GCSAA AFFILIATE

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The newsletter from the Northern Michigan Turf Managers Association

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RECYCLED PAPER

President's Message

Well, believe it or not, we are closing in on the end of another growing season. Once again it's been nothing short of an interesting year regarding the weather and growing conditions.

The end of October brings about final days for some of our dedicated Board members serving the association. It is election time at our October annual membership meeting. Please plan to play golf in the "Tuck Tate Championship", and then vote for our new boardmembers, who will serve the association for the next few years.

President Jeffrey Holmes

The big news, this quarter and this year, is that we finally completed our Chemical Disposal Day. The pick-up day was September 12, 1992, with 14 participants taking part by ridding themselves of old unwanted chemicals. Some of the chemicals that we disposed of were: chlordane, calcium arsenate, lead arsenate, various forms of 2, 4-D, and other unusable products.

This day has been a long time coming, but was well worth the wait. Once we were able to join forces with the Michigan Department of Agriculture, we were able to streamline some of the process.

The disposal Day was supported by several groups and it certainly couldn't have happened without these folks. The various groups are: Michigan Department of Agriculture, Environmental Protection Agency, Michigan State University Cooperative Extension Agents, Tri-Turf, Scotts Pro Turf, United Horticultural Supplies, and certainly the Northern Michigan Turf Managers Association.

My hat is off to all of the groups of people who made this day possible for the participants. We, as responsible people in the green industry, certainly need to be leaders and supporters in these types of programs. Putting old and unusable chemicals in their proper resting place is definitely showing good environmental stewardship and responsibility.

Our next move toward environmental stewardship will be to organize a collection day for recycling plastic chemical containers.

Thanks, once again, to all of our support groups who made the Chemical Disposal Day a reality. Thank you to all participants for bringing in your products to be disposed of.

See you at the October 12th meeting.

Inside This Issue:

1992 NMTMA Meeting Dates

Oct. 12.... Cadillac Country Club

Dec 5 ..... NMTMA/MMTA Christmas Party at Grand Traverse Resort

"Hard Greens, Hard Customers"

By Kathy Antaya

Kathy Antaya

Typically, golfers are enthusiastic about playing a newly opened course. Unfortunately, all too often they complain the greens are "hard" or "won't hold a shot." My first reaction is "Learn how to hit a ball with backspin." But I bite my tongue and instead attempt to educate our customers as to the limitations of new greens. After dealing with this common problem, I have had some success with a few practices that may also work for you.

Personal experience and shop talk indicates three major factors contributing to the legitimate gripe of "hard greens" on new golf courses: 1) high sand content greensmix, 2) lack of thatch/mat development, and 3) minimum irrigation. Most courses built today use at least 70% sand in the greensmix. For whatever reasons, these sandy based greens are less receptive to shots than soil based greens. Low trajectory balls glance off the surface; inertia does not dissipate and the ball "jumps" after hitting the green. The overall advantages of a sandy mix outweigh this drawback so changing greensmix composition is not a viable solution.

Lack of significant thatch/mat development is another common feature of new greens. Thatch acts as a cushion, absorbing the energy of ball impact. A natural layer develops over time. Pushing turf growth with frequent, heavy fertilization will speed up thatch accumulation but with negative side effects: stemmy plants, excessive succulence, increased water requirements, excess fertilizer in the environment, etc.

Another influence could be the minimum irrigation applied to new bentgrass greens. Older *Poa annua* greens require greater amounts of moisture to survive. Even low shots hit by high handicappers will stop on saturated greens.

These factors help explain "hard" greens to our customers, but they don't solve the problem. So what can we do? My best answer is spiking thin solid tines which punch holes through the surface 2-3" deep. Experimentation favored two applications in different directions over one, three or four passes. Late evening worked out because of lack of golfers and environmental stress. Spiking was done two or three times a week and before special events. Our golf professional said complaints were reduced substantially.

Regular use of wetting agents, especially through irrigation injection, is another tool to help "soften" greens. Cautiously pushing turf growth to enhance thatch accumulation can also be tried. Be careful to balance N and K to avoid overly succulent plants.

Most importantly, educate the pro shop staff so they can answer golfers questions and sooth the complaints. These front-liners can be your allies if they know what the problem is and how you are working to alleviate it.

Kathy Antaya

Getting Involved

by Jon D. Maddern

I have been asked occasionally, "Why are you so involved with this organization and the M.T.F.?" The answer is not a simple one, however I feel it is worth explaining.

There are several different reasons:

1. Giving back something for knowledge gained. I have never attended a meeting that I have not picked up something worthwhile, and not always from the guest speaker. Just talking with fellow superintendents and finding out that I'm not the only one with disease or equipment problems, helps me. Plus, in visiting someone else's course, I always find something that is done differently or something that I am not doing that would be an asset to our operation. Just talking with other superintendents and discussing ideas is always worthwhile. Sooner or later we all run into the same old problem or situation and listening to what someone else has tried or done saves re-inventing the wheel and wasting money.

2. Volunteerism - an association is only as good as its' members. And if someone does not do something then the association is worthless. The reward of having helped make something a success is very gratifying. I know right now I am late with this article and I feel very bad for it, because it's no ones fault but mine for not prioritizing it properly. Volunteerism is part of what has made this country so great and it feels good to be a part of it.

3. Friendship - The friends that my family and I have made because of this industry are second to none. These are friends with the same goals and problem and it's nice to know you can always count on them. I was fortunate to be involved with another group of people downstate similar to this association: firefighters. They too were close, caring, and always willing to help in any way. Each person has an added expertise and it is great when you can call them for help.

4. Being involved - I do not like to sit back and have things rammed down my throat, or finding out about things when it is too late. Plus, it is very difficult to stay current on what is happening in the industry without being involved. Because of the previously mentioned items, I have been able to stay current on new regulations, products, practices, methods, equipment, irrigation, etc., which has helped me

(Continued on page four)

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– GCSAA NEWS –

Florida GCSA Sets up Hurricane Relief Fund:

A relief fund for South Florida-area golf course maintenance employees, whose homes were destroyed or damaged by Hurricane Andrew, has been established by the statewide Florida GCSA.

The fund was started with a $1,000.00 donation from the Palm Beach GCSA, and offers of help have also been received from the Carolinas GCSA and the Georgia GCSA.

The South Florida GCSA is responsible for locating those employees hardest git by the storm.

Checks earmarked for the relief fund may be made payable to the FGCSA and mailed to their association office at 1760 Northwest Pine Lake Drive, Stuart, FL 34994. For more information, please call Marie Roberts, Executive Secretary, FGCSA, (407) 692-9349.

Letters to the Editor

You can communicate directly with the NMTMA and your fellow members by writing to:

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Getting Involved

(Continued from page two)

in dealing with my owner, golfers, crew, and fellow members. I'm no expert but I know what affects our industry and you and me. You have to look at the whole picture, not just one side. The old saying "For every action there is an equal and opposite reaction" is not always true if you just sit back and let things happen around you.

5. Understanding Employer - One who understands that by your involvement you are making yourself better, thus can do a better job for them. This does not mean neglecting your duties by any means, but to allow you the time it takes to do these things. And a good crew is also very important.

6. Family - It takes a good family who understands the importance of this involvement and are willing to help. I owe my wife and kids a lot, not only time and understanding but also financially.

After all this I hope you can see the benefits of becoming involved. How do you start? Let a board member or myself know and we will get you on a committee helping out. It may be just making a few phone calls, or taking money at a meeting, or helping set up a meeting. Nothing too difficult or time-consuming, but definitely a big help and a way to meet new people or get to know some people better. I hope you had a great 1992 season and look forward to seeing you at a meeting soon.

Jon D. Maddern

1993 Conference

The program for the 1993 Michigan Turfgrass Conference is being finalized. A reminder that due to the GCSAA conference being earlier, this year's M.T.F. Conference has been moved to Tuesday, January 5th through Thursday, January 7th, 1993. The location is the same Holiday Inn South.

This year we have another great line-up of out-state speakers as well as our MSU staff. Our out-state speakers include:

Dr. Bruce Clark, Rutgers University, Turf Pathology
Dr. Georgia Brian, Iowa State University, Entomology
Dr. Mark Carroll, Univ. of Maryland, Turfgrass Research
Dr. Nick Christian, Iowa St University, Turfgrass Research
Dr. Mike Raupp, Univ. of Maryland, Entomology, IPM
Dr. Vic Gibbeault, Univ. of Cal., Riverside, Turf Research
Dr. Frank Rossi, Univ. of Wisconsin, Turfgrass Research

Other key speakers are:

Ron Dodson, New York Audobon Society
Jim Snow, National Director USGA Greens Section
Bruce Hepner, Architect, Forse Design
Dr. Glenn Duaderar, MSU Fish & Wildlife
Tom King, World Cup Soccer at Pontiac Silverdome
Ed Fredericks, Michigan Department of Labor, Safety Education and Training

This program is being finalized and submitted to the Department of Agriculture for recertification point values. Once this is received It will be mailed out to you with the registration form. I hope this is by October 31, 1992.

A key change to this year is a Golf I and II sessions on Wednesday afternoon, to repeat key talks. This is because of room sizing and problems we had last year with people not being able to hear or see the key talks.

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Training Makes the Difference

By Tom Doppell

In the 1990's, we have heard a lot about pesticide exposure and how to minimize the risk to employees and others who may come in contact with the pesticides. A recent study at the University of Guelph in Ontario, Canada, looked at the entire spectrum of exposure to pesticides and reported some very interesting results. In a nutshell, everything we have believed as true was verified, but let's look a little closer at some of the information we now have.

The study looked at 2, 4-D exposure by professional applicators. The total exposure was measured, that is, how much 2, 4-D these people handled and then how much 2, 4-D was excreted from their bodies over a period of time. Since 2, 4-D and other pheonoxy herbicides are such a hot topic with so many people today, this presents some good information with which you should become familiar.

The results found no correlation between how much 2, 4-D was handled and how much was excreted. In fact, the person who was the loader/mixer at the firm actually had a lower excrement level than some of the applicators. The applicators themselves had all different levels of excrements when they were exposed to virtually the same amount of 2, 4-D.

So what makes the difference? Very simply, it came down to the care taken by the person handling the pesticide. The mixer/loader understood, apparently, that he was handling a more concentrated material and, therefore, was more cautious. The applicators had varying levels of exposure. Rolling up hoses with bare hands, not using boots or long pants, all increased the amount of 2, 4-D excreted by the applicator. This information backs up a study done at Michigan State University several years ago that showed proper uniforms decrease overall exposure dramatically.

Another aspect of this study looked at exposure to the sprayed turf or who were bystanders to the application. Certainly, these are concerns for everyone who applies pesticides on golf courses. The bystanders had no measurable exposure for 96 hours after the application; and of the persons who walked on the turf, the only ones who had a measurable response were those in bare feet and shorts who sat on the turf within an hour of the application. Even so, the excrement was below any World Health Association acceptable daily intake levels. The good news here is that if people are wearing shoes (and most of our players do!), then their potential for exposure is exceedingly low, if not nil.

The bottom line from this study is that proper training does make a difference. Any time spent teaching our applicators and other employees about the proper use of pesticides and waiting until the applications dry before coming in contact with the turfgrass, will pay big dividends in employee health and safety. One word of warning: Don't assume that your long-term employees don't need the reminders! The MSU study indicated that it was the more experienced applicators who were a bit more careless and had higher levels of exposure. All employees need constant encouragement to work safely and to use the proper safety equipment. As the superintendent, it is your job to be sure they follow the directions.

Credit: A Patch of Green, August 1992

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Computer Use in Golf Course Management

by Marc P. Davison, Golf Course Superintendent, Blackwolf Run Golf Course

Computers are very much a part of our everyday life today and without question will continue to be more so in the future.

Computers are being used everywhere you look: the weathermen use them with their forecasts; engineers use them to aid in designing structures; pro shop personnel use them to record member's scores and then produce their handicaps.

Computers are very powerful machines, in fact, far too powerful for most of us to conceive. These powerful machines are now becoming useful in the turfgrass industry. We see them used in controlling pump stations and irrigation cycles, disease prediction, monitors on sprayers, record keeping and electronic bulletin board networks, to name a few. We also have the capability of retrieving information from the Michigan State Library Turfgrass Information File through the use of our computer.

These were some of the uses I found while researching the potentials of having a computer in my office. In the meantime, our pro shop purchased a tee-time reservation software system which forced them to buy three new computers.

The hospitality division at the Kohler Company also implemented a network system that links all of our businesses together via telephone lines and computers. Through the development of this large network system, many other computers were purchased and I was fortunate enough to receive a computer as part of this expansion.

When I first saw this new computer in my office, my initial reaction was, "Now I have a computer, how do I use it?" Fortunately my computer was equipped with a hard drive which basically eliminates the use of disks. Included in the hard drive were four software programs: D-Base, Lotus 1,2,3, WordPerfect, and ProComm.

The next step was to learn how these programs could benefit my department. Each of these programs has a specific function: D-Base is a database file system; Lotus 1,2,3 is a spreadsheet program; WordPerfect is a word processing program; and ProComm is a telecommunication program needed if a modem is used.

Lotus: Lotus 1,2,3 was the first program I worked with; it truly fascinated me. This program deals strictly with numbers and number operations. Its format consists of columns and rows, commonly called a spreadsheet. I have found this program to be very useful in budget preparations, recording of weekly man-hours, keeping monthly records on individual accounts, chemical price quotes, monthly labor expense projections and capital equipment replacement schedules.

Labor comprises about half of my operating budget. Thus, when it comes time to reduce the budget, labor is the most scrutinized account. Lotus is perfect for adjusting my labor account. I received a program from my accountant that deals strictly with labor budgeting. The file is broken down into monthly columns. The rows consist of adjustable factors such as average wage, head count and average hours worked per week. The program is set up to automatically multiply the previously mentioned three factors to produce a monthly labor amount. By adjusting any one of the three, the totals automatically change. Once the spreadsheet is set up, making the adjustments is simple and the results are produced instantly.

Projecting capital equipment replacement is another area where Lotus can be very helpful. I created a spreadsheet to help me lay out a five year replacement program. Listed in the left margin, or Column A, are the primary pieces used and also replaced on a regular basis: utility vehicles, sand trap rakes, green mowers, fairway mowers, etc.

Column B contains the 1992 price for each piece of equipment. Column C shows the number of pieces of each type of equipment in our fleet and Column D is the expected life of each piece.

For the five year projection, I use two columns for each year. One column for the required number of units (Column E) to be replaced in a given year and the second (Column F) to show the cost.

Column F is a mathematical operation; it takes the number of units required from column E and multiplies by the 1992 price found in Column B.

For the year 1993, I built in a 5% inflation factor. So the 1992 price of a piece of equipment is multiplied by 105% and then multiplied by the number of pieces being requested in 1993. The inflation is increased by 5% each

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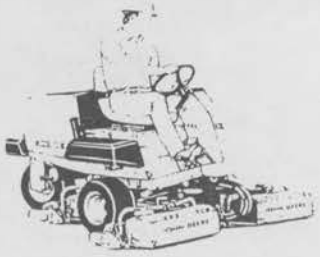

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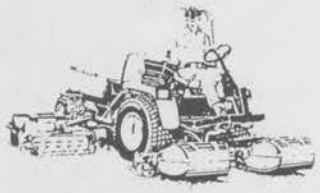

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Computer Use in Golf Course Management. . .

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year; i.e., 1994 is equal to 1992 price times 110%.

The columns are then totaled for each year to give an annual equipment replacement cost projection. This has proven to be very beneficial as capital dollars are always being adjusted. I can easily work backwards from a target figure or show how I need a certain amount due to life expectancy and the numbers that we operate with.

In addition to the examples listed above, Lotus is capable of calculating more in-depth, involved functions. It can average, sort, round-off, format and graph figures. Numbers in a spreadsheet can easily be converted into a line, bar or pie graph.

D-Base: The second program I dove into was D-Base. The main function of D-Base is to compile and extract data in various fashions. Some of the data base files that I have developed using D-Base are an employee File, an Equipment File, and a Hazardous Materials File.

The Employee File contains a complete history of each employee working in my department. Included are the names, addresses, phone numbers, clock numbers, date hired, classification, which course they work on, wage, date of last pay raise, amount of last pay raise, training received, and any disciplinary notices. After all of this information has been entered, it can be pulled out in almost any format. Some examples of how information might be pulled from the file are: a list of all employees earning between $5.00 and $5.25 per hour; a list of all employees hired in 1991; a list of all employees and phone numbers; or a list of all employees who have had hazardous materials training.

Another database file I have developed is an Equipment File. In this file I have all the equipment stored in our building listed with date purchased, purchase price, vendor, serial number, Kohler asset number, type of fuel used, the department equipment is owned by, maintenance records, and dollars spent repairing each piece of equipment. By entering a few commands, information such as a list of all Toro equipment, all 1989 Club Cars, or all Jacobsen equipment purchased in 1991, costing between $5,000 and $10,000 and using diesel fuel can be extracted.

The most recent database file we developed consists of all the hazardous materials in our maintenance building. We started this file to aid in the development of our hazardous communication program. The information stored in this file on each hazardous file includes: common name, trade name, type of material (fungicide, fertilizer, oil, fuel, cleaner, etc.), location of material (mechanic's shop, broom closet, etc.), department that purchased material, quantity on hand, MSDS on file yes or no, and where to find MSDS in our Hazardous Communication Book.

Having this information in the computer allows us to keep an up-to-date file on all the hazardous materials found in our maintenance building. When a new product is purchased it will be entered into this file. We then have the capability of printing out a complete list of all our hazardous materials or, more specifically, all hazardous materials used by the janitor or mechanic. Hazardous communication books have been developed for each area in our building that houses these materials: i.e., pesticide room, fertilizer room, mechanic's shop, etc. The first page of each book is a listing of all hazardous materials found in the area that the book is located.

The list includes commonly used name, trade name, and a location where to find the MSDS of each item within the book. As products are added or deleted, this list can easily be updated on the computer and a new list printed out and placed in our Hazardous Communication Book.

Following this list in each book is a copy of our Hazardous Communications Program, which we keep in our word processing program, and the third section includes all the MSDSs for products listed on page one.

Databases are wonderful filing systems. They allow you to retrieve information readily and in a variety of ways. They are not that difficult to use and I am sure I will find many other ways to use mine in the future.

Word Processing: Word processing is probably used more than any other type of computer program around. Word processing and the computer have replaced the old-fashioned typewriter.

Typing with the use of a word processor can make a typist out of anyone. Mistakes are easily corrected by back spacing and making the corrections. Margins are easily set through the use of a few simple commands. Complete paragraphs can be moved to another location within a document, to another document, or erased.

After completing a letter, paper, etc., a great feature known as a *spell checker* can be used. This scans through

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Computer Use in Golf Course Management . . .

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your paper, stopping at any words not in its dictionary and offering alternatives. Many word processors also have Thesauruses, Grammar Checkers, and Style Checkers.

Through the use of a word processing program, an article such as this can be typed at home and then taken into your office to finish off. Once the article is finished it can be sent to Monroe Miller on a disk who can then load it onto his computer and edit and correct it as much as he likes.

Word processing is also used to type form letters. From a list of names and addresses, a single letter can be personalized to every person on the list. Mailing labels can also be generated from the same list.

Modems: Computers have the ability to communicate with other computers through the phone lines and a small device called a modem. A telecommunications program, one of which is ProComm, is necessary to operate a modem. Modems convert digital computer information into analog information that can be transferred over the phone lines. This allows the already powerful personal computer to link up to other computers and have access to much more information.

Modems provide a convenience which allows the user to access information from a distant location. Computer controlled irrigation systems can be accessed from your home through the use of modems. Salesmen are able to hook into their company's database via their modem and a laptop portable computer.

There are many services available to us through the use of a computer and a modem. Weather Brief, TurfByte, and the Turfgrass Information File (TGIF) are three of the services I benefit from through the use of my modem.

Weather services around the country are available to supply a large variety of weather data to us. I subscribe to a service in Salt Lake City, Utah, called Weather Brief. The initial cost to purchase the program is $35.00. A charge of $.20 per minute while connected seems minimal since I spent only about $25.00 on it last year. The long distance calls are additional, though. Depending on the type and amount of data requested, most of my requests are downloaded in a minute or two.

Every morning during the golf season I call Weather Brief to get the day's forecast and a five day forecast for zone 13, which is Sheboygen County, Wisconsin. If rain is predicted I will also request a radar map of the Midwest to see where the precipitation is and how large of an area is being affected.

The day's forecast is then duplicated and a copy faxed or delivered to the pro shop for any golfers that may call or stop in and ask about the weather forecast. This has proven to be very beneficial for our pro shop staff.

The information and detail available through Weather Brief is phenomenal. There are 26 different selection topics available. Following are a few of the topics subscribers can choose from: 5, 15, 30 and 90 day forecasts, radar maps including current, 12, 24, 36 and 48 hours ago, which is helpful when monitoring storm history; severe weather alerts and warnings; soil temperature maps; wind forecast maps at various altitudes; selected major interstate highway weather forecasts, which gives a brief forecast for all the major cities a selected interstate passes through; satellite pictures which include jet streams, high and low pressure areas, and frontal locations can be viewed on you computer screen and printed out.

After selecting a topic you wish data on, you are asked to be specific on the area of interest. National maps are available with topics. Some offer details for portions of the country such as north central, north east, etc., and others will ask for a specific state and then a specific zone within the state. The service truly is remarkable, very useful, and affordable.

TurfByte, a bulletin board system for turf professionals, is another useful tool available to us through a modem. The bulletin board is operated in Lawrence, Kansas, and operated by superintendent Duane Patton.

This is a great way to communicate with other turfgrass professionals around the country and the only cost is a long distance telephone call to Kansas. Messages can be written off-line and then transferred into the bulletin board when connected, saving you connect time. Messages can also be downloaded into a file and then read at your leisure, again minimizing the amount of time you are connected.

New ideas, questions, comments, surveys or just casual conversation goes on every day in TurfByte. An abundance of good information passes through the bulletin board which anyone can gain from just by reading the messages. I try to call at least once a week and download the messages since I was last connected. I feel this is a valuable service.

Turfgrass Information File (TGIF), located in the Library at Michigan State University, is yet another tool available to turf managers through a modem. Calling the library via your computer is the fastest way to access the turfgrass file; however, information is also available by calling the library on a standard telephone. Whichever way you get it, almost all the information ever written on turf is available to you. When calling via computer, it's like having the card catalog at your fingertips. Information can be requested on a specific subject or by a specific author. Completes articles are not available, but abstracts are, and they can be downloaded into your computer. There is an annual subscription fee of $75.00 per year to use this service.

Computers can benefit you as a turfgrass professional. Computer use is everywhere and growing. Just last week I ordered a program called Qqest for our mechanical repairs department. It will keep all the repair parts inventoried and remove them from inventory as they are used. Preventative maintenance schedules also pop up when they are due.

Having only been involved with computers for a year, I am surprised at all the uses I have found for them that greatly assist me at the golf course. It's already hard for me to imagine doing my job without the assistance of such a tremendous tool as the COMPUTER.

Reprinted with permission from THE GRASS ROOTS

An 'Environmentally Sensitive' Approach to Golf Courses

The 1990s have been labeled the "Decade of the Environment." This prompts many landscape managers - golf course superintendents in particular - to evaluate (or re-evaluate) their impact on the environment.

There is a movement afoot (spurred by the golfing industry, its clientele, and 'environmentalists') for new golf courses to be environmentally sensitive, and for existing golf courses to embrace some of the same concepts.

John's Island West Golf Course in Vero Beach, Florida was designed by Tom Fazio to be such a course. Dr. John Fitzpatrick, executive director of the Archbold Biological Station near Lake Placid, Florida, is an ardent fan of John's Island West.

"The property is one of the rarest habitats in North America," he told *The Florida Green* magazine. "Every square meter is precious to wildlife. There is a fairly large number of endangered species, and it is now a permanent habitat preserve that also provides recreation and beauty."

Loads of wildlife - Wolf Run Golf Club in Zionsville, IN is also a haven for various forms of wildlife, particularly birds.

Wolf Run features bluebird houses and duck feeding programs. Its owner, Dr. Jack Leer, will not allow maintenance crews to remove selected dead trees because they provide nesting areas for certain indigenous species of owls.

Another of Wolf Run's environmentally sensitive plans is to incorporate as much tall unmowed grass as possible. These grasses serve as nesting places for wildlife.

"We've got a lot of unmowed fine-leaf fescue blend that provides 30 to 40 acres of prairie-type long grasses," says superintendent Joe Kosoglov. "The place is just loaded with birds, squirrels and snakes - even though I'm not thrilled with the snakes."

The course was grassed in the fall of 1988. "We actually do have sections of the property that were untouched during development," Kosoglov notes.

And Wolf Run's unique look is gaining some attention from local landscapers who want to pick up tips on how to integrate such programs into residential and commercial landscapes.

"I've had a pretty steady stream of landscapers check out the long unmowed fescues," Kosoglov admits. "I've got a feeling they'll be using them on slopes and unmowed areas. I've worked with some of the landscapers, and we've developed pretty good relationships."

The Audobon program - "The New York State Audobon Society has a program to register properties," says Kosoglov, "One of the types of properties they want to get registered is golf courses.

"They provide information on how to improve the properties for birds. We've enacted a few (of the programs), but not as many as we'd like."

The Audobon Cooperative Sanctuary System works like this, according the the society's staff ecologist Jean McKay: for a $100.00 fee, a participating golf course is asked to fill out a "wildlife inventory." The Audobon Society then sends the course a written report with suggestions about how it can take specific steps to attract and preserve wildlife.

"Some courses are already doing wonderful things," says McKay. "But they still sign up and we can tell them how to enhance their existing programs."

The sanctuary registration system began in 1990. More than 400 golf courses are already participating.

For more information, write or phone the Audobon Society of New York State, Inc. at: Hollyhock Hollow Sanctuary, Route 2, Box 131, Selkirk, NY 12158; (518) 767-9051.

Long grasses - David Stone at the Honors Course in Oolteway, TN uses broomsedge, weeping lovegrass, lespedezia and tall fescue between greens, tees and landing areas. Native shrubs and tall grasses border the roughs, streams and pond shorelines for bird nesting.

"Our course looks different from one season to the next, and that adds interest," Stone says.

An avid naturalist, the Honor Course's superintendent developed several programs to help identify, monitor and encourage a variety of wildlife species using the course's environment. Not surprisingly, The Honors Course was recognized in 1991 by the USGA for its conservation and preservation activities, the first course so honored.

Ugly weeds in the tall grass are mechanically removed by chopping. Stone also uses a Bushhog on different parts of the course at different times of the year.

"Brush piles are great places for rabbits to hide," Stone says. "But there is a fire hazard."

Birds also play an important role in the course's "environmentally sensitive" approach. Stone and his crew raised 11 birds in three years; eight still survive.

The wetland question - another environmental question mark that could face superintendents in the future is preserving freshwater wetlands. According to a report by the GCSAA, "protection of wetlands and other valuable aquatic habitat has became an important part of golf course management."

The GCSAA's position statement says: "Wetlands act as both a sponge and a filter to provide a built-in water quality maintenance system. Golf courses also benefit wetlands. . . by providing large recharge areas that help supply wetlands with much needed water. . .and provide secondary filtration to purify water entering wetlands."

Says GCSAA government relations manager Don Bretthauer: "In some cases, golf courses are creating wetlands. It's a give and take type thing: take away wetlands, give some back. It's then the superintendent's responsibility to preserve the wetland."

Embracing the virtues - Golf course superintendents and landscape/lawn care companies alike argue that they, like their detractors, are also "environmentalists."

Golf course architect Pete Dye may have pointed the way for his colleagues when he used 15 miles of underground pipe in the design of the Ocean Course at Kiawah Island, S.C. The drain system picks up 300,000 gallons of freshwater every day, Dye says - "50 percent of the water that we need to irrigate the golf course."

As the courses and landscapes of the '90s are designed, more and more are embracing the virtues of being "environmentally sensitive."

Reprinted from the June 1992 issue of Landscape Management & IGCSA Newsletter

Dinah Shore selected for Old Tom Award

Ask 10 people what accounts for Dinah Shore's very special place in the hearts of countless fans around the world, and chances are you'll get 10 entirely different answers.

Dinah is a popular entertainer, a singer with nine gold albums, a national talk show hostess, an expert golfer, a top-selling author, a tireless humanitarian. She is all of these - and more - which is why she is a not only a favorite among audiences and critics alike, but also a genuine role model to millions.

Most importantly, Dinah is as beloved among her friends as she is among her fans. The woman they know and love away from the spotlights is just as warm, gregarious, honest and unpretentious as the famed show business figure. For all of her long-standing and ongoing success in so many diverse arenas, perhaps Dinah's greatest achievement is having attained that success without losing sight of who she is or what she believes in.

Added to her numerous professional and societal activities are her "starring" role in the annual Nabisco Dinah Shore Golf Tournament and her strong relationships with the tournament's major charities.

Now Dinah Shore has been selected to receive GCSAA's highest honor, the Old Tom Morris Award.

The award will be presented Jan. 30, during the Annual Banquet closing GCSAA's Conference and Show. LPGA champion and golf legend Patty Berg will present the award to Ms. Shore. When Ms. Berg received her Old Tom Award in 1986, it was presented by her good friend, Dinah Shore. This time the two long-time friends will switch places.

"Dinah Shore's name is synonymous with the great names in golf, like Crosby and Hope," says GCSAA President William R. Roberts, CGCS. "Her contributions to the LPGA and golf in general make her a perfect addition to the illustrious group of Old Tom honorees."

The respected annual Nabisco Dinah Shore Tournament just celebrated its 21st anniversary (it started out as the Colgate Dinah Shore). Designated a "major" by the LPGA in 1983, the tournament is the first leg in the grand slam of women's golf (followed by the Women's US Open, the du Maurier Classic and the LPGA Championship).

Ms. Shore works very closely with her tournament's major charities, the Desert Hospital, The United Way of the Desert and the Boys' and Girls' Club of Palm Springs.

She often donates the proceeds of her concerts to organizations such as the March of Dimes and Junior Achievement. She is also a founder of the National Board of Congressional Awards for young people, a national board member of Junior Achievement, and a key participant in the National Leaders Conference. She has been honored with the USO Medallion Award, the Juvenile Diabetes Foundation's Woman of the Year Award and the Ben Gurion University Lifetime Achievement Award.

Often referred to as golf's first lady, Ms. Shore was the first woman to be honored with the Entertainer of the Year Award from the President's Council on Physical Fitness and Sports.

In 1977, she was made an honorary member of the LPGA. In 1985, she received the LPGA's Patty Berg Award for outstanding contributions to women's golf.

GCSAA established the Old Tom Morris Award in 1982 to recognize individuals who have made outstanding lifetime contributions to the game.

Reprinted from August 1992 GCSAA Newsline

Johnny Bench to keynote Anaheim

Hall-of-Fame catcher Johnny Bench will keynote the 1993 GCSAA Conference and Show in Anaheim. Bench will speak during the Opening Session which is scheduled at 5:30 p.m. on Tuesday, January 26.

A long time catcher for the Cincinnati Reds, Bench was elected to the Baseball Hall of Fame in 1989. He was National League Rookie of the Year (1968), National League Most Valuable Player (1970 and 1972), World Series MVP (1976), 14-time All-Star and a 10-time Gold Glove winner. In 1980, Bench set a major-league endurance record by catching 100 or more games for 13 consecutive seasons.

Since retiring form the game, Bench has spent eight years with CBS radio, broadcasting the National Game of the Week, the All-Star Game, the League Championship Series and the World Series. He has also worked Reds baseball on television, doing pre-game specials related to that coverage, and he co-hosts a daily radio show that comments on baseball. He has also hosted a wide range of television shows, including "The Baseball Bunch," an Emmy Award-winning instructional show.

Last year, he began hosting "Golf in Paradise," a half-hour show featuring the world's best golf resorts, celebrity guests and golf instructional tips. Thirteen half-hour segments have already been produced, and thirteen more will be produced this year. The series airs on Prime Cable Network.

Bench works with the American Heart Association, The American Cancer Society, Hike for the Handicapped, the Kidney Foundation and the Muscular Dystrophy Association. He also supports Public Television, the Cincinnati Symphony, the Museum of Science and Industry, and the Johnny Bench Scholarship Fund, which aids Cincinnati college students.

Reprinted from GCSAA Newsline

Change of Address, Membership Application info available

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Supreme Court Rules State 'Took' Land

The government must compensate private property owners whose land value is decreased as a result of government regulation, the U.S. Supreme Court ruled.

By a 6-2 vote, the justices said that when a state regulation effectively eliminates the entire value of private real estate, the state is obliged to pay property owners for their losses. The case could be liberally applied to companies and individuals whose land is subject to environmental or safety regulations, both of which include golf courses.

Compensation is due a property owner even if a regulation blocking development addresses a "serious public harm," the high court said.

The court ruled in this case that a South Carolina law regulating construction on its environmentally sensitive shoreline could be considered the equivalent of physically occupying or confiscating the land.

A state agency had barred the construction of two houses on the land under a 1980 environmental law. The owner sued, saying the regulation denied him all "economically viable use" of the land.

Credit: GCSAA Government Relations Briefing, August 1992

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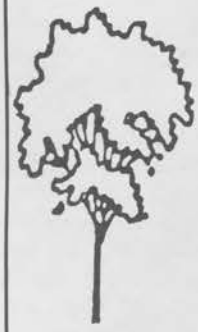

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The Biology and Control of Localized Dry Spots on Sand Greens

By Robert A. Hudson, Ph.D. and Karl Danneberger, Ph.D., Department of Agronomy, Ohio State University

Hydrophobic (non-wettable) soils occurring on bentgrass sand greens constructed to USGA specifications have been previously described and partially characterized. These areas, which resist wetting, have been termed localized dry spots (LDS). The LDS syndrome starts with the turf turning a blue-green color followed by a loss of turgor and finally shoot die-back. The symptoms observed are usually in irregularly shaped patches of variable size. Frog-eye patches, characteristic of some patch diseases, have been observed, but aren't dominant.

Symptoms are most severe in hot, dry weather. Lower temperatures and adequate water will result in regrowth of the shoot system of plants that survive. Management practices for the control of LDS are inconsistent at best, yet the following practices have aided in reducing symptom severity. Topdressing with sand that contains a minimal amount of fine particles. As will be discussed later, small particles (especially in the silt-clay size) may tend to aggravate the problem over time. Repeated core cultivation, especially in the spring and fall, has helped reduce the severity of LDS. Wetting agents, which reduce the surface tension of the water, have given some degree of control for LDS, but are best used in a preventative program. Syringing of the greens may be used as a stop-gap measure, but primarily serve to lower the canopy temperature and rarely will alleviate symptoms. Frequently, various combinations of the above strategies are necessary, and a trial and error type of approach is needed to achieve adequate control of LDS.

Previous studies have shown an organic coating is present on sand grains associated with LDS and removal of the coating yields substances with an infrared (IR) spectra characteristic of fulvic acids. Fulvic acids are a diverse group of large molecules, common in most soils, that are extractable in solutions with a high pH and do not precipitate when the pH is lowered to approximately 1 or below. Previous studies did not include an extraction of wettable soil from bentgrass sand greens, and so it could not be determined if the fulvic acid associated with LDS was unique compared to those in the wettable areas.

Studies were conducted at Ohio State University from 1989 through 1991 to provide a more complete characterization of the organic matter and soil characteristics associated with LDS, and included samples from wettable areas for comparative purposes. First, several common classes of soil organic matter were quantified and analyzed structurally using several techniques. Structural analyses of lipids (compounds that are similar to oils) were accomplished by gas chromatography/mass spectroscopy (GC/MS) and the large molecules that were extracted in alkaline solution, i.e. fulvic and humic acids, were analyzed by IR and nuclear magnetic resonance (NMR) spectroscopy. Second, particle size distributions were determined and the extent of non-wettability determined for each size range. While particle size distributions have been determined in previous studies, there were no reports of which fractions were the most hydrophobic, if any. Also, the area in the soil profile that displayed the most hydrophobicity was determined using soil columns collected from greens with LDS, allowed to dry down, re-wetted from the bottom, and the distance that was infiltrated recorded at one and two minutes. Finally, since bentgrass roots have been reported to be colonized by various fungi, both pathogenic and non-pathogenic, roots associated from wettable and non-wettable areas were stained and examined for the extent of fungal colonization present.

Results obtained from the organic matter extraction and analysis indicated that LDS soils had greater amounts of all organic matter fractions studied than soils that were wettable. The only structural difference observed was from LDS that occurred on greens that were three years old, and this was only detected following an initial extraction with methanol. It appears that there is either a unique structure, or interaction between several structures, occurring in the LDS sample. One possible scenario to explain these results is that a unique structure or structures act to "prime" the LDS areas, and then the syndrome is intensified by subsequent drying cycles, which after several years may mask the unique component that initiated the LDS. The origin of the organic compounds could not be determined, but it is probably derived from bentgrass roots, soil microflora, or both.

Particle size distribution analysis showed no significant differences between the wettable and non-wettable soils. Hydrophobicity, as determined by how long it took a water drop to penetrate the sample, indicated that particles less than .25 mm in size were the most hydrophobic. Since the greens are constructed with 85-90% sand this size fraction has been largely ignored in previous studies on LDS, but since this is the most chemically reactive fraction, due to the presence of clays, it would not be surprising that this is where organic-inorganic interactions would be the most prevalent. The hydrophobicity was the greatest in the area immediately below the thatch-soil interface. This is the area in the soil profile with the most biological activity, especially in regards to root colonization and thatch degradation. Electron photographs of soil particles that were approximately 0.1 mm in diameter showed that the particles in LDS samples had an extensive organic coating compared to particles from wettable soils.

Results from these studies indicate that the role of the bentgrass root system, and associated microflora, on the development of LDS should be investigated in more detail. Previous studies have attempted to characterize the chemical and physical properties of LDS soils, but the impact of biological influences on its development cannot be ignored.

Credit: ICGSA Newsletter

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Handling Pesticides Responsibly

Pesticides are valuable to any integrated pest management program. However, responsibility goes hand -in-hand with the benefits of pesticide use.

As a golf course superintendent, you need to protect yourself, your workers, your players, and your community from possible injury. The way to do this is to know all there is to know all precautions to take when applying chemicals and require safe application procedures.

Accidents will happen, but many accidents are avoidable. Most accidents result from careless practices or lack of knowledge about safe pesticide handling. Pesticides have four routes of exposure:

• ***The Mouth.*** Pesticides can come in contact with your mouth from your hands, food eaten with unwashed hands, cigarettes or other tobacco products, or splashes of pesticide.

• ***The Skin.*** Your skin can be exposed when you handle and open pesticide packages, adjust sprayer nozzles, contact spray mist, touch pesticide spills or broken hoses, wear pesticide-contaminated clothing or fail to wear adequate protective clothing and equipment.

• ***The Eyes.*** If you are not wearing eye protection, pesticides can get into your eyes from accidental splashes, pesticide blowing in the wind, or your hands if you rub your eyes without washing your hands first.

• ***The Lungs.*** Without protective equipment, pesticides can enter your lungs from inhaling fumes, dust or fine mist, from prolonged exposure to pesticides in poorly ventilated areas, from reentering a pesticide-treated area too soon, or from using inadequate equipment.

PROTECTING YOUR BODY

You can help prevent pesticide exposure by wearing the right clothing and using the correct equipment. Follow all directions and precautions that appear on product labels.

Make sure all your employees understand what they should be wearing. Require them to wear protective equipment whenever they are handling pesticides.

The following are various items of protective clothing and equipment you should consider for yourself and your employees who will be handling pesticides.

• ***Body Covering.*** Always cover as much skin as possible with long-sleeved coveralls, shirts or pants. They should be clean, dry, and free of holes and tears. Collars and cuffs should fit snugly when you fasten them.

• ***Gloves.*** Liquid-proof neoprene gloves are recommended for handling liquid pesticides. The gloves should be long enough to protect your wrists. However, they should not be lined with fabric because fabric can absorb chemicals. Keep sleeves outside of your gloves to help prevent chemicals from seeping down inside your gloves..

• ***Hat.*** A wide-brimmed hat will protect your neck, eyes, mouth and face. You also can attach a protective hood that attaches to special coveralls. The hat should not have a cloth or leather sweatband. Consider a plastic, liquid-proof hard hat that's cool in hot weather.

• ***Boots or Shoes.*** Neoprene boots are recommended when you handle large quantities of pesticides because canvas, cloth or leather shoes can absorb pesticides. Sturdy shoes and socks are sufficient for some lighter applications. Wear pant leg outside to keep pesticides from seeping into your boots or shoes.

• ***Apron.*** It's a good idea to wear a rubber apron when mixing and handling liquid pesticides. It gives you a lot of protection against spills, container leaks and broken hoses.

• ***Goggles or Face Shield.*** Wear eye protection anytime there is any chance of pesticides getting in your eyes. Eye protection is an absolute if you are mixing pesticides marked *Warning* or *Danger*. If you wear prescription glasses, use a face shield.

• ***Respirator.*** A dust mask is no substitute for a proper respirator. There are several types of acceptable respirators, with cartridge and canister types being the most common. Choose the correct respirator for the types of jobs that you are doing. Be sure the respirator is approved for pesticide use and that it fits the applicator. Keep the respirator clean and change filters regularly. Respirators may feel uncomfortable, but they're good insurance.

PESTICIDE HANDLING PRECAUTIONS

Make safety part of your regular routine. Train your employees to follow safe practices. Don't let new hires handle pesticides until you are sure they understand and will follow correct procedures.

The following are some special precautions you should consider making part of the routine procedure.

- What you wear to handle pesticides should be used for this purpose only.
- If your clothing becomes contaminated, change immediately. Don't wait until you've finished the job.
- Always wear neoprene gloves when you handle and rinse contaminated clothing.
- Wash clothing and protective equipment daily. Always wear clean clothes each day.
- Empty all pockets of any pesticide granules outside.
- Keep contaminated clothing in containers separate from all other laundry and always wash contaminated clothing separately.
- Test gloves for leaks by filling them with water and gently squeezing. If you find leaks, get a new pair of gloves.

TAKING CARE OF SPILLS

Despite the best precautions, accidents do happen. Make sure your employees understand how to handle a pesticide emergency. Post lists of emergency procedures in easy-to-find locations. Keep a copy of procedure in all trucks.

The first thing to do in a pesticide emergency is don't panic. Call the local fire department and state pesticide authorities immediately. Seek first aid for anyone injured. Try to contain spills by using a chemical spill absorbent. Keep people away from the area.

Chemtrec (Chemical Transportation Emergency Center) has a toll-free number (800-424-9300) that you can call day or night for help in chemical emergencies involving spills, leaks, fires or explosions.

The responsibility you and your employees show helping to prevent accidents and handling any problems that do arise will have a direct effect on how you are perceived in the community. A well-prepared staff will reflect well on you and the pesticide application industry.

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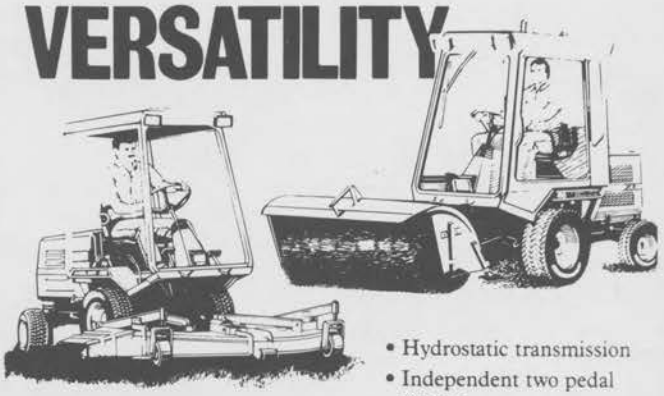

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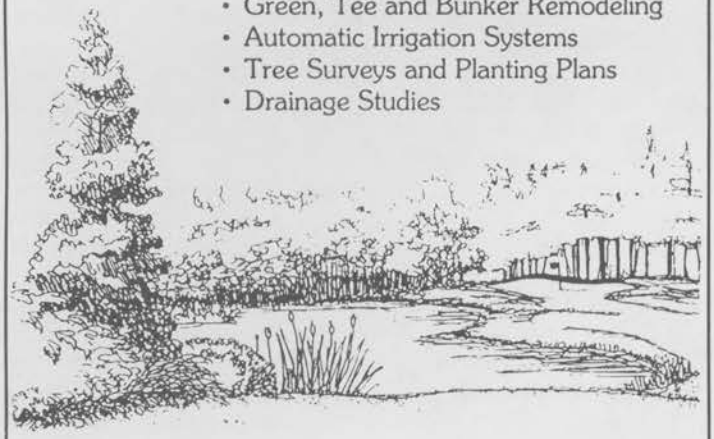

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Calendar

OCTOBER	5		Michigan & Border Cities, MTF Benefit day, Orchard Lake C.C., Birmingham C.C., Tam-O-Shanter C.C. and Edgewood C.C.
	12	Cadillac C.C.	NMTMA Annual Meeting & Tuck Tate Chapter Championship
	15	Holiday Inn, Lansing	GCSAA Regional Seminar (Turf Stress Management), Michigan border cities sponsored
NOVEMBER	29 - Dec. 2		44th CGSA Canadian Turfgrass Conference and Trade Show, Halifax, Nova Scotia
DECEMBER	5	Traverse City	NMTMA/MMTA Christmas Party at Grand Traverse Resort
JANUARY	5-7	Lansing	63rd Annual Michigan Turfgrass Conference, Basic Schools morning of the 5th, afternoon of the 7th
	23-30	Anaheim, CA	GCSAA 64th International Golf Course Conference and Show

Fall Colors: What Causes Them?

Ahh! The beautiful crisp days of fall and all those beautiful colors! What causes these brilliant leaf colors, and why do they occur at this time of year? Much credit has been given to "Jack Frost" but erroneously so, says James a Fizzell, University of Illinois Horticulturist in Cook County. A hard frost would quickly destroy the colorful beauty of fall, killing the leaves and resulting in the brown of winter.

How do we become the beneficiaries of such a brilliant display of fall color? The fall colors come from five major pigment groups. The green colors evident in summer are a product of the chlorophylls. The yellow colors are from xanthophyll pigments. The orange, as well as some yellow and red colors, are a result of the presence of carotenoid pigments, while the very showy shades of dark red, scarlet and crimson are due to anthocyanins.

Anthocyanins are also responsible for the tints of blue, violet and purple seen mainly during the spring and summer. The least noticeable pigments seen in the fall are the tannins, which are responsible for the deep browns of oaks. Fall color is controlled by hereditary factors and environmental conditions.

The kind of pigments, and the color the leaves turn in the fall, is genetically controlled. Every fall, for instance, birch trees all turn yellow, red oaks turn red and Ohio Buckeyes turn orange.

The intensity of the fall color for each tree or shrub is influenced by light, temperature, nutrition and the soluble sugar produced by the plant.

Sugar accumulation in the leaves is the most important factor in the production of anthocyanins in the fall, and the intensity of the red and orange colors. Trees and shrubs kept healthy during the summer and receiving full sun and enough water have the best chances for good fall color from anthocyanins. The amount of color depends on fall weather conditions. Sunny fall days followed by cool (40 to 45° F) nights favor accumulations of sugars in the leaves. Cloudy days and warm nights result in decreased sugar production and a movement of sugar out of the leaves, and less color.

The yellow fall colors so dominant in the landscape because of xanthophyllis and carotenoids, are actually present in the leaves during the summer. These are hidden by the dark green chlorophyll in the leaf. As summer passes and fall goes on, the chlorophyll breaks down, exposing the yellow pigments.

Credit: Bullsheet

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