

suburb). The presentation focused on the development and use of Supina bluegrass as a golf course turf. Subsequently, I visited several golf courses, all private, around London and southern England.

While the superintendents were a delightfully witty and wise bunch, English golf courses exist in a different world. Sometime it would be wonderful to have a superintendent from England give a presentation at Turf Expo. Clubhouses at many courses had a long history, including some which were fully modernized, renovated stone castle from the Middle Ages. Turf management budgets, however, all seemed to be tight. One course I visited employed two full time staff, and no seasonal help, yet they had 18 holes and were open virtually 12 months a year! Very little fertilization or watering is performed on English golf courses, this certainly keeps mowing requirements down!

Many fairways were planted to fine fescues, and it was not uncommon to see fine fescues used on putting greens. One fine rainy day (actually, most of the week was warm and sunny) we spent at Wimbledon with the superintendent, Eddie Seaward, my second opportunity to do so (my first was in 1993, shortly after Eddie began at Wimbledon). On this trip, I did finally got a chance to see Stonehenge (albeit at 60 mph!).

The American perspective: In October I presented a paper at the American Society of Agronomy meetings in Anaheim, CA. The paper was entitled "Nitrogen and trinexapac-ethyl effects on photosynthesis of Supina bluegrass and Kentucky bluegrass in reduced light conditions." I co-authored two other papers presented at the same conference.

Between Amy Sausen and myself, four research projects were discussed at the WTA field day. The projects included NTEP bentgrass-greens, NTEP perennial ryegrass, Kentucky bluegrass cultivar evaluation for fairways, and athletic field management.

#### **EXTENSION Extension Activities**

This past year provided an inexhaustible wealth of extension opportunities. Since my arrival in April, our marquee event was the WTA Field Day at the O.J. Noer Turfgrass and Research Educational Facility. We plan to make next year's field day even better! We also provided a

homeowner field day this year for about 70 homeowners. Site visits were made to 29 golf courses, sod farms, and athletic fields. Five site visits were made to Lambeau Field to discuss management of the new sand based SportGrass system. Service was also provided for the assessment of Camp Randall as the UW Athletic Department decides whether to replace the current artificial turf surface with natural grass or a new artificial turf (they are currently leaning towards artificial turf).

Help was provided to the City of Menasha Parks Department to develop a first-rate plan to properly manage the turf areas while cutting pesticide use in half.

Approximately 150 phone calls were received from turfgrass professionals, county extension agents, and homeowners. About half the calls were from homeowners, with a large percentage of the remaining calls concerning high school and municipal athletic fields. Approximately 15 weed samples were identified in 1997, most of them sent from county extension agents. Amy Sausen continued to coordinate the turf hotline, a phone based system designed to provide up to date information on current turf issues (diseases, management practices, etc.): in 1998, additional information will be placed on a web page which is currently under construction.

A one day in-service was provided for county extension agents, in which Dr. Kussow also participated. Participation in the hour-long weekly ETNs (electronic teleconferencing net-

work) was a major avenue for providing turf information to county extension agents throughout Wisconsin.

#### **Extension presentations**

One television and fourteen radio programs were conducted in 1997, with Amy Sausen responsible for all but two of the programs. In June, an overview of the O.J. Noer Facility was presented to the Bascom Hill Society. In August, I gave two presentations for the UW-Extension Trial Garden and Plant Health Field Day at Boerner Botanical Gardens in Milwaukee. Between Amy Sausen and myself, four presentations were provided at the WTA Field Day and two day-long presentations were given at the Homeowner Field Day in August. In September, I gave an introduction/future plans presentation at the monthly Wisconsin Golf Course Superintendents Association meeting held at Rolling Meadows GC. In December, I gave two invited presentations for the North Central Turfgrass Conference in St. Charles, IL, at Pheasant Run Golf and Country Club.

#### **Extension publications**

Twelve extension/industry publications were produced after I arrived in 1997, including three articles in The Grass Roots, one in Wisconsin Crop Manager, one in the Wisconsin Turfgrass News, seven in the WTA Field Day booklet. Prior to my arrival, Amy Sausen coauthored an extension publication entitled "Lawn Fertilization" with Dr. Kussow and Sherry Combs.

*(Continued on page 53)*

**TURF Rx**

**FINALE<sup>®</sup>** HERBICIDE

**BANOL<sup>®</sup>** FUNGICIDE

**PROSTAR<sup>®</sup>** FUNGICIDE

**ACCLAIM<sup>®</sup> EXTRA** HERBICIDE

**TURCAM<sup>®</sup>** INSECTICIDE

**PROSTAR<sup>®</sup> PLUS** FUNGICIDE

**ILLOXAN<sup>®</sup>** HERBICIDE

**PROGRASS<sup>®</sup>** HERBICIDE

Leading products to help keep your turf in top condition.

**AgrEvo<sup>®</sup>**

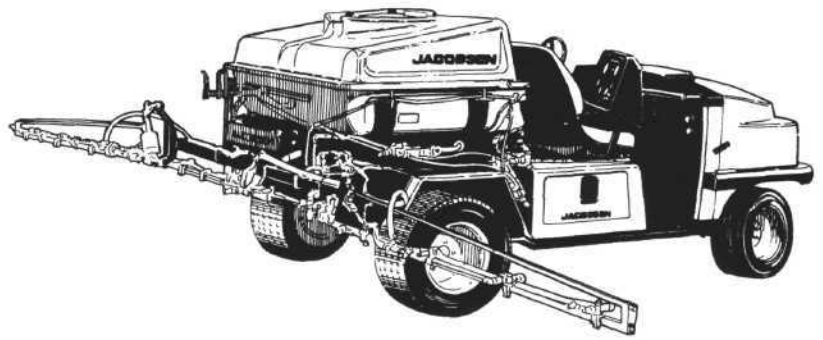
Contact your AgrEvo Sales Professional

**John Turner**  
(630) 462-9866  
TurnerJ@wilmde.hcc.com

Read and follow label directions carefully. AgrEvo USA Company, Wilmington, DE 19808 © 1997

**JACOBSEN**

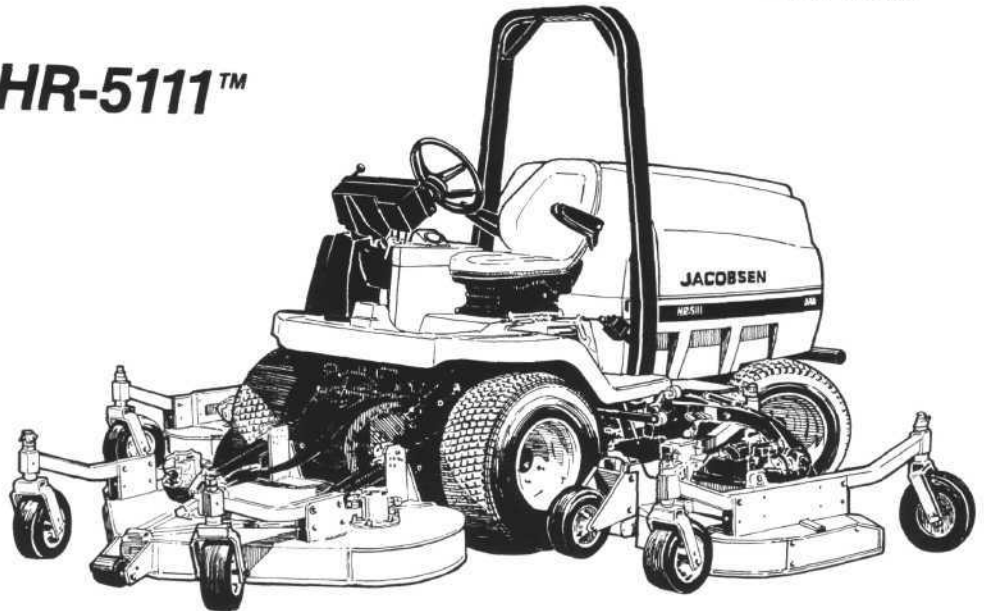
**TEXTRON**



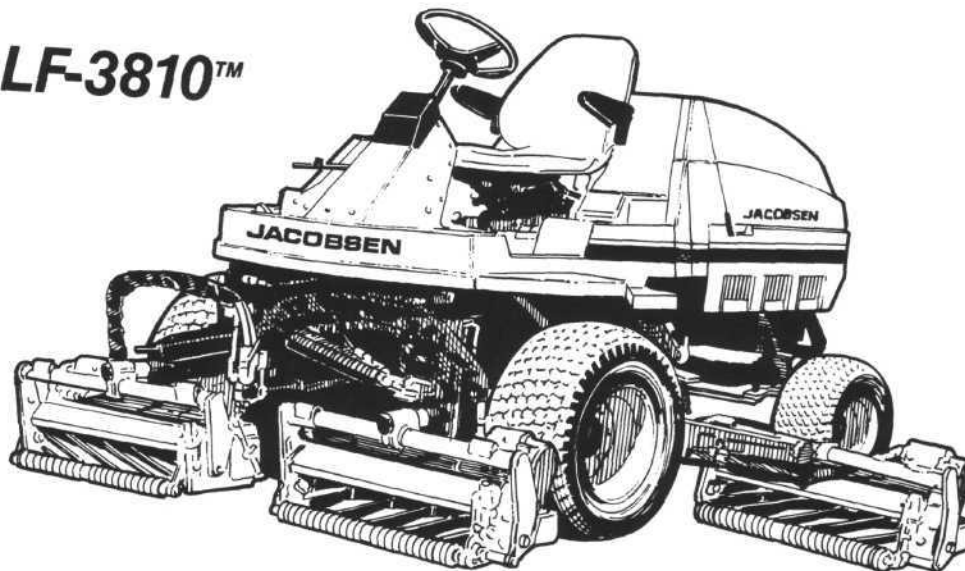
SV Utility Truck

**HR-5111™**

11' CUT  
50 HP. DIESEL ENGINE  
4 WHEEL DRIVE  
ALL HYDRAULIC DRIVE  
NO BELTS  
NO PULLEYS



**LF-3810™**



5 OR 10 BLADE REELS  
10' CUT  
38 HP. DIESEL ENGINE  
2 OR 4 WHEEL DRIVE

**WISCONSIN TURF EQUIPMENT CORP.**

\*\*\*TWO LOCATIONS\*\*\*

1917 W. COURT ST.  
JANESVILLE, WI. 53547  
608-752-8766

21520 W. GREENFIELD AVE.  
NEW BERLIN, WI. 53151  
414-544-6421

(Continued from page 51)

### ACADEMIC

On the academic front, the introductory turf class (Hort 261) was taught during autumn semester to 19 students, which is a typical number for this class. This three credit course consists of two hours of lecture each week plus a three hour lab. I gave one guest lecture in the weed science course for the agronomy department.

### New Course

Enrollment in turf programs throughout the U.S. have recently skyrocketed. From 1992 to 1997, students earning a B.S. degree in turf management from Michigan State University increased over 200%, rising from approximately twenty students to eighty in those five years, with similar numbers being posted at Penn State University and other universities. Part of the reason is these universities have such successful programs is their ability to offer several turf courses. In December 1997, I proposed a new course, Advanced

Turfgrass Management and Physiology (Hort 375), which will be offered in alternate years beginning autumn 1998. The new course will examine the interaction between environmental stresses and management practices. Certain lectures will be devoted to topics such as pesticide fate, turfgrass breeding, and the application of biotechnology in turf. In addition to the traditional lecture format, students will be given a special assignment. For the assignment, students will each be given a "turf situation", e.g., golf course, for which they have to develop a budget (including seasonal hires, chemicals, equipment purchases, etc.) and management practices (mowing, fertilizing, pest control, topdressing, etc.).

This new course will bring the total of dedicated turf courses taught at the University of Wisconsin to three: two in horticulture and one in the soils department taught by Dr. Kussow. Eventually, I would like to add a pest management course (diseases, weeds, and insects), but implementing this will be contingent upon hire of a faculty member in the

department of plant pathology and the cooperation of the entomology department.

### Badger Turf and Grounds Club

Co-advising of the Badger Turf and Grounds Club is also being performed in cooperation with Dr. Wayne Kussow. In 1998, plans are to help the club revitalize their web site, increase club participation, and enhance their revenue generating abilities so more club members can attend conferences such as the GCSAA national conference.

### Farewells

One last note: Emily Buelow, a former graduate student in the horticulture department, completed the requirements for her M.S. degree in August. Emily immediately accepted a position as instructor for the two year turf program at North Carolina State University and has been doing a fine job. Her success, as well as the undergraduates who entered the workforce in 1997, is yet another way of helping to increase the visibility of the UW turf program. ♣



## Golf Course & Athletic Field Mixes

We understand the needs of professional groundskeepers – quality and time are important!

### Say no to:

- Delayed Deliveries
- Contaminated Sand
- High Prices

### Call Wolesek's, the company who cares with:

- Consistent Particle Size
- Proper pH
- On-Time Delivery
- Affordability

**GUARANTEED!**

### We Offer:

**Kiln-Dried Sterilized Top Dressing Sand**  
**80/20 Top Dressing Mix**  
**Construction Mixes**

Bunker Sand • Reed Sedge Peat • Cart Path Aggregate  
Bark, Boulders & Decorative Stone  
**Custom On-Site Blending**



**(715) 423-3909** Fax (715) 423-4215

*Product meets standards for putting green root zone mixes as specified by the USGA.*



## The Buzz in the Turfgrass Pathology World: Part I

By Jeffrey S. Gregos, Turfgrass Disease Diagnostic Lab,  
Department of Plant Pathology, University of Wisconsin-Madison

In today's world of increased environmental concern, many chemical companies are developing new products that pack more of a punch with less active ingredient. Also, the equipment manufacturers are responding with new machines that more efficiently deliver pesticides and even are site specific so that the chemicals they deliver work with increased efficacy. This article will be part of a series that will focus on new technologies for application and the constantly changing market of fungicides and biological control strategies.

### Injectors

The injector has rapidly become the weapon of choice for improving soil aeration in the middle of the season for good reason — it causes little to no disturbance to the green's surface. Well, now they may offer a new possibility in your arsenal for the battle against diseases. Work done by Dr. Bruce Clarke at Rutgers University has shown that with the use of such equipment to inject fungicides it can be used effectively for controlling some root-infecting fungi. Not only does this application method increase control, but the rate of fungicides can be reduced (Bruce Clarke, personal communication).

However, as with everything good, there are drawbacks: the treatment must be placed about 3/4" deep or at the thatch soil interface. This is very important if you are using a DMI fungicide (Rubigan, Bayleton, Sentinel, Banner, Eagle) as these chemicals are tied up by soil particles, and will be rendered useless if injected too deep. Also, the use of chemicals through some injectors can deteriorate parts of the equipment, so the new material injectors must be used.

If you don't have the money to purchase this new technology, there are other ways to improve your control of diseases such as take-all patch and summer patch without them. When controlling these diseases, additional research by Dr. Clarke has shown that pre-watering the area, followed by the fungicide application and then no more than a 1/4" of irrigation will significantly improve control. It also helps to do this on an overcast day which will decrease the dry time and will give you more time until you have the opportunity to water in the fungicide. I must also caution that his research has shown that irrigating more than a 1/4" after a fungicide application has a detrimental impact on the efficacy of the fungicides.

### 26 GT

No, I am not talking about a sports car, but Chipco 26 GT. This product that you may have seen in some of my trials this past year is a new formulation of Chipco 26019. So what makes this formulation different? According to a representative from Rhone Poulenc, it is a new formulation of iprodione (active ingredient in both Chipco 26019 &

Chipco 26 GT). The new formulation is supposed to increase the chemical's ability to knock down active mycelium. In turn, recovery time of the turf will be increased. Work done at other universities has shown that mycelial growth is suppressed within 24 hours. Since this product has activity on both dollar spot and brown patch fungi, it could be implemented into a curative or preventative spray program throughout the summer. Also, work done by myself has shown that it is very effective in tank mixes for management of snow molds.

### Lynx

Whoever is responsible for naming cars must also be responsible for providing names to the chemical industry. Lynx, which I have tested over the past couple years, is a new DMI fungicide that Bayer Corporation hopes to release within the next year or two. Like all the DMI's, Lynx has proven to be very effective for control of dollar spot and brown patch when used preventively. With rates of 0.125-0.25 oz AI/1000 ft sq it will help with reduction of the quantity of pesticides that we should all be striving for.

## THE NEXT BEST THING TO RAIN!

- **Complete Course Design and Installation**
  - turnkey or in-house installation
- **Conversion of manual/hydraulic to electric**
- **Repair, Routine Maintenance & On-site Training**
- **In-house CAD Design & CIT Data on Sprinkler Performance**
- **Installation & Upgrade of Pump Stations**
- **Answers to your "how-to ..." questions**

If you have a goal, we have the leadership ...  
... personalized service you can depend on



**800-554-TORO**  
**(8676)**

Currently, I am evaluating it for the control of snow molds, so be sure to attend one of our TDDL snow mold field days later this spring, and keep an eye out for this product to be released in the near future.

#### Signature

This is the new formulation of Aliette. The chemists at Rhone Poulenc have improved it in such a way that the product enhances the turfgrass quality. From what I was able to persuade from their representative, it actually increases cuticle thickness. It is also known that fosetyl-Al can induce defense mechanisms against fungi within the turfgrass plant, which could result in improved turfgrass quality during stressful periods. Also, like always, this product is still the only true systemic fungicide with both upward and downward movement within the plant.

#### Heritage

Since Heritage has been available for only a year, I guess that we could still consider this a new product. At the GCSAA Convention this year there was a lot of buzz about this product. Having tested it since 1992 I could understand why a lot of the industry is very excited about this product. It isn't everyday that you have a new class of fungicides to choose from. Azoxystrobin, the active ingredient in Heritage, is in the new family of methoxyacrylates. Being the new kid in the family we should see many new sisters and brothers developed in this family. While

Heritage is very active on both Pythium and brown patch, along with many other diseases, it does have the drawback of not controlling dollar spot. Early reports from other researchers who are currently testing other methoxyacrylates is that some have dollar spot control. Another interesting fact is that compared to the DMI fungicides, Heritage is not tied up by the soil particles and has proven very effective in the control of summer patch and take-all patch in my trials at the O. J. Noer Facility and in the trials from other researchers across the country.

#### Other Buzz

If you don't already know, the number of chemical companies has decreased once again. Within the last month Zeneca and ISK Biosciences have merged. This only enforces my Weed Science Professor's prediction that by the turn of the century there will be four major agriculture chemical companies, and the last time I looked we are fairly close to the number with only two years to go.

In the next edition of *The Buzz* I will present information on the Daconils and what makes the new formulations distinct. Additionally, I hope to take a look at what the "Maxx" is all about. If you have a product that you would like me to review, please drop me a line and I will be happy to do some investigative reporting for you. But, as you know I will never find out those trade secrets, and if I did I wouldn't be allowed to publish them without having a bounty placed on my head! ♣

# Look Out Turf Industry!! ...Here Comes...

# Contec<sup>TM</sup> Controlled Release Fertilizer

*Scotts*

## *The Industry Leader Has Done It Again!*

**Michael Semler**

Technical Representative

**Tel: 608-849-1537**

**Fax: 608-849-1538**

**Bruce Schweiger**

Executive Technical Representative

**Tel: 608-756-3912**

**Fax: 608-756-3912**

**Dean Musbach**

Technical Representative

**Tel: 715-356-6444**

**Fax: 715-356-6813**



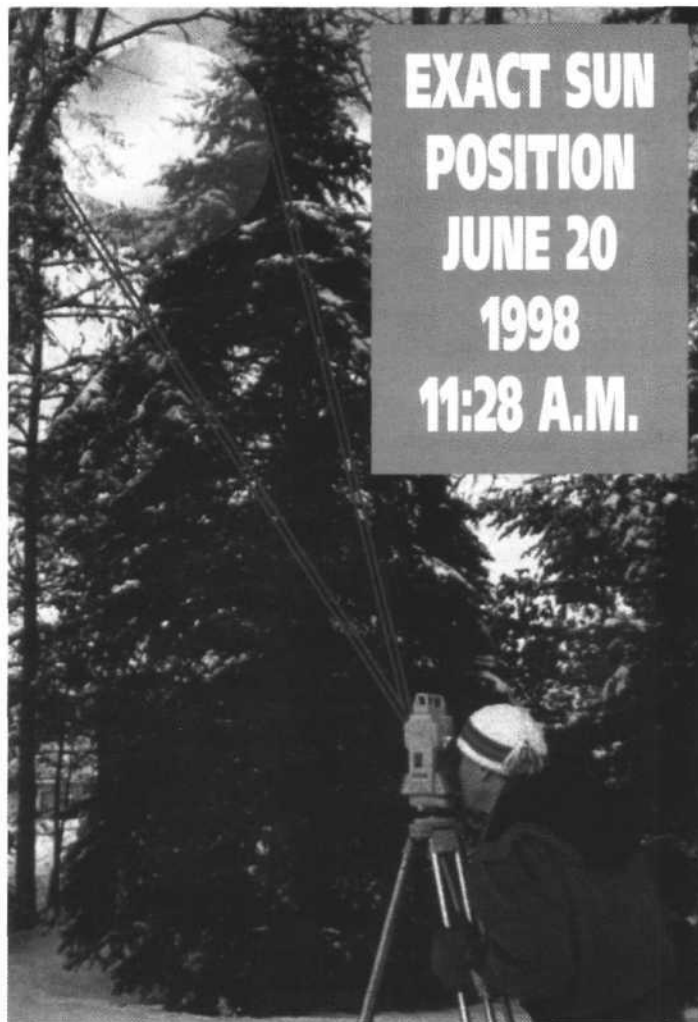
## THE ACE IN THE HOLE: Bringing Sanity to the Greens

By Bob Christensen  
ArborCom Technologies

*Editor's Note: This article deals with a problem many of us face, especially those managing older golf courses — shade. It appeared in the February 1998 issue of ON COURSE, the official publication of the Midwest Association of Golf Course Superintendents, and is presented here with permission from veteran editor Fred Opperman. There is a Wisconsin connection to the story. Both Ron McCarthy, superintendent of Edgewood Valley CC, and Greg Clark, his assistant, are graduates of the University of Wisconsin-Madison turfgrass management program.*

People have had a long-standing love for the game of golf. The attraction of the greens and fairways is irresistible to so many. Walking the course, enjoying the scenery, or making a good score are all part of the draw that keeps so many coming back to the great clubs and courses. There remains, however, an ongoing problem for those who must manage these courses: balancing the aesthetics of many trees with the demanding needs of top-quality turfgrass. Much misunderstanding exists on the parts of those who make critical decisions on golf courses as to the removal and pruning of trees to allow maximum light exposure. This is where the golf course superintendent finds his calling — making trees and golf course turfgrass compatible.

Agronomists have long recognized the importance of light as a key growth factor for a number of plant species and have attempted to maximize its effect, largely for commercial reasons. One group that increasingly finds it difficult to balance the light requirements of plants with the need for trees is golf course superintendents. These skilled professionals find themselves in a challenging situation in attempting to balance the need for trees on golf greens for depth perception for the golfers with the need of the turf on greens to have large, extended amounts of direct sunlight. Many golf courses are placed in heavily wooded areas, and decision-makers at these courses want to retain the existing trees while, at the same time,



New technology allows the consultant to go onto a golf green in January and determine the position of the center of the sun in June within 1/16 in. at 200 ft. from the sun location instruments.

**COUNTRY CLUB OF WISCONSIN  
announces the following items**

### **FOR SALE**

(2) Toro 5100 D Fairway Mowers  
1100 and 1200 hours respectively

*\*Condition Excellent\**

*Call Gordie for details*

**(414) 375-4370**

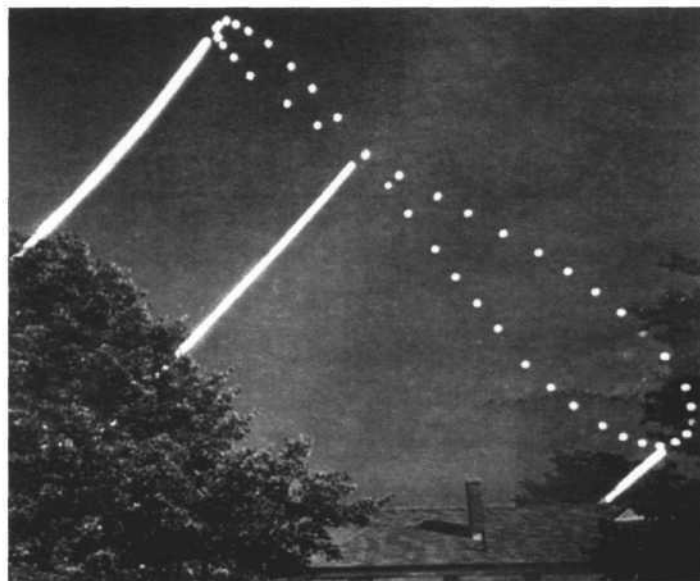
maintaining healthy, vigorous turfgrass. Much of the leaf surface is maintained at a short height making it even more difficult for the greens to gather the required amount of direct sunlight.

The challenge becomes removing only those trees that directly hinder the penetration of light to the green without aesthetically affecting the green or making a major impact on the playability of the course. If we are to prune only those limbs or trees that are blocking the sun, we need to know exactly where the sun is. Though multiple methods have been used through the years, with varying degrees of success, a new technology is making this task into an exact science with a user-friendly, highly applicable tool.

Putting this technology to work can produce impressive results. It minimizes the impact, aesthetically, on the trees involved in many situation, including recreational areas, residential lighting needs, gardening requirements, in addition to golf course needs.

Complex astronomic algorithms take into consideration all of the factors influencing sun position. These algorithms can output exact quadrants that can be translated into a position by a sun location instrument. A computer generates the sun's coordinates in one-minute increments for every day of the year for a given geographic location. These coordinates are computed on site and are recomputed for each individual course. The sun location equipment is then set up in the shadiest portion of the turf area in question. Coordinates for a chosen time and day are entered into the equipment, which then indicates the position of the sun. By imputing multiple dates and times, sunlight and shade patterns can then be computed for various periods throughout the year with equal accuracy.

Edgewood Valley Country Club had five greens and one tee deck where light was believed to be a limiting factor. Ron McCarthy, the club's superintendent, and a USGA consultant identified light as the limiting factor on these areas. Realizing that he needed hard data to make good recommendations, McCarthy hired ArborCom Technologies to do three major tasks. The first task was to show exactly how much light the green and tee decks were getting May through October. The second was to



This is a time-elased photo showing the sun's position throughout the year at 8:30 a.m. It demonstrates the need to take into consideration the sun's position during the growing season.

provide recommendations on how to improve the light so the greens and tees would get eight hours of direct sunlight per day with as much light as possible in the morning. Finally, ArborCom was asked to prepare a presentation that communicated the findings, using digital photos and charts, to the Green Committee so they could approve the removal or pruning of trees, as required, to get more light penetration.

As the one given the responsibility for insuring playable, quality turfgrass and visually pleasing surroundings, McCarthy faced huge communication challenges when he realized that there were certain trees bordering the greens that were blocking an enormous amount of light yet adding little to the course strategically or aesthetically when it came to the light needs of the turfgrass. The main obstacle was, as is so often the case, a great reluctance to remove any trees, or parts thereof, along the golf course. People's affinity with trees is just so strong. Also making things difficult was having to potentially guess, albeit an "educated guess," which trees or limbs to remove. That reduced McCarthy's bargaining power with the Green Committee to the "not very convincing" level.

It was for these reasons Ron McCarthy decided to call in sun location consultants from ArborCom Technologies to utilize their technology to ascertain precisely how much and when light was reaching the trouble spots, thus enabling scientifically-backed recommendations for specific tree removal. Putting the challenges into perspective, McCarthy explained that easily fifty percent of the golfers are not low handicap golfers. As such, they are there to get out of the cities and enjoy the fresh environment of the outdoors. In particular, they enjoy all the trees. To touch the very thing that is attracting the golfers, the club's bread and butter, is really taboo. As such, the benefits gained have to far outweigh the perceived or realized cost to the trees.

Touching this point, McCarthy stated that the light penetration gained is "priceless" to the green. Edgewood spends upwards of \$35,000 annually on tree pruning.

(Continued on page 58)

**TAKE CONTROL**



GET NEW

**NX-PRO**

NX-PRO homogeneous fertilizers combine the same high-quality nitrogen products you've always relied on, plus two new products formulated with Meth-Ex 40™ and Poly-X PRO®. Simply choose the product and nitrogen source that meets your turf's requirements, and NX-PRO will do the rest — from steady green-up and superior control to improved disease resistance and renewed vigor. Whatever the turf, wherever the course, NX-PRO has a product that's right for you.

**Frank Baden**  
Territory Manager  
Bettendorf, IA  
(319) 332-9288

For more information on Lebanon's unparalleled line of NX-PRO control products, contact your local Lebanon Turf Products authorized distributor. Or call 1-800-233-0628.

(Continued from page 57)

ArborCom's recommendations help pinpoint exact needs when doing this pruning. When asked about the Green Committee's initial reaction to the recommendation of removing a number of trees, McCarthy stated that several members were shocked. Sensing this, McCarthy used ArborCom's findings to make a hole-by-hole, tree-by-tree "road map" of the actions needed. He used logical reasoning backed by hard, scientific data. He was able to quantify how much more sunlight would penetrate to the turf, thus making for a superior putting surface. The data enabled the committee to move from the "This guy's crazy!" reaction to one of more acceptance and finally agreement.

The recommendations were used to show where five particularly troubled greens would greatly benefit from

increased light. On one particular hole, the course president stood alongside McCarthy and stated that three-quarters of the membership would never even realize any changes took place to the surrounding trees.

Ron stated that he was actually surprised at some of the trees that were blocking light. ArborCom's consultation demonstrated that some greens' sun windows were being adversely affected by trees two and even three hundred yards away! Again, scientific data proved far more convincing than an "educated guess" when it came time to make pruning recommendations. The scientific report helped McCarthy give the decision-makers of the golf course a working knowledge of the big picture. They started to see where the limited sun windows were and the importance of broadening those windows. It has opened the door for McCarthy to grow healthy, vigorous bentgrass. ♣

## Championship Turf



The Super Bowl Champion Green Bay Packers have improved Lambeau field by installing a new Sports Turf® system to provide the best surface possible. To insure strong, tough turf, the Packers chose fertilizers from **Spring Valley** Turf Products. **Spring Valley** is proud to be the choice of the Packers!



# SPRING VALLEY®

The Fertilizer Choice of the Packers

1-800-635-2123



1830 Executive Drive  
Oconomowoc, WI 53226

Don't let your equipment sit idle while you wait for engine parts! Depending on your needs, we will take care of you direct or help you find your local engine dealer. Let the engine experts help you!

We carry a full parts inventory. Ask for our parts department.



The Source for Power...  
Worldwide™

414-567-8575 or 800-242-2289 (phone)

414-567-2256 or 800-897-8999 (fax)

**HONDA**  
**ENGINES**



**Kubota**

**LOMBARDINI**

# "MAJOR" PREPARATION

## Highlights from the 79th PGA Championship

### August 11-17, 1997

By Josh J.M. LePine, Assistant Superintendent of Golf Courses  
Winged Foot Golf Club, Mamaroneck, NY

"...Now, in 1921 Winged Foot's founders had the site they wanted, with ideal terrain. They had the dream, the goal, and the wherewithal — the financing — to see it through. They had the dedicated drive to keep the standards high, not compromising the perfection they sought. As they looked around for their own architect, they had certain choices and could have gone abroad, but they opted for a great American golf course designed by an American. And now they found their man — one who could bring the dream into reality. After considering several possibilities, they made their choice: Albert Warren Tillinghast of Philadelphia.

[Give us a man-sized course] they said to him. Tillinghast's response was a Herculean achievement..." (Smith, 1984)

The PGA of America rolled into Winged Foot Golf Club in Mamaroneck, NY in the fall of 1995 to begin preparation for the upcoming major golf event. Officials and planners were busy constructing and setting up their offices to serve as



11 West.



Triple row irrigation installation.



18 West green tournament time.

the 79th PGA Championship headquarters.

On the golf course, Mr. Robert U. Alonzi, CGCS and staff were knee deep in preparations of our own. A triple row irrigation system upgrade was in process along with an extensive rough renovation project. I will share with you these and more highlights in the preparation for the 79th PGA Championship hosted at Winged Foot's West Course on August 11-17, 1997.

#### Irrigation System Upgrade

A four year plan to upgrade our irrigation system from single to triple row began in the fall of 1994. The front nine of the championship hosting West Course was finished that fall. Nine holes were completed each fall for the next three years setting the last head on the back nine of the

East Course just before Thanksgiving of 1997. It is obvious that a triple row system would give a superintendent more flexibility and uniform coverage but Mr. Alonzi had more in mind when he proposed the system upgrade to Winged Foot.

Mr. Alonzi's experience as superintendent here for the 1984 U.S. Open championship reminded him of the difficulty of bringing back damaged rough areas and compacted treelines from 30,000 fans a day viewing the action.

Winged Foot's trees are a major focus for our maintenance practices. A triple row system would apply the necessary water to the compacted rootzones of Winged Foot's tree lines to aid in the recovery of the trees as well as the turf under them. Also, a rough renovation project turned out to

(Continued on page 60)

# Steuer

## TURF FARM

Growers of  
'Quality'  
Bluegrass

Mineral & Peat

Pickup or Delivery  
414-425-7767

(Continued from page 59)

be a major success due in part to our new expanded irrigation coverage.

### Rough Renovation

The intense rough you observed during the tournament was a result of proper planning and precise execution. Hole by hole, the rough on the championship hosting West Course was completely renovated from fairway to treeline in the fall of 1995 and 1996. Using growth regulators and scalping down of existing turf was followed by an aggressive aeration and two directional slicing process. Seeding occurred immediately after aeration and between slicing direction changes.

To prevent fairway contamination, dropsreaders were used to seed the intermediate cut adjacent to the fairway. As we nursed the rough with sound irrigation, pest management and fertility programs we were able to have a dense, weed-free stand of turf going into the 1997 season to manipulate into whatever playing conditions the PGA requested. Through the use of exchangeable 180 degree adjustable gear drives we were allowed to irrigate this rough exclusively using the outer rows of the triple row irrigation system. Radios enabled the men in field changing the drives to communicate with Mr. Alonzi operating the central command system. This flexibility allowed us to keep our rough thriving in the summer heat while not applying water to the fairways.

Equipment and cart traffic was minimized as we grew the rough up to the desired height of cut. A combination of a foliar feed and an organic granular application of fertilizer released throughout the tournament were used to provide the eight to ten inches of lush rough. In an effort to mat down the rough, the pros would actually leave the fairway during the practice rounds to walk with their caddies in the landing areas.

### Green Speeds

The greens at Winged Foot have historically been some of the toughest in the world. Toughest to read, putt and maintain. The design, coupled with their management provides extremely hard, fast greens. The condition of the greens the pros played on for the Championship is the almost identical to the greens our members play day to day. The overall management of Winged Foot's greens paral-



18 West: Handmown fairways



els that of tournament preparation all year long. An intense program combining proper mowing, topdressing, rolling, and most importantly, watering, provides tournament greens with elevated green speeds everyday. *Poa* is the predominant species of turf found on the greens and an intense syringe program keeps these plant on the edge all the time. Our syringe program allows us to inspect each green numerous times throughout the day. The Integrated Pest Management program is based on this constant monitoring.

### Hand Mowing Fairways

All twenty-five acres of fairway turf on Winged Foot's West Course were cut in two directions by 22-inch greens mowers set at a half inch. The amount of effort put into hand mowing the fairways was staggering. Weeks before the tournament we were conducting trial runs to see if this was even a possibility. Based on these time trials, course layout, and time of sunrise, we calculated that 30

mowers were needed to cut all 18 holes each day of the tournament. A decision was made that one week before the practice rounds we were going to start "burning in" the lines. After finding the desired angles, left to right and right to left, we chose the middle of the fairway as a starting point. Using flags and paint to mark the ends, a 200-foot rope was stretched as a guide for the first lines. In these early stages of line establishment a maximum of four individuals could be used to cut lines. With the use of wetting agents, morning dew was reduced making it easier to see the same lines day after day. Chelated iron was also applied to highlight the lines.

After a week of trial and error, we had the lines established and were consistently finishing on time, which turned out to be before any tournament play arrived in that section of the golf course. The stage was set and come tournament time we had the system down cold. Equipment breakdowns were a problem but the