November/December 1990

Our 65th Year

# A PATCH of GREEN

*Holiday Greetings*

GOLF COURSE SUPT. ASSOCIATION
BORDER CITIES
MICHIGAN



GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

OFFICIAL PUBLICATION OF THE MICHIGAN & BORDER CITIES GOLF COURSE SUPERINTENDENTS ASSOCIATION

# Our best to you!


TURFGRASS

# TURFGRASS INC.

# PRESIDENT'S MESSAGE

## WHAT DO YOU DO IN THE WINTER?

We are very fortunate in this part of the country to have a season like winter. There is an opportunity to recoup, both physically and mentally, from the recent golf season. There is sufficient time to make plans in organizing the coming year. There is a period when you can apply what is new in the business to your operation when the new season begins. We all know that equipment problems will be far more manageable if we take the time to do what is needed in the winter. We know that we can better control fertilizer/chemical spending if we have a plan for the coming year. We can have golf supplies-Equipment/Parts on hand for the new season if we plan ahead.

The questions I would ask of a superintendent would be: What are you doing this winter to become a better manager? What are you doing this winter to improve your communication skills? What are you doing this winter to educate yourself? Will you be organizing your right-to-know, MSDs, Employee Safety information for the coming season? What are you doing this winter to find and motivate employees? What are you doing in your office to organize yourself? What are you doing for your local community aside from golf? What are you doing to get the most out of winter?

By addressing these questions, we will be answering the big question — **What can I do to be treated as a professional?**

Best Wishes for 1991,
Tom Mason


**"A PATCH OF GREEN"**

*Published Bi-Monthly by the*

**MICHIGAN AND BORDER CITIES GOLF COURSE SUPERINTENDENTS ASSOCIATION**

**President**
TOM MASON

**Vice-President**
KEN DeBUSSCHER

**Secretary/Treasurer**
JON MADDERN

**Directors**

ED HEINEMAN
JAY DelCAMP
GARY THOMMES
JIM ECCLETON
STEVE KOLONGOWSKI
CAREY MITCHELSON

**President Emeritus**
CHARLES GAIGE

**Editor**
TED WOEHRLE

**Printed At**
BLAKEMAN PRINTING CO., INC.
Fraser, Michigan
(313) 293-3540


## 61st ANNUAL MICHIGAN TURFGRASS CONFERENCE

**JANUARY 21-23, 1991**
**Clarion Hotel and Conference Center**
**Lansing, Michigan**

**For more information please contact:**


Michael Saffel
584G Plant and Soil Science Building
Department of Crop and Soil Sciences
Michigan State University
East Lansing, Michigan 48824
(517) 353-9022




If you have changed your address, please let us know so we can keep our addressing plates up to date.

**Present Address:**

NAME

ADDRESS

CITY STATE ZIP

**Fill In New Address:**

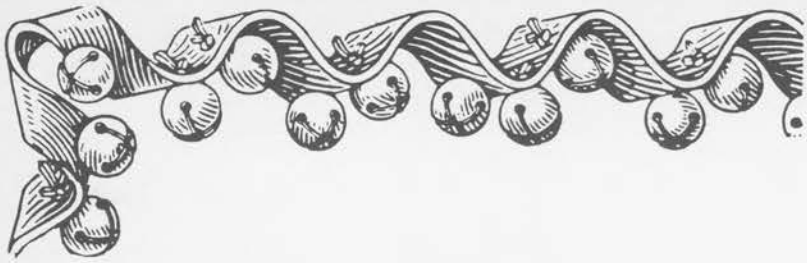
NAME

ADDRESS

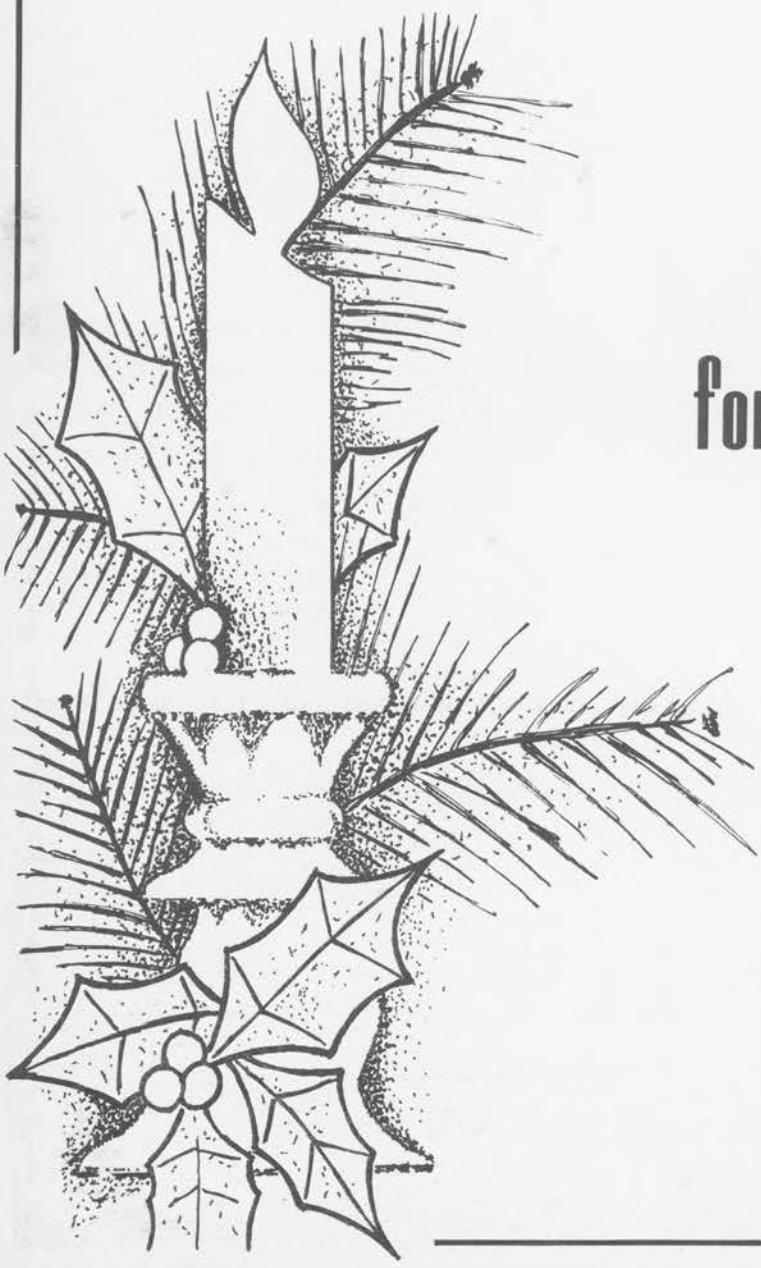
CITY STATE ZIP

Mail this form to:

**A PATCH OF GREEN**
31823 Utica Road
Fraser, Michigan 48026



# Season's Greetings



## and Best Wishes for the Coming Year

from the

Editor and Publisher

# ANNUAL MEETING HELD AT MAPLE LANES

President Tom Mason called the Annual Meeting to order at 7:30 p.m., October 22, 1990. The meeting followed a fun day of golf and dinner. The Annual Clarence Wolfrom Golf Tournament was held and the winners were as follows:

SUPERINTENDENTS FLIGHT

| | GROSS | NET |
|---|---|---|
| 1. George Prieskorn | 70 | 63(won playoff) |
| 2. Gary Thommes | 69 | 63 |
| 3. David Pizot | 74 | 64 |
| 4. Tom Mason | 76 | 65 |

VENDORS FLIGHT

| | GROSS | NET |
|---|---|---|
| 1. Jim Hyde | 81 | 65 |
| 2. Don Fields | 95 | 66 |

After golf everyone enjoyed a fine meal and the Michigan and Border Cities Golf Course Superintendents Association thanks host Paul Kolbe for a great day.

After dinner the Annual Meeting was held and Tom Mason asked all Committee Members to give a Verbal Report to the attendees. Topics were **GCSAA Seminar in Lansing; GAM Seminar; Treasurers Report; Picnic; Special Olympics Fundraiser; MTF Fundraiser; Golf Tournament Reports and Winners; and Christmas Party.**

Other topics were also discussed and reported to the attendees. Next year all reports will be written and distributed to the membership before the meeting for review. This will allow the Annual Meeting MORE time to dicuss any new business and hold Annual Elections.

Happy New Year,
Gary Thommes

GARY THOMMES, left, congratulating GEORGE PRIESKORN, winner of Clarence Wolfrom Tournament.

President TOM MASON calling Meeting to order.

NEWLY ELECTED DIRECTORS: (L-R) Paul Kolbe, Maple Lanes; President, Tom Mason; Michael Bay, Tam-O-Shanter.

1991 BOARD MEMBERS: (L-R) Ken DeBusscher, Vice President; Gary Thommes, Secretary; Paul Kolbe; Jim Eccleton; Charles Gaige; Tom Mason, President; Mike Bay; Jay DelCamp; Steve Kolongowski; missing – Carey Mitchelson

**WILKIE**

**Turf Equipment Division, Inc.**

**TORO**

*1050 Opdyke Road - Pontiac - Michigan - 48326*
*(313) 373-8800*

We at Wilkie Turf Equipment Division, Inc. would like to take the opportunity during this special time of the year, to extend our heartfelt gratitude to those of you who helped to make this our best year ever. Without your support and confidence, we would not have enjoyed the success we did this year.

We pledge to you, our valued customers, our continued effort to make 1991 an even better year for all of us.

Thanking You Sincerely,
Wilkie Turf Equipment
Division, Inc.

# All Things Considered
# What's Your Batting Average?
# An Opinion on Unreasonable Expectations

by Stanley J. Zontek
Director, Mid-Atlantic Region, USGA Green Section

Golfers are well known for making comparisons. They seem to take pride in telling anyone who will listen how a course down the road does something this way or that. They compare budgets, acreage maintained, soils, grass types, green speed, the amount of labor, and many other facts. Sometimes the comparisons are accurate, sometimes not.

Let's take this comparison one step further. It's not really valid, but it is interesting nonetheless.

**Baseball:** A .250 batting average is just that - average. A ball player hits safely one at-bat in four. A "star" bats .300, and an immortal like Ted Williams bats .400. If you are keeping score, and you should be, that's four out of ten.

**Basketball:** Superstars shoot just over 50% from the field. They shoot a ball into a hoop at a distance of zero (a dunk) to 18-22 feet or more.

**GOLF:** A par round of golf is normally about 72. Golfers who consistently shoot less than par are found on the PGA Tour, making lots of money. Golfers who shoot consistently over par are found everywhere, and includes those people making the comparisons. The average handicap in the country is just over 18. The average golfer, therefore, shoots about 25% over par.

At what percentage do golf course superintendents produce quality turfgrass? As a basis comparison, golf courses contain about 30 acres of fairways, 2.5 acres of greens, and 2.5 acres of tees. This equates to about 100,000 sq. ft. of greens and tees and 1,320,000 sq. ft. of fairways. Thus, if a superintendent "bats" .400, which would put him in great company in baseball, it means your superstar would lose the equivalent of 10.8 greens and tees out of 18. On fairways, he would lose about 18 acres of turf.

While this .400 batting average might get you into the Baseball Hall of Fame, you would probably lose your job as a golf course superintendent.

All of this may sound ludicrous, but the fact remains that golfers have set such high standards for their golf courses that maintaining these standards is difficult, expensive, and sometimes impossible to achieve. To keep alive every blade of grass on every green, tee, and fairway regardless of the conditions, and not being willing to accept anything less, is wishful thinking and a mistake.

Everything cannot be perfect on every golf course every day. Even if it were possible, what would it cost?

So, look at your golf course. My message to course officials reading this opinion is not to be so concerned if the golf course superintendent bats only .998. After all, this equates to losing about 200 sq. ft. of turf, a 10 ft. by 20 ft. area of greens or tees and 2,640 sq. ft. of fairways, or .06 of an acre.

Anyone who bats this percentage or better deserves a pat on the back, not a kick in the pants. After all, what other industry which deals so closely with Mother Nature can boast a 99% average or better? Not many.

Therefore, the next time you read about a professional athlete making $2,000,000 a year to achieve only a 30% batting average, be proud. . . because golf course superintendents are batting 99% or better.

**Reprinted from the September/October 1990
USGA Green Section Record**

---

**Golf may be. . . a sophisticated game. At least, it is usually played with the outward appearance of great dignity. It is nevertheless, a game of considerable passion, either of the explosive type, or that which burns inwardly and sears the soul.**

**Bobby Jones**

# NECESSITIES IN THE NINETIES

James M. Latham
Director Great Lakes Region
USGA Green Section

Looking back on the 1990 golf growing season, there was no major, all-encompassing event or condition that makes it memorable. There was no central focus like **The Drought of '88** which affected the entire Great Lakes Region. It was not, however, one of those vintage years when things were generally pleasant. But when the quality of bunker sand shares equal interest with the quality of the grass during some Turf Advisory Service visits, golfers must not be very unhappy. There were intense local problems — severe winterkill of **Poa annua** from Fargo to Stevens Point with an epicenter (again) in the Twin Cities; prolonged rains and high temperatures which caused turf losses (quality or quantity) in northern Illinois; heavy white grub invasions from Indiana to Iowa; and a few floods (like the 23 inches of rain falling in the Quad City area during the month of June).

The bone-chilling cold early last December did much less damage here than was expected. There were major losses of warm season grasses from Missouri to Texas. That cold spell, incidentally, killed some golf turf all the way to Houston. How would you like to see about 70 acres of dead grass on your course?

The Wisconsin Golf Turf Symposium turned 25 this year, just a kid compared with some conferences, but one which sets some sort of mileposts in the field. Each is devoted to a single topic, which is usually a mirror of the interests of the day or at least the near future. Looking at some of the topics covered, some rather pointed questions can be asked. For example, Symposium Number One (1966) dealt with winter injury. Number Two covered the physical nature of soils — with much emphasis on green building and Number Three took on **Poa annua**, as did the 11th and 18th. Even though speakers at these Symposia are acknowledged leaders in their fields and attendees are certainly capable of learning, these subjects remain major problems. It indicates the complexities of dealing with the environment of this high quality, special purpose turf and the costs involved in creating a favorable environment for the root systems of defoliated bentgrass.

Why were there so many greens built in 1990 which are either doomed to failure or will at least be a severe threat to the tenure of future golf course superintendents? Perhaps it parallels some of our bureaucracies. The construction division (of either a municipality **or** industry) is pressed by management to design and build something for the lowest possible cost. When plans and specs are presented, the numbers look good — to everyone but the operating division who see their costs mushrooming just to keep the new stuff running and who must go back to management every year for funds to repair or replace the installation. **They** are the people who must justify their budgets, while the designers are off on some other money-saving tangent involving untested ideas devised by their own rationalizations or egos.

Sound familiar? But boy, does that new structure or machine get media attention and cover photos. All the while the operations people are already wondering how they can prepare a budget just to keep the monster running and, of course, without pointing out the lack of foresight of those in management who approved the project in the first place. "Keep construction costs down! We'll handle operations and maintenance when the time comes." Sure! I drive a lot of miles on Interstate 43 (Green Bay/Milwaukee/Beloit). It is probably the roughest stretch of new highway ever built. The slabs of concrete had not cracked before they were running Super-Zambonis over some sections to "groove the pavement for safety." Hell, they were trying to smooth it. Who Ok'd that work and who inspected it? Probably shock-absorber salesmen.

The point here is, who Ok's and specs for golf courses? Why do owners who, after being told of construction deficiencies go ahead and accept the job? Then they reject a rehab budget on the grounds that its a new course and shouldn't need it or that play cannot be discouraged because cash flow is needed (usually in the clubhouse or pro shop).

It is more difficult to deal with the **Poa annua** thing. But winterkill of **Poa annua** is real, even though "out of sight - out of mind" (no seedheads) never fit a subject better. Ask the Minnesotans who have seen it two (2!) years in a row. The kicker in '89 and '90 was the extremely poor spring weather which severely retarded seed germination of both bentgrass **and** poa. Anything green was acceptable, even though it meant starting the same vicious cycle again. The fact that bentgrass loss was negligible or nonexistent should deliver a strong message.

Prevention? The thin fabric covers were of little or no help in the Twin Cities. If there is snowmelt followed by a deep freeze, they offer no thermal protection and may even enhance the day/night

CONTINUED PAGE 30

# GUIDELINES FOR CONTROLLING MOSS IN GRASS

**Norman Hummel**
**Cornell University**

The quality of golf course greens by present day standards is often determined by greens' speed. Golf course superintendents are mowing greens shorter and keeping the nitrogen fertility lower than ever before to obtain faster speeds. A consequence of these practices has been a reduction in turfgrass vigor to a point whereby the greens are much more prone to weed encroachment. One of the more troublesome weeds to have become a problem is moss.

Until recently, the only known means of controlling moss was through the use of mercury products. With the support of the Metropolitan Golf Association, research was conducted to look at means of controlling this serious weed. This research identified both chemical and cultural tools that could be used in a moss eradicating program.

### Chemical Control

Pesticides and other materials offer hope in controlling moss on bentgrass greens. In the early spring, moss commences its growth much earlier than bentgrass, giving it an early competitive advantage. Hydrated lime applied in late March at 3 to 5 pounds per 1000 square feet will burn back the moss during this period. The lime can be spread easily if mixed with a dry sand topdressing.

An effective treatment for moss control would be the Scotts Goosegrass Control — a betasan-ronstar combination. Labelled for use on bentgrass greens, this product provided 83% control from only a single application. While this product will cause some discoloration, it appears to be one of the more promising moss control products.

Siduron (Tupersan) and bentazon (Basagran) provided from 53 to 74% control of moss. While they were not quite as effective as the Scotts product, both siduron and bentazon were much safer since no injury occurred for either product.

You should note that with the exception of bentazon, the most effective treatments are preemergence

CONTINUED NEXT PAGE

herbicides. While it can't be determined from these trials whether the effect is pre- or postemergence, it should be mentioned that the herbicidal activity of these materials on moss was chronic. It was several weeks before we noticed any significant decrease in moss production.

### Cultural Control

Chemicals only offer a partial solution to the moss problem. Unless cultural steps are taken to increase turfgrass vigor, chemical control of moss will be an ongoing battle. We designed studies to look at the effects of cultivation techniques and fertility on moss eradication. The results clearly demonstrated that culture can be changed to the detriment of moss.

While silvery thread moss will tolerate dry conditions, it is favored by an abundance of free water. Core cultivation immediately followed by sand topdressing would create a system of "vertical drains" that would facilitate a rapid water removal of the surface. We found that moss removal was hastened where this practice was followed compared to core cultivation alone. Deep spiking was also beneficial compared to core cultivation alone.

Nitrogen and iron are the most important tools in a moss eradication program. Moss control improved as the rate of nitrogen was increased. Moss was eliminated over two growing seasons from plots that were initially 40% moss by increasing nitrogen rates to about 0.8 lbs. per 1000 square feet per growth month (6 lbs. N/year). Iron applications at a rate of 6 ounces per 1000 square feet per month were beneficial during the first year, especially at the higher rates of nitrogen. Iron had no effect on moss in the second year.

While we didn't measure greens' speeds, these high nitrogen treatments no doubt resulted in slower speeds. The bottom line though, is if you have moss, you are going to have to at least temporarily increase nitrogen rates. Effects on greens' speeds can be minimized by careful control of water, double cutting, or increasing potassium levels.

Moss control research has until now looked at fertility and herbicides independently. Studies will be conducted this year to look at combinations of herbicides and nitrogen fertility in moss eradication "programs." Perhaps this research will identify more reasonable nitrogen rates to use in conjunction with a herbicide program to eliminate moss from greens.

In summary, enough information is known for a superintendent to develop a legal moss control program. Early spring application of hydrated lime, followed about a month later and in the early fall with a herbicide are the first steps in controlling moss. Increasing your nitrogen levels during this period will no doubt improve the competitive advantage of desirable grasses at the expense of moss. Furthermore, control your soil moisture levels through careful irrigation and by providing good drainage throughout the soil profile.

Credit: **Our Collaborator,**
Northeastern GCSA, September, 1990

---

**A Bankers Prayer from Bob Mitchell shared with the Editor.**

Almighty God:

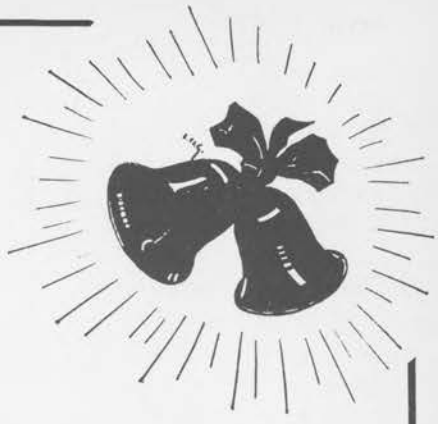
We thank you for the unlimited credit of your love;
For food and clothes,
For family and friends,
For all the good things of life
which you have loaned us freely
without collateral and without
interest.
We thank you for renewing this loan
each morning for the length of our days.

Cover our overdrafts of sin and pride.

Deposit in us an account of goodness and peace:
Compound it daily to build up in us an escrow of your grace.

And grant that when our books
Are called for their final audit,
We may be found in balance.

For we pray in your name.



*Happy* HOLIDAYS

# EVANS MINING CORPORATION

## GREAT LAKES MINERALS, CORP.

1900 RICHMAN ROAD – SMITH'S CREEK, MICHIGAN 48074
1-800-332-3294 367-3021

CONTINUED FROM MAY/JUNE 1990 ISSUE

# THE WAR ON ALAR

The Natural Resources Defense Council fits the Fenton pattern. Leftists, discouraged by the criticisms of communism and Marxism coming from so many communist countries, are turning to the environmental movement to vent their hatred of the free market system. Many of them resent our success in improving living standards by the efficient use of technology and science and portray these advances in a negative light and poke sticks in the spokes of the wheels of progress. The NRDC has been in the forefront of the left's war on nuclear energy for two decades, and is now leading the charge against the use of chemicals to increase productivity and the quality of agricultural products.

This is an old campaign. Cesar Chavez and his United Farm Workers Union fought the use of pesticides on food crops for years, with little success. The NRDC came up with the idea of energizing the campaign by arguing that pesticide residues on food are particularly bad for children and that this was being ignored by government regulatory agencies. It produced a report titled, "Intolerable Risk: Pesticides in our Children's Food." It singled out Alar, which is not a pesticide, as being one of the most dangerous agricultural chemicals because it is used on apples, and children consume a lot of apples and apple juice. The report was based on innaccurate data. It argued that Alar and its breakdown product, UDMH, were carcinogens, but the studies on which this finding was based had been rejected as badly flawed by an Environmental Protection Agency scientific advisory panel. New studies had been orderd, but they had not been completed when the NRDC prepared this report.

The NRDC obviously knew that this was a fatal flaw in what purported to be a scientific study. It went to great pains to insure that the report was not seen by reputable scientists who would have pointed out that for this and other reasons the conclusions were invalid. This didn't bother David Fenton. He planned a campaign to publicize the NRDC report so that it would have maximum impact before potential critics even saw it. Beginning in October, 1988, he mapped a strategy based on keeping the report secret until it could be released with a burst of publicity.

CONTINUED PAGE 25

# OSBURN INDUSTRIES

## Custom Top Dressing Blends

- ♦ TDS 2150 Dune Sand
- ♦ 540 Best
- ♦ Local Mason Sand

{

- ◊ Michigan Sphagnum
- ◊ Canadian Sphagnum
- ◊ Sandy Loom Topsoil
- ◊ Reed Sedge Peat

### Trap Sand

◊ Best 530
◊ Local 2NS Sand
◊ Local Mason Sand

### Other Materials

◊ Cart Path Slag
◊ Pea Pebble
◊ Decorative Boulders
◊ Parking Lot Stone

*Call for details*

**(313) 292-4140**

*Ask for Dick, Rick or Tim*

**5850 PARDEE**
**TAYLOR, MICHIGAN 48180**


# 62nd International Golf Course Conference & Show

★ Trade Show  Golf Championship ★

★ Educational Seminars  GCSAA Annual Meeting ★

**February 5-12, 1991**
**Las Vegas Convention Center**
**Las Vegas, Nevada**

For conference, seminar or exhibitor information, call 800/472-7878 or 913/841-2240.
Golf Course Superintendents Association of America
1617 St. Andrews Drive, Lawrence, KS 66047

# GCSAA NEWS

## GOLF SUPERINTENDENTS TO ELECT LEADERS IN LAS VEGAS

Stephen G. Cadenelli, CGCS, has been nominated for the presidency of the Golf Course Superintendents Association of America (GCSAA). The association's 1991 election of officers and directors will be held February 12 during its annual meeting at the GCSAA Iinternational Golf Course Conference and Show in Las Vegas, Nevada.

Cadenelli, superintendent at The Metedeconk National Golf Club in Jackson, New Jersey, is currently vice president of GCSAA.

Nominee for GCSAA vice president are directors Randy Nichols, CGCS, of Cherokee Town and Country Club in Dunwoody, Georgia, and William R. Roberts, CGCS, of Lochmoor Club in Grosse Pointe Woods, Michigan. Roberts currently serves as Secretary/Treasurer of the association.

Three candidates for director will be elected for two-year terms. The four nomiees for director are Gary T. Grigg, CGCS, of Shadow Glen, The Golf Club in Olathe, Kansas; Charles T. Passios, CGCS, of Hyannisport Club in Hyannis Port, Massachusetts; Gary D. Sayre, CGCS, of Overlake Golf and Country Club in Medina, Washington; and Bruce R. Williams, CGCS, of Bob O'Link Golf Club in Highland Park, Illinois.

GCSAA's current president, Gerald L. Faubel, CGCS, of Saginaw Country Club in Saginaw, Michigan will continue to serve on the board of directors for one year as immediate past president.

Two current board members, Joseph G. Baidy, CGCS, of Acacia Country Club in Lyndhurst, Ohio, and Randall P. Zidik, CGCS, of Rolling Hills Country Club in McMuarry, Pennsylvania, have one year remaining on their terms.

## CONFERENCE TO STRESS SUPERINTENDENT'S ENVIRONMENTAL PROTECTOR ROLE

"Green Education" for golf course superintendents will be in the spotlight at the 62nd International Golf Course Conference and Show, February 5-12, 1991. Thousands of superintendents and other turfgrass professionals will attend more than 40 educational sessions at the conference, many of which will focus on sound environmental practices. The conference is hosted annually by the Golf Course Superintendents Association of America (GCSAA).

New for this year's conference is an in-depth Environmental Management Program (EMP) developed by GCSAA that allows superintendents an opportunity to gain specialized instruction in six environmental areas: Integrated Plant Management; Underground Storage Tanks (UST'); Employee Safety and Right-To-Know; Water Quality and Application; Golf Course Development; and Storage, Disposal and Recycling. The EMP lets superintendents earn "specialist" certificates in each of the above areas. In order to achieve "specialist" status, a superintendent must successfully complete as many as seven courses designed specifically for a particular area.

Three EMP seminars — "Protection of Water Resources," "Scouting, sampling and Monitoring Golf Course Pests" and "Underground Storage Tank Selection and Installation" — will premiere at this year's conference.

The 1991 one- and two-day environmental seminars in Las Vegas include:

- Developing Your Hazard Communication Program, February 5
- Safe Pesticide Management, February 5
- Water Quality and Irrigation Scheduling, Feb. 7
- Integrated Pest Management, February 5-6
- Protection of Water Resources, February 7-8
- Environmental Considerations in Golf Course Management, February 7-8
- Underground Storage Tank Selection and Installation, February 7
- Scouting, Sampling and Monitoring Golf Course Pest, February 8

Because of the importance of groundwater protection and new Environmental Protection Agency (EPA) regulations, GCSAA is hosting a special UST symposium at 1 p.m., Monday, February 11. Donald E. Hearn, CGCS, a GCSAA past president, will serve as moderator for a panel discussion and question-and-answer period.

CONTINUED PAGE 17

The Original

**HYDRO-MAC** ™
**by Hydro-Turf**

# HAS HIT A HOLE IN ONE!

WITH THEIR NEW **HM 110 SMS*** T.M.

WHETHER YOU'RE SPRAYING FAIRWAYS & GREENS —
OR REPAIRING ROUGHS, FAIRWAYS & DIVOTS —
THIS ALL-PURPOSE MACHINE IS "REALLY UP TO PAR."

**FOR MORE INFORMATION**
**CALL OR WRITE FOR A DISTRIBUTOR NEAREST YOU.**

*seeder, mulcher, sprayer

# YOU'RE ON OUR TURF NOW!

**P.O. Box 517 • Fenton, Michigan 48430**
**(313) 750-0578 • FAX (313) 344-8756**

# GCSAA NEWS

## MICHIGAN SUPERINTENDENT RECEIVES GCSAA CERTIFICATION

Michael T. Sullivan, superintendent of Faulkwood Shores Golf Club, has been designated a Certified Golf Course Superintendent (CGCS) by the Golf Course Superintendents Association of America (GCSAA). Sullivan has been superintendent of the Howell, Michigan course since 1985. He lives at 1745 Peavy Road in Howell.

To become certified, a candidate must have five years experience as a golf course superintendent and be employed in that capacity. The candidate must pass a rigorous six-hour examination covering the rules of golf, turfgrass management, pest management, financial and organizational management and the history, ethics, purpose and procedures of GCSAA. Also, an on-site inspection of Sullivan's golf course operation was conducted by two currently certified superintendents: James Timmerman, CGCS, of Orchard Lake, Michigan, and Steven Kolongowski, CGCS, of Fenton, Michigan.

GCSAA, a 10,400-member internationsl professional and educational association, instituted the certification program in 1971 to recognize outstanding and progressive superintendents. More than 1,100 active GCSAA members currently hold "CGCS" status.

## THREE HONORED FOR DISTINGUISHED SERVICE

Dr. Noel Jackson, plant pathologist at the University of Rhode Island; W. Bruce Matthews, golf course architect; and Dr. Eliot C. Roberts, executive director of the Lawn Institute, will be honored for their dedication and outstanding service to golf course superintendents and the golf community at the Opening Session of the 62nd International Golf Course Conference and Show.

Jackson, Matthews and Roberts have been selected as recipients of the 1991 Distinguished Service Award. The selection was made by the board of directors of the GCSAA.

Jackson has been a turfgrass researcher and educator at the University of Rhode Island since 1965, when he moved to the United States from his native England. Jackson's research work and fungicide evaluations have contributed a wealth of information on turfgrass patch diseases. He has also lectured at and participated in turfgrass conferences, seminars and symposiums throughout the United States and in the United Kingdom, Canada and New Zealand.

Matthews has been a member of GCSAA for 56 years. In addition to serving as a golf course superintendent and building a distinguished career as a golf course architect, Matthews also has been active with turfgrass research at Michigan State University and Purdue University. He designed and owns Grand Haven, Michigan Golf Club.

Before founding The Lawn Institute in Pleasant Hill, Tennessee, Roberts spent 28 years as a turfgrass management teacher, researcher and administrator at universities in Massachusetts, Iowa, Florida and Rhode Island. Roberts will be retiring soon from his position as executive director of the institute. In his eight years as executive director, he has traveled extensively to speak at seminars, conferences and meetings dealing with turfgrass and grounds management.

GCSAA members and affiliated chapters submit nominations for the Distinguished Service Awards.

---

**ENVIRONMENTAL ROLE, CONT.**

The panel will feature Robert Klitz, superintendent at Inverrary Country Club in Coral Springs, Florida; Ed Kettenbrink, Ph.D, senior consultant at Advanced Environmental Specialists; Robert Yoos, environmental scientist at Franklin Associates; Lee Daniels, representative from EPA's Region VII; and Richard Shanks, president of Jardine Insurance Brokers of Kansas City.

The panel will discuss UST selection, installation, closure and monitoring. Information will presented in legal requirements that affect an estimated 85 percent of all golf facilities.

For information on seminars or other conference proceedings, call GCSAA headquarters at 1-800-472-7878 or 913-841-2240.

# INTERNATIONAL GREAT LAKES DATUM

It's not nearly as dramatic as an earthquake — you can't even see it happening — but the earth's crust in the Great Lakes basin is shifting. These changes, which have been occurring since the lakes were formed after the last ice age, make it necessary to update the reference system by which Great Lakes water levels are measured. The work is being conducted by the U.S. National Ocean Service and the Canadian Hydrographic Service.

"When International Great Lakes Datum (IGLD) was first established using measurements and information that centered on 1955, it was recognized that the datum would need updating every 25 to 30 years," explained Harry Lippincott of the U.S. National Ocean Service. The international datum was established to provide a standard reference for measuring lake levels.

"It was suspected that isostatic rebound — which is, in effect, the earth's crust bouncing back from the weight of the glaciers that once covered the Great Lakes basin — would affect the accuracy of measurements referred to as IGLD 1955," added Peter Yee of Environment Canada's Great Lakes-St. Lawrence Study Office. This rebound is occurring at varying rates around the basin, and the changes it causes mean that any benchmark — or reference point — assigned a height above the IGLD 1955 zero point has gradually shifted, not only with respect to the zero but with respect to other benchmarks.

In addition, other land elevation changes caused by subsidence due to mining, or settling due to the weight of structures, may have affected a small number of benchmarks. A change of less than one inch in the mean water level — or zero point — as measured for the new datum will also cause small changes in the newly-assigned lake elevations.

The mean water level at a gauging station in Point-au-Pere, Quebec at the mouth of the St. Lawrence River was used to define the zero point for IGLD 1955. This station was replaced in 1984 by a new guage at Rimouski, approximately three miles upstream. The updated zero point for IGLD 1985 will be the mean water level calculated from data collected at these two stations between 1970 and 1988.

CONTINUED PAGE 22

# Constructing an Inexpensive AG Chemical Rinse Pad

ACRE
ALLIANCE FOR A CLEAN RURAL ENVIRONMENT

P.O. Box 413708
Kansas City, Missouri
64179-0386
800-545-5410

Simple, every-day solutions often exist to questions about proper agricultural (ag) chemical storage, mixing/loading and application. However, state and federal regulations are rapidly becoming more complex and restrictive, and more intricate solutions may be needed in the very near future to comply with changing surface and ground water protection requirements.

Faced with this prospect, many farmers and other ag chemical users are asking what they can do to be prepared for the new laws and regulations. Of course, no one has a crystal ball, but some areas of ag chemical use seem more vulnerable to change than others.

For example, ACRE has cautioned not to repeatedly load and rinse equipment in the same location and certainly not directly next to wells or surface water. Yet, it's a mistake commonly made, since that's where the water for mixing and rinsing is located. It is important to protect areas where loading or rinsing of sprayers and spreader equipment occurs.

What can golf course superintendents do? Superintendents may want to construct a cement rinse pad to prevent inadvertantly spilled ag chemicals from leaching into ground water or contaminating streams or ponds, and endangering the water that you, your family and neighbors drink. Designed properly, it can also serve as a secure ag chemical storage area and permit easy cleanup of spills incurred during ag chemical handling.

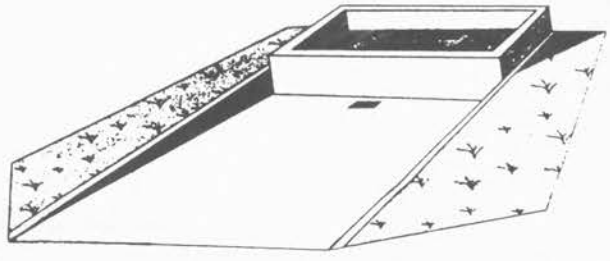
## SIMPLE, EFFICIENT DESIGN:

There are many possible ways to design and build a cement rinse pad, but one we like was designed by Ronald T. Noyes, extension ag engineer at Oklahoma State University. His standardized, modular design uses input from numerous engineers, researchers and regulators. A key feature is that it provides flexibility, allowing superintendents (as well as dealers) to scale the construction to their needs. Professor Noyes estimates construction costs for a 20x25-foot rinse pad, including professional labor, to be about $900 to $1300, excluding equipment such as sump pump and tanks.

Professor Noyes can provide detailed specifications and cost information in his publication **Modular Farm-Sized Concrete Agricultural Chemical Handling Pads**. His address is — Cooperative Extension Service, 224 Ag Hall, Oklahoma State University, Stillwater, Oklahoma 74078.

The basic design for the Noyes' system guides the construction of a watertight, reinforced, concrete pad large enough to hold the largest application vehicle you use, plus containment areas dedicated to rinse-water storage tanks, mixing and loading equipment and for ag chemical storage.

The pad is sloped to the center and contains floor drains to sumps for easy cleanup. Steel-grated, shallow concrete collection sumps serve as sediment settling basins and are designed to collect spills and rinse water for transfer to above-ground rinsate tanks. A pump can also be used to move solutions directly from the drain valve on your sprayer into rinsate storage tanks.



**This sketch illustrates the type of ag chemical rinse pad/storage and containment facility you can build at home.**

## CAPTURING WASTE WATER:

To use the rinse pad, a superintendent drives his sprayer onto the concrete pad and makes sure that the sump drain valve (if installed) is locked in the closed position. Any leftover field-strength chemical and rinse water from the sprayer drain valve is pumped into a marked rinsate tank. Any spills can be hosed into the sump for later recovery.

CONTINUED NEXT PAGE

Rinse water or rinsate can be stored temporarily in various types of holding tanks, including mobile tanks. A good choice, however, is one or more 300-gallon, cross-linked polyethylene or fiberglass tanks. Liquid levels can be easily seen through these types of tanks. Noyes recommends that the rinse water storage tanks be mounted three to five inches above the concrete floor so leaks can be spotted easily. Pumps and piping should be above ground too, and contained within the rinse pad area.

Probably more than one rinse water tank will be needed. By separating rinse water by use into different tanks, it can be used later as makeup water the next time the product or a compatible chemical is sprayed. Caution should be used to follow label instructions and mix only label-compatible ag chemicals.

Storage tanks are mounted on a level area at the back of the concrete pad, within low concrete walls high enough to contain an amount 10% greater than the volume of the largest rinse water tank should a severe leak occur. A separate sump in the containment area is needed to handle rainfall and potential rinse water spills. It's important to keep sumps pumped dry so rain water and snow won't become a handling problem. Sumps should be checked and rinsed regularly.

## STORAGE OF FULL-STRENGTH CHEMICALS:

When designing a rinse pad, it may be useful to consider adding extra convenience and greater environmental protection by including an area for storage of full-strength ag chemicals. For security as well as safety, this area should be designed to include security fencing and a locked gate. A weatherproof shed would be useful for those products that need weather protection.

Full-strength crop protection chemicals and rinse water tanks can be stored in the same containment area, but they must not be stored in the same containment area as fertilizers and the rinse waters from them. Keeping crop protection chemicals and fertilizers separate within the containment area is accomplished by building a concrete subdividing wall. Separate sumps are needed within each subdivision.

## SITE SELECTION:

Selection of a suitable site for the rinse pad is also important. It should not be in a location where the water source can be contaminated by an accidental spill. If possible, pick a site that hasn't been used for chemical storage, mixing/loading or equipment rinsing. If not possible, take precautions to remove contaminated soil or otherwise decontaminate the site before constructing a rinse pad.

## DETAILS, DETAILS, DETAILS:

If you decide to construct a rinse pad, write to Professor Noyes for details and specifications. Then carefully review these with your cement contractor, paying particular attention to requirements for rebar placement, concrete strength, plastic admixtures and waterproofing.

## OTHER REFERENCES:

Drawings and specifications from other sources are also available. They include:

**National Fertilizer Solutions Association**
339 Consort Dr., St. Louis, Missouri 63011

**Farmstead Assessment System**
University of Wisconsin
Ag Engineering Dept.
Madison, Wisconsin 53706

**DETAIL**
800 N. Lindbergh
St. Louis, Missouri 63167

**National Agricultural Chemicals Assocation**
1155 15th St., NW
Washington, DC 20005

---

# FINAL DIAZINON CANCELLATION ORDER

On March 29, 1988 EPA cancelled diazinon registrations unless they were amended to prohibit use on golf courses and sod farms. On a petition for review the United States Court of Appeals for the Fifth Circuit set aside that order and remanded the case to EPAfor determination of whether these uses cause an unreasonable risk to birds. EPA's decision from William K. Reilly, Administrator, dated July 12, 1990, responded to that demand.

The decision stated that diazinon use on golf courses and sod farms causes an unreasonable risk to birds "commonly and with considerable frequency." Moreover, the record fails to show that regulatory alternative short of cancellation would fail to reduce the risk to reasonable levels. The EPA's formal order for diazinon use on golf courses went on to state the following major points:

1. Use of diazinon products on golf courses or sod farms is prohibited.
2. Any pending applications for diazinon products for use on golf courses and sod farms is denied.
3. Unless the registrant submits a timely application to amend the registration to prohibit use on golf courses and sod farms, the registrations at issue in this proceeding will be cancelled. The application should propose to amend the registration of the product to include the statement, "This product must not be used on golf courses and sod farms," on the top of the front panel of the label.

**Federal Register, July 31, 1990**

LEBANON, Pennsylvania — Lebanon Turf Products has introduced Country Club 7-3-22 with TEAM for use on fairways, tees and other professionally maintained turf areas. This premium homogeneous fertilizer with 100% sulfate of potash is impregnated with 1.155% TEAM herbicide — a unique combination of Benefin (Balan) and Trifluralin (Treflan) — and is designed to save golf course superintendents and grounds maintenance personnel both time and money.

The Country Club fertilizer base will help improve turf's resistance to disease and drought without causing flush spring growth. This product is available in 50 lb. bags that provide 12,500 sq. ft. of treatment. Recommended application is 175 lbs. per acre yielding 2 lbs. Team per acre.

TEAM is the registered trademark of DowElanco's combination of benefin and trifluralin.

November 30, 1990 — Wilkie Turf Equipment Division recently returned from a five-day stay in Scotsdale, Arizona, where they participated in the Toro University, participants had the opportunity to choose from approximately 70 classes. Of course, taking all 70 classes was not possible, so participants had the hard choice of selecting between 12 to 15 classes that best fit their needs.

The event sponsored by Toro Irrigation was entitled "Achieving Customer Satisfaction." The wide variety of classes offered were taught with that motto in mind. The classes ranged from Basic Turfgrass Theory to Computer Irrigation Design. Participants were also further education in areas focusing on their presentation and selling skills. The students were able to obtain a great deal of knowledge from the expertise of the Toro faculty members.

The benefits gained from participating in Toro University have proven to be beneficial and because of this, Wilkie Turf Irrigation employees will be sponsoring their own Toro University, March 18-21, 1991 at the Michigan State University Management Center in Troy, Michigan. Classes will be held from 8:00 a.m. to 5:00 p.m., Monday through Thursday. Two days will be dedicated to the irrigation contractor, one day will be dedicated to golf course superintendents and one day for the government agencies and municipalities. For registration information, contact Mark Roberts at (313) 476-3664.

The Canadian Hydrographic Service and the U.S. National Ocean Service have been working for several years, with participation from the Geodetic Survey of Canada and the U.S. National Geodetic Survey Division, to collect information for the new datum, using updated and more detailed measurement techniques. A Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data, which inludes representatives from these agencies and other divisions of the U.S. National Oceanic and Atmospheric Administration, the U.S. Army Corps of Engineers and divisions of Environment Canada, coordinates the completion of these measurements. The updated datum, to be called IGLD 1985 after the year around which the data gathering process has centered, is expected to be in effect in early 1991.

Estimated changes in benchmark elevations range from approximately five to 20 inches. Thus, lake levels referred to IGLD 1985 will be assigned elevations with higher numbers than those referred to IGLD 1955 and International Joint Commission orders approving regulation plans and other works in the Great Lakes and connecting channels will require updating in keeping with these revised elevations.

"These changes in the assigning of elevations do not cause the amount of water in the lakes to change," emphasized Murray Clamen, engineering advisor to the Commission. "They are strictly technical changes to maintain the accuracy of the reference system we use to measure lake levels."

International Joint Commission
Commission mixte internationale

From **FOCUS On International Joint Commission Activities, Volume 15, Issue 3, ISSN 0832-6673**
copy by Ruth Edgett

Further information on IGLD 1985 may be obtained from either Peter Yee, Environment Canada Great Lakes-St. Lawrence Study Office, 111 Water Street East, Suite 232, Cornwall, Ontario K6H 6S2, telephone (613) 938-5725 or Harry Lippincott, National Ocean Service, Great Lakes Acquisition Unit, 6001 Executive Boulevard, Rockville, Maryland 20852, telephone (301) 443-8047.

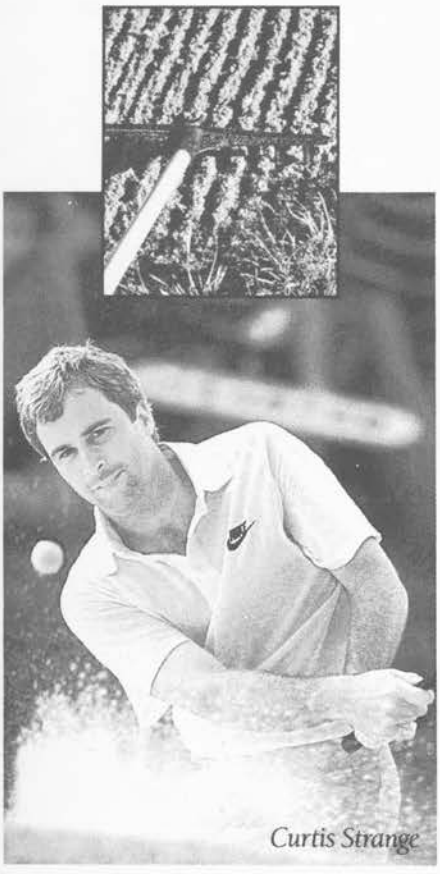
---

**"We make a living by what we get, but we make a life by what we give."**

**Norman MacEwan**

# PRACTICE *your* FOLLOW-THROUGH


**REPLACE DIVOTS**




**RAKE BUNKERS**


**REPAIR BALL MARKS**

Every time you take a swing on a golf course you have the solemn obligation to put things back the way you found them. It's a time-honored tradition of the greatest game ever invented. So remember, you're never finished until you follow through.

Golf Course Superintendents Association of America
The Professional Golfers Association of America

# EFFECT OF VARIOUS NITROGEN SOURCES, ORGANIC AMENDMENTS, AND BIOLOGICAL CONTROL AGENTS ON TURFGRASS QUALITY AND DISEASE DEVELOPMENT, 1990

**M.D. Soika and P.L. Sanders**
Department of Plant Pathology
Pennsylvania State University

This study was conducted at the Valentine Turfgrass Research Center, University Park, Pennsylvania, on creeping bentgrass maintained under golf course management conditions at 8.16 inch cutting height. The test area was fertilized on April 4 with LESCO 32-3-10 at 3 lbs. per 1000 sq. ft. Individual plots, 3 ft. x 15 ft., were arranged in a randomized complete block design with five replications. On May 9 and August 1, three core samples were taken from each individual plot for pre- and post-treatment soil analysis and thatch measurement. The test area was core-cultivated on May 15, and aerifier holes were left open to facilitate movement of biological and organic amendments into the soil. The experimental area was innoculated on June 11 and July 10 by hand-scattering S. homoeocarpa-infected rye grain over the entire test area. Treatments were applied with a $CO_2$-powered boom sprayer, using T-jet 8004 nozzles, at 30psi, in water equivalent to 2 gal. per 1000 sq. ft. Granular material were hand-scattered from shaker-top jars. Applications were made on June 5, July 3, and August 1, except where noted in the table. The checks and treatments without a fertilizer component were fertilized with 0.2 lb. N per 1000 sq. ft. (urea/46-0-0) on July 11 and 25 and August 9. Dollar spot and brown patch were visually evaluated on July 17. Turfgrass quality was rated on August 14. Data obtained were subjected to analysis of variance and Waller-Duncan K-ration t test.

Excellent suppression of brown patch was obtained with Ringer Experimental 1, Ringer Experimental 2, Sustane, and ASC 66912. Ringer Experimental 1 and ASC 66912 provided suppression of dollar spot that was statistically different from the check, and not statistically different from the Dyrene standard. Plots treated with Dyrene and ASC 66912 were rated highest in overall turf quality. Average thatch depth was unchanged (2.0 cm) during the May-August period of the experiment.

From **The Keynoter, Vol. 18, No. 4**
Pennsylvania Turfgrass Council

| Treatment | Formulation | Rate/1000 ft[2] | Disease Severity 17 Jul | | Turfgrass Quality 14 Aug |
|---|---|---|---|---|---|
| | | | Dollar spot | Brown Patch | |
| $KNO_3$ | 13.7%N | 0.73 lb | 7.9[1]a[2] | 4.8[3]abcd[2] | 2.9[4] i[2] |
| Nitroform | 38-0-0 | 5.26 lb[5] | 6.7 ab | 4.2 bcde | 4.4 defgh |
| Soil Inoculant I | G | 9.0 lb[5] | 6.7 ab | 5.0 abc | 4.8 cdef |
| ASC66899 | G | 6.6 lb | 6.4 ab | 3.8 de | 4.6 cdefg |
| Urea | 46%N | 0.22 lb | 6.3 abc | 3.2 e | 4.4 defgh |
| Kickstart | 8-0-0 | 4.0 fl oz | 6.3 abc | 3.2 e | 4.4 defgh |
| + Turf Micro | 0-5-0 | 1.0 fl oz | | | |
| + Potassium | 0-0-30 | 5.0 fl oz | 6.3 abc | 5.0 abc | 3.3 hi |
| $NH_4NO_3$ | 33.5%N | 0.3 lb | 6.3 abc | 5.0 abc | 2.9 i |
| Karsten Rx | | by prescription[7] | 5.4 bcd | 5.2 ab | 2.8 i |
| Soil Inoculant I | G | 6.0 lb[6] | 5.4 bcd | 5.4 a | 4.2 efgh |
| Check | | | 5.3 bcd | 5.4 a | 5.3 cde |
| Sustane | 5-2-4 | 10.0 lb[8] | 4.9 bcde | 4.0 cde | 4.1 h |

| Treatment | Formulation | Rat/1000 ft[2] | Disease Severity 17 Jul | | Turfgrass Quality 14 Aug |
|---|---|---|---|---|---|
| | | | Dollar spot | Brown Patch | |
| $(NH_4)_2SO_4$ | 21%N | 0.48 lb | 4.7 bcde | 5.8 a | 3.6 ghi |
| Sustane | 5-2-4 | 20.0 lb[8] | 4.5 bcde | 1.8 f | 5.4 cd |
| Ringer EXP 2 | G | 10.0 lb[8] | 4.5 bcde | 1.6 | 4.9 cdef |
| $NH_4C1$ | 26%N | 0.38 lb | 4.1 cde | 5.0 abc | 3.9 fghi |
| ASC66912 | G | 6.6 lb | 3.3 de | 1.8 f | 6.9 b |
| RingerEXP1 | G | 10.0 lb[8] | 2.9 ef | 0.8 fg | 5.7 c |
| Dyrene | 4F | 4.0 fl oz | 0.6 f | 0.3 g | 8.6a |

[1]Number of infection center per sq ft, mean of 5 replications.

[2]Within columns, means followed by the same letter are not significantly different, using Waller-Duncan K-ratio t test.

[3]0-10 visual rating scale, where = 50% infection, and 10 = complete infection of all grass in plot; mean of 5 replications.

[4]1-10 visual rating scale, where 1 = extreme poor quality turf and 10 = highest quality (no disease, excellent color, and high density).

[5]Two applications (5 Jun and 1 Aug)

[6]One application (5 Jun)

[7]Application levels determined by bi-weekly foliar analyses.

[8]Treatment applied on a 28-day schedule (5 June, 3 Jul, 1 Aug).

**ALAR, CONT.**

The keystone to this strategy was an agreement with 60 minutes to give them the exclusive right to break the story. Sixty-Minutes made a Faustian agreement not to show the report to anyone, including scientific experts who could have told them what was wrong with it. CBS ignored a February 1 press release from the EPA disclosing that new studies it had ordered found that Alar did not cause cancer in either rats or mice.

Instead of reporting this important information, 60 minutes set off a nationwide panic 25 days later by airing a report that began with correspondent Ed Bradley describing Alar as the most potent cancer-causing agent in our food supply. That falsehood was intensified by showing a big red apple with a skull and crossbones emblazoned on it. Panicky mothers dumped apple juice down the drain, and schools pulled the fruit from lunchrooms. Plummeting sales toppled many growers into bankruptcy, and the beleaguered apple industry now put its losses at more than $200 million. The NRDC's goal was to force the government to declare Alar an imminent hazard to health and take emergency measures to ban its use. The EPA, the Food and Drug Administration and the Department of Agriculture all denied that apples and apple juice posed any threat to health and refused to take the action the NRDC was demanding. The EPA did agree to take action to decertify Alar for use on food crops, following procedures that woul take at least a year, if scientific evidence proved to justify the action.

But the apple growers and processors and Uniroyal Chemical Co., the sole producer of Alar, bowed to the public hysteria orchestrated by David Fenton. Alar was withdrawn from the market even before all the rodent studies ordered by EPA had been completed.

From Northern Ohio **TURF**

---

MADISON HEIGHTS, Michigan — November 9, 1990 — Century Rain Aid has simplified its customer phone communications by placing all of its 19 branches in seven states under the umbrella of a new universal 800 number (1-800-347-4272 or 1-800-347-4CRA).

Calls will be answered by the appropriate branch based on the area code from which the call originates.

Century Rain Aid, headquartered in Madison Heights, Michigan has four branches in its home state, seven in Florida, three in Georgia, two in Illinois and one each in Indiana, Kentucky and Wisconsin.

The company, the largest in its field east of the Rockies, designs and provides supplies for sprinkler irrigation systems, aerators, fountains, landscape lighting and sprinkler installation equipment and machinery to commercail, industrial, office, residential and consumer irrigation markets.

## CONSIDER CREATION

All people of the Earth, each
and every nation
Arise and rejoice at
the continued creation
Of beauty, of springtime,
the yearly rebirth
Of our protector, our home,
our own Mother Earth!

Who despite man's
apparent lack of care
Creates bountiful splendour
for all to share
From mountain tops
to the deepest sea
All wonderful earthly
miracles bursting free!

Yet this miracle of renewal requires the helping hand
Of people to replenish and renew the land
From the largest of cities to the most remote farms
To unite in spirit and with the strongest arms,

Become a midwife to the birth of each flower
A guardian of our resources hour by hour
Man must learn to take time to appreciate
The miracles of which he did not create.

For God has given this wonderful treasure
And its preservation will be the measure
Of people who recognize and will celebrate
The birth of each season before it's too late.

In citizenship, in willingness to toil
We must bend our backs and tend to the soil
In stewardship, arise and applaud the worth
Of the wondrous marvel of our Living Earth!

Consider creation. . . Consider it now.

I ARISE in the morning torn between a desire to improve (or save) the world and a desire to enjoy (or savor) it. This makes it hard to plan the day.

E.B. White

**ONE CRUCIAL** test of good supervision is what happens when managers are not around. Do people carry on as usual or does everything grind to a halt? If things do slow down, it could mean you've let your people become too dependent on you.

Some managers are the world's greatest as long as they are there to supervise their people every second. But let them leave their desk for a day or so and the place seems to come apart at the seams. Disputes flare up, decisions aren't made, people slow down and start putting things off.

The way people work when their leaders aren't available reflects the difference between average and superior management. Good managers strive to build an organization that is so effective it can carry on without them.

The things that happen — or fail to happen — when managers are away depend a great deal on the way they normally operate. Some supervisors, unfortunately, enjoy having their associates completely dependent on them. They do all the important thinking, make all the major decision — and sometimes the minor ones as well. As a result, when they're not available, no one is prepared to assume leadership. Associates may be afraid to assume responsibility for desicions even in their own assigned areas.

Good managers, by comparison, act more like coaches than quarterbacks. They encourage people to take responsibility not only for the routine operation of their particular functions but the thinking as well.

They expect their associates to bring them not merely problems but also to recommend answers. They review their thinking, check their logic, raise objections which might not have occurred to the associate, and suggest alternatives that might not have been considered.

Basically, they help their people do a better job — but they don't try to do it for them. They are training **them** how to think about their problems. As a result, when they're not around, their people have a good idea how to carry on themselves, plus the confidence and courage to do so.

Sure — it's flattering to the ego to be the king pin, the indispensible person. But it's also comforting to have the kind of organization where you can step out of the picture for a few days and be reasonably certain that things are running smoothly while you're gone.

The best way to make yourself a candidate for promotion is to train associates who can carry on without you. It means you are obviously ready and available to move up.

Bits and Pieces,
December, 1979

# TEST YOUR FORESTRY AND RIGHTS-OF-WAY IQ

ANSWERS PAGE 29

1. It takes the wood from a _____ tree to keep the average American supplied for a year with newspapers, books, magazines, tissues, paper towels, housing, furniture, decks, fences, bags, boxes and other assorted wood products.

**a. 100 foot**
**b. 65 foot**
**c. 50 foot**
**d. 33 foot**

2. In the United States, we have _____ trees growing now than we did in 1900.

**a. fewer**
**b. more**
**c. just as many**
**d. half as many**

3. _____ owns 58% or most of the forest land in the United States, followed by _____ at 28% and _____ at 14%.

**a. Families, government, forest industry**
**b. Industry, government, families**
**c. Industry, government, foreigners**
**d. Industry, foreigners, government**

4. On the average, how many years does it take for a tree to grow 100 feet tall?

**a. 10**
**b. 25**
**c. 50**
**d. 60**
**e. 100**

5. How many people, all dependent on the renewable resource of trees, are employed by American forest industries and forest landowners?

**a. 500 thousand**
**b. 1.4 million**
**c. 410 thousand**
**d. 1 million**

6. A certified tree farm is a privately owned forest, managed to provide a continuous crop of trees. Among the benefits of tree farming are _____.

**a. improved wildlife habitat**
**b. watershed protection**
**c. outdoor recreation**
**d. improved aesthetic value**
**e. all of the above**

7. Today there are _____ certified tree farms encompassing _____ acres. Ten thousand professional foresters volunteer their time as tree farm inspectors.

**a. 64,000, 9 million acres**
**b. 23,000, 19 million acres**
**c. 64,000, 90 million acres**

8. The two most commonly used methods of roadside weed and brush control are _____ and _____.

**a. herbicides and mechanical mowing**
**b. herbicides and burning**
**c. mechanical mowing and burning**
**d. mechanical mowing and shearing**

9. Control of roadside weeds and brush is important for the following reasons _____.

**a. safety and visibility**
**b. shoulder maintenance and drainage control**
**c. control of noxious weeds and pollen**
**d. wildlife protection**
**e. all of the above**

10. Controlling weeds and brush with herbicides is generally two to five times _____ than mowing.

**a. more costly**
**b. more time consuming**
**c. less expensive**
**d. less effective**

## ANSWERS

1. **a**] Wood from a 100-foot tree will keep the average American supplied for a year with newspapers, books, paper towels, housing, furniture, bags, boxes and other assorted products made from wood. On the average, that's 613 pounds of paper products, 200 square feet of inch-thick lumber, 87 square feet of plywood and 59 square feet of insulating board, particleboard and hardboard used by each of us in a year.

2. **b**] America's forest industry and foresters have been working on tree farming techniques since 1941. As a result, we have more trees growing now than we did in 1900.

3. **a**] People are generally surprised to learn that families own most of the forest land in the United States (58%). Government owns the next biggest chunk (28%), and the forest industry comes next (14%).

4. **d**] On the average, it takes about 60 years to grow a 100-foot tree.

5. **b**] Approximately 1.4 million people are employed by the American forest industry and forest landowners with a payroll of $28 billion.

6. **e**] A tree farm is a privately owned forest, managed to produce continuous crops of trees with the added benefits of improved wildlife habitat, watershed protection, outdoor recreation and asthetic value. There are also city watersheds, school forests, and some smaller public ownerships certified as tree farms or forestry demonstration areas.

7. **c**] Today, there are 64,000 certified tree farms in the United States. Ten thousand professional foresters volunteer their time as inspectors for the 90 million acres enrolled in the tree farm system.

8. **a**] Mechanical mowing and use of herbicides are the two most common methods of roadside weed control.

9. **e**] Roadside weed and brush control is important for a number of reasons including safety and better visibility at intersections and curves; greater ease in reading road signs; improved shoulder maintenance; alleviation of bad drainage problems causing potholes; ditch maintenance; control of noxious weed seeds and pollen causing asthma; protection of wildlife for high traffic areas; and aesthetics.

10 **c**] Though the cost difference can vary greatly with the location, in general treating roadside weeds with herbicides is two to five times cheaper than traditional mowing methods.

From **PTC Keynoter, Fall 1990**

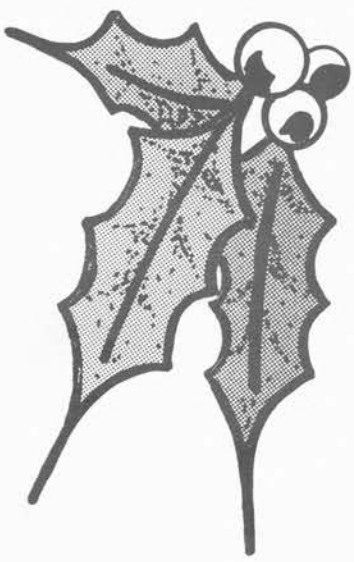
temperature spread. The very thick mats have done well, perhaps because they prevent mid-to-late winter thawing. These observations by superintendents in the area certainly make sense to me. Maybe that's the reason old timers topdressed heavily in late fall or put brush on the greens to hold snow cover. The basic idea may have been to protect against desiccation, but it provided insulation as well. (Or maybe there was less **Poa annua** to worry about in those days when the normal close mowing was a quarter-inch.) The insulation theory is valid, since the primary winterkill of Perennial Ryegrass fairways in Milwaukee (1986) was in areas receiving full sun, not the narrow, shaded fairways where mid/late snowmelt was minimal.

The problem today lies in the difficulty of making bentgrass more competitive during the growing season. This isn't difficult in fairways where the bent stolons have about a half-inch of growing room. But vertical space is hard to come by on a green where the cutting edge of a bed-knife is only one-eighth-inch above a firm surface. Mike Bavier at Inverness in Chicago commented on the vertical threshold in bentgrass spread between fairways and greens a few years ago. Just what that threshold is is still not know. It may be purely academic, because we are unlikely to see high-cut, slow greens again.

We need a feasible program to not only weaken or eliminate **Poa annua** but to make the bentgrass more competitive. To weaken poa without improving the bent just makes the turf chronically weak, usually in the most important areas on greens where the holes are cut or the walk-on/walk-off traffic is concentrated. I am concerned by the implication that growth retardants selectively affect **only** poa and that they will open the door to automatic bent encroachment into the poa-infested surfaces of closely mown putting greens. That idea is no more valid than a groomer being substituted for a verticut. We **just wish** it were true. It seems to me that interseding into weakened poa must be a part of the procedure, with appropriate after-care. Or perhaps just seeding at every topdressing?

This takes us, again, back to the basics of what makes plants grow — but we have to make that read **defoliated plants**. Among the requirements are well developed root system, an adequate amount of sunlight (for the remaining leaves or parts thereof), adequate fertility and moisture, adequate soil oxygen and protection against pests. It's getting harder to survive on a diet of magic potions, but even harder to perform some of the necessary cultural programs without interfering with an increased number of golfers every day. Working smarter and talking more convincingly have never been more important than they are today and that may call for assessing the programs of fellow superintendents who are dealing with similar programs, questioning "experts" and just "visiting around." The nineties will not be a good time to paint oneself into a corner by failing to look at the whole picture.

# Best Wishes for the Coming Season




**W.F. MILLER COMPANY**
GARDEN AND LAWN EQUIPMENT
25125 TRANS-X NOVI, MICHIGAN 48050
(313) 349-4100

"A Patch of Green"
31823 UTICA ROAD
FRASER, MICHIGAN 48026

FRASER MICH.

U.S. POSTAGE
PAID
BULK RT.
PERMIT NO. 37