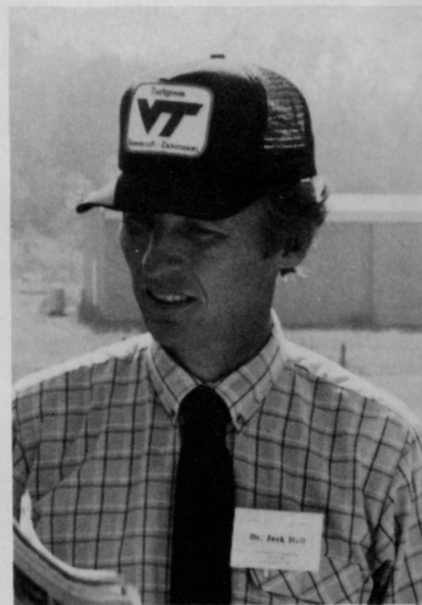
- *P. graminicola* is most active in environments with high temperatures (82-91 degrees, F) and wet conditions.
- *L. korrae* is active over a broader range of temperatures and moistures.
- *P. graminicola* is most aggressive on plants incubated at high temperatures. Data indicate it grew through sod and along rhizomes on plants incubated at temperatures above 70 degrees but only killed plants rapidly when the temperature was 84 degrees and above.
- Shading has a duel influence. At intermediate temperatures, heavy shading increased the disease. ("Presumably by reducing the amount of photosynthetic products moved from shoots to roots, thereby reducing the bility of the plants to replace infected roots," say researchers.) At higher temperatures, heavy shading reduced disease, possibly by reducing the soil temperature and the respiration rate in the root system.

Tech's turf plots

Blacksburg, Va., was an idyllic setting for the Virginia Tech turfgrass field days in mid-September. Blue skies and temperatures near 80 added to the charm of the transition zone area near the Brush Mountains.

"Extending Bermudagrass Growing Season" caught our eye.

Virginia Tech's Dr. Dave Chalmers *makes a point on winter covers for bermudagrass.*



Virginia Tech's Dr. Jack Hall, *a WT&T advisor.*

Tech faculty say the addition of iron fertilizer (in Blacksburg, in late summer and early fall) extends the bermudagrass growing season.

Tech faculty member Richard White (who recently went to Rutgers) says iron fertilizer enhances bermudagrass vigor during exposure to chilling temperatures and can carry color into mid- and even late-October.

However, in northern transition zone areas like Blacksburg daytime highs of around 70 and nighttime lows in the 40s will result in a yellowing bermudagrass.

According to the study (formally titled "the carbon dioxide exchange rate of bermudagrass under chilling stress in response to iron fertilization"), Midiron bermudagrass returned within 70 percent after chilling stress whereas Tifgreen returned to within only 30 percent of pre-stress daytime carbon dioxide exchange rates.

Another study evaluated the effectiveness of covers for winter protection and enhancement of Midiron bermudagrass.

Just prior to dormancy, five-year-old Midiron bermudagrass plots (29 square meters) were covered with Spunbond 110, Spunbond 170, perforated clear plastic, and perforated black plastic (Nov. 1, 1984).

On Nov. 21, 1984, other dormant plots were covered with the same material.

All covers were removed on April 15, 1985. The results:

1) covering bermudagrass for protection against winter damage conditions the grass to tolerate low freezing temperatures and enhances initial spring post-dormancy growth;

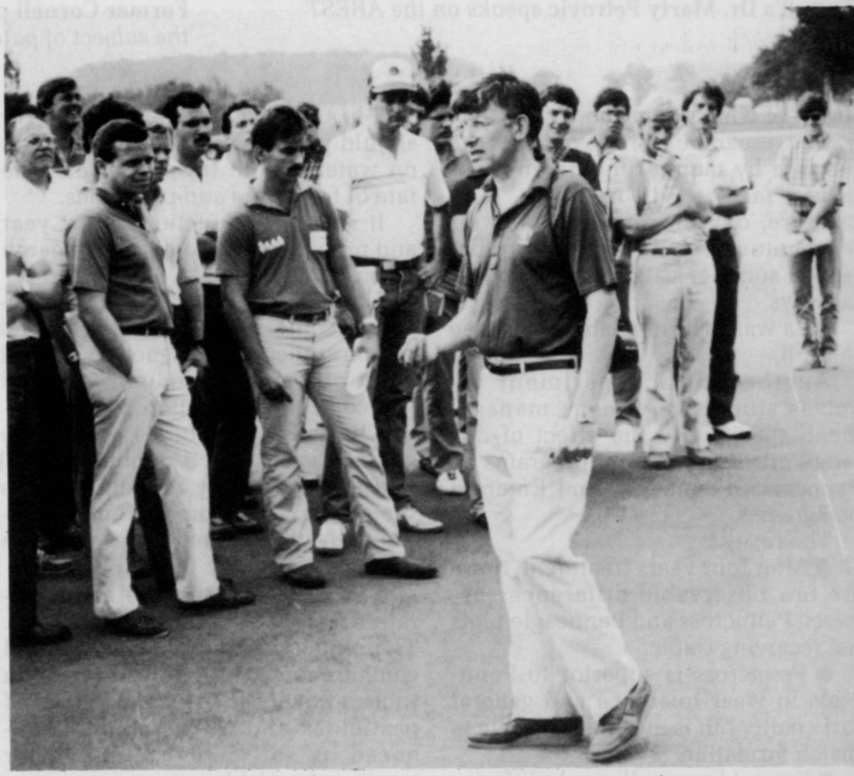
2) installing covers before dormancy, rather than after, causes the grass to retain color longer in the fall and conditions the plants to withstand freezing temperatures;

3) preliminary results indicate covers that permit some solar radiation penetration are most desirable;

4) clear plastic resulted in the best initial post-dormancy growth but lagged in retaining color in the fall when compared to the opaque materials;

5) black plastic covers produced best fall color retention but did not condition the plants to freezing temperatures or enhance post-dormancy growth as well as other covers;

6) the Spunbond covers caused bermudagrass to retain good fall color, conditioned the plants against freezing temperatures, enhanced soil temperatures in winter, and stimulated spring growth. The lighter Spunbond "was somewhat better than the heavy-weight Spunbond." **WT&T**



MSU's Dr. Paul Rieke *talks about management programs for greens.*