

Putting Doesn't Pollute, Research Finds

By **STEVE TALLY**
Purdue University

Some of the most common chemicals used on golf courses -- fungicides applied to golf greens -- do not pass into surface water runoff or leach into groundwater, researchers said at the 1998 American Chemical Society meeting in Boston.

Ronald Turco, professor of agronomy and director of Purdue University's environmental Sciences and Engineering Institute, says that four years of research on fungicides at Purdue have found that fungicides do not present a problem to the environment if they are applied according to the manufacturer's recommendations.

Turco says that it is the unnatural state of the grass on the putting green that creates the need for frequent fungicide application. "Homeowners don't need fungicides," he says. "They're expensive, and the need is not there in taller grass. It's only when you start to cut grass to the short height that putting requires that you have to apply fungicides."

Fungicides make up less than 10 percent of all the pesticides used in the United States. Although they are used on many types of plants, including vegetables and fruits, they most often are used on golf courses. A 1993 study of golf courses in Iowa found that in one season, 54,000 pounds of the active ingredient of a particular fungicide were applied.

"That's what we have to do to get grass to grow at only one-eighth of an inch in height," Turco says. "In most years fungicides are only used on greens and tee boxes. These chemicals aren't cheap. They're much more expensive than herbicides."

Such heavy use in a small area led to concerns that the fungicides might run off into surface water or seep into the ground water. Prompted by these concerns, the United States Golf Association asked Purdue researchers to study the fate of fungicides applied to turf and funded the research.

In a series of experiments, both in the laboratory and out in the field, Turco and colleague Clark Throssell, professor of agronomy, examined where the fungicides went before they were broken down. They discovered that the fungicides don't wash off into the surface water or travel into the groundwater.

"The reality of any fungicide application to dense turf is that most of the fungicides doesn't reach the ground," Turco says, "About 90 percent of the fungicide remains on the grass leaf blade, where it is absorbed by the plant within 48 hours."

From there the plant degrades the chemicals internal-

ly, Turco says. The 10 percent of the fungicide that doesn't get absorbed by the grass leaf blade is caught up in the thatch layer, which is a narrow band of organic material on top of the soil.

"The thatch layer is a great binding agent," Turco says. "We've never seen any of the fungicides leaching out of the thatch layer. The fungicides get hung up before they reach the soil."

It is the chemical makeup of the fungicides themselves that causes this to happen: "They are large, sticky molecules. In the laboratory we had to take great caution not to lose them on liners and on our equipment," he says.

"They discovered that the fungicides don't wash off into the surface water or travel into the groundwater."

Besides the extremely short height on the grass on putting greens, Turco says that there are other golf course management practices that result in heavy chemical use.

"British golf courses don't use nearly the chemicals that our courses use," he says. "British golfers have a higher tolerance for less-than-perfect greens. Theirs are managed a lot less intensively than ours are, plus their climate is not as conducive to diseases in turf."

Turco says that even the design of American courses can lead to increased chemical use: "A lot of golf courses have trees surrounding a green, because it looks really nice, but trees around the green cause air stagnation and allow fungi to develop."

For golf course superintendents who have to manage these unnatural stands of green carpet for demanding customers, fungicides are a great help. "They are one of the few chemicals that you can spray on turf and see a difference within a couple of days," Turco says. "On the other hand, fungi can cause a green to turn brown in eight or nine hours. That can cause great disappointment to paying golfers and, in turn, tremendous stress on a golf course superintendent."

(Editor's Note: This article was reprinted with permission from GCSAA. For more information, contact Ronald Turco by telephone at (765) 494-8077, or Steve Tally at (765) 494-9809.)

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Trans-Miss Aids MGCSA Scholarship Program

'Minnesota Project' Competitions Provide Fun...and Funds

When two directors of the Trans-Mississippi Golf Association created what they called the "Minnesota Project" four years ago, little did they realize how one project would lead to another to assist the scholarship program of the Minnesota Golf Course Superintendents Association.

First the two men, Tom Garrett, a member of Somerset Country Club in St. Paul, and Hank Wilkinson, a member of The Minikahda Club in Minneapolis, developed an unusual alternate shot invitational played each October at Somerset. About 40 participants play 18 holes in 2½ hours (they really scoot around and don't wait for their partners' shots) in the morning, break for a Scottish lunch, play another rapid 18 in the afternoon, then socialize for an hour or so before heading home in late afternoon.

"It has become a traditional event for many golfers because it really is a lot of fun," said Garrett. "Each year our players' list grows, but we want to keep it at a size in which we can complete our morning and afternoon golf quickly but enjoyably."

HAZELTINE, MINIKAHDA START OTHER FUNDRAISERS

Just about the same time the Somerset Invitational was getting underway, two longtime members of Hazeltine National Golf Club — Tim Andersen and Mark Polich — originated the "Old Tom Morris Keeper of the Greens Memorial Day Tournament" with Jim Nicol, CGCS, at the Chaska course.

In this event members of Hazeltine's grounds crew are teamed with club members for an 18-hole competition followed by a social hour.

"The golf, of course, is fun, and it has become a relaxing way for members to get to know the grounds staff," said Andersen, who, with Polich, has played in several Trans-Miss tournaments around the country. "In addition, they learn a lot about what must be done to keep a golf course in good shape. It's also neat during the year to see members wave heartily to staff members they have gotten to know."

In 1998 Wilkinson developed a similar grounds crew-member event in the fall at Minikahda, which also has supported the Trans in a variety of ways ever since it was host to the association's fourth match play tournament in 1904.

"It's been most enjoyable to hear the good comments from the members and superintendent Doug Mahal and his staff," said Wilkinson. "It's something we plan to continue for years to come."

'Minnesota Project' Contributes \$4,500 To MGCSA Scholarships

For the past couple of years the "Minnesota Project" of the Trans-Mississippi Golf Association has been building a fund to help the scholarship efforts of the Minnesota Golf Course Superintendents Association.

In 1998 a contribution of \$1,500 was made. This year that amount was tripled to \$4,500.

As a result the MGCSA — with its available scholarship money and that contributed by the Trans — was able to grant five \$1,500 scholarships to:

Jason Habeck, St. Charles, Iowa State University;
Andrew Kjos, Benson, Penn State University;
Eric K. Ritter, Burnsville, also at Penn State;
Brandon M. Schindele, Stillwater, University of Minnesota;
Chad Wilson, Utica, Iowa State University

"We really appreciate what Tom Garrett and Hank Wilkinson have been doing to help our scholarship program," said John Queensland, chair of the MGCSA Scholarship Committee, "and our thanks also go to all the participants at Somerset, at Hazeltine and at Minikahda."

"Because of their efforts, we were able to make bigger grants as well as to add two more scholarships," Queensland said.

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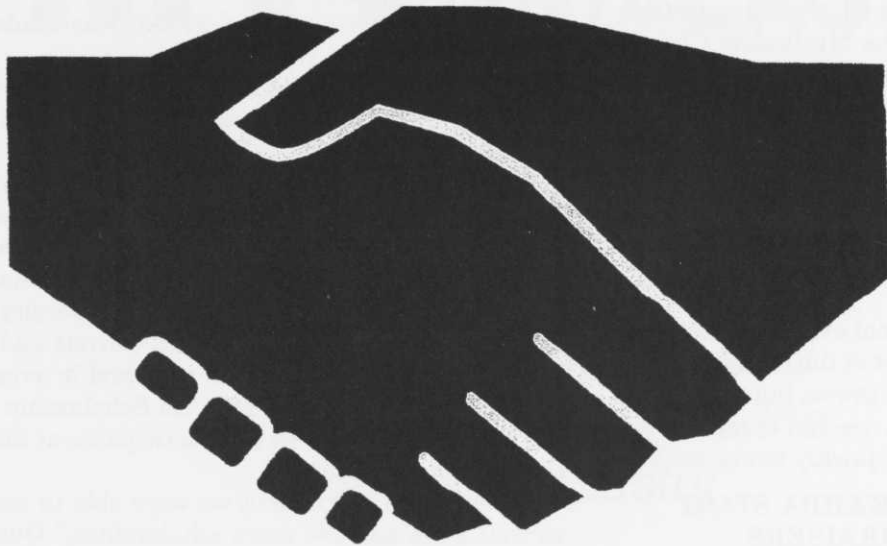
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In this section you will find a copy of the materials presented at the Chapter Delegates Meeting, frequently asked questions and a schedule of upcoming presentations at chapter meetings. New features will also be added as the PDI develops.

You'll find it at:

http://www.gcsaa.org/members/pdi/pdi_fr.html

ELECTRONIC NEWS SERVICE COMING SOON

Over the next several months, GCSAA will be introducing the GCSAA NewsWeekly, a brand-new electronic publication designed to fill you in on what's happening in the golf course management industry. Short highlights of the week's news will be sent to you by e-mail each Thursday, with links provided to the full articles for more information.

In addition, you also will be able to catch the publication from the home page of GCSAA Online. Regular features may include new product announcements, people news and tournament information as well as construction trends, research reports and news about how weather conditions are affecting golf course maintenance.

For more information or to drop off a story idea, contact Ken Moum, GCSAA online news editor, at mailto:kmoum@gcsaa.org — or call him at 800-472-7878, ext. 428.

INFORMATION ON ENVIRONMENTAL STATUTES

Did You Know ... (a regular section highlighting useful features on the site) ... that the full text of GCSAA's Environmental Desk Reference is now available on the web site? This guide provides information on the many types of environmental statutes and local ordinances that may impact golf course operations. Topics include pesticide and herbicide use, wildlife management and conservation, as well as wetlands concerns. Visit the guide at http://www.gcsaa.org/members/govrel/edr/edr_front_page.html

TECHNOLOGY UPDATE

Although we try to avoid the use of plug-ins for viewing site content, occasionally there are features we just can't offer any other way. So here's the short list of the plug-ins you need to take full advantage of the GCSAA web site:

• **Adobe Acrobat Reader** — The reader allows you to use the MSOS database, read PDF articles in the GCM archive database and download forms such as the print

version of the conference and show registration form.

Get the reader:

<http://www.adobe.com/products/acrobat/readstep.html>

• **QuickTime 4** — QuickTime allows you to watch small video clips on your web browser. In the past we've used QuickTime to bring you clips of GCSAA's "Par for the Course" cable TV show, the association's new TV spot and the recent video news release prepared for the Ryder Cup.

TV Spot — <http://www.gcsaa.org/members/cardev/tvspots.html>

Video News Release — <http://www.gcsaa.org/gcm/may99/vnr.html>

Get QuickTime — <http://www.apple.com/quicktime/download/index.html>

GOING TO NEW ORLEANS?

If you're planning to attend the GCSAA Conference and Show in New Orleans in February, check the Annual Show Web site, which features real-time registration, online travel arrangements, comprehensive event information, an attendee directory, a personal itinerary planner, the current exhibitor list and much, much more.

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Trans-Mississippi Golf Association Nears 100th Birthday

For 45 of Those Years, It Has Provided Turf Scholarships

Founded in 1900, the Trans-Mississippi Golf Association is one of the oldest and most prestigious golf organizations in the United States.

Composed of approximately 200 member clubs primarily located west of the Mississippi River to the Pacific Coast, the Trans seeks to promote the true spirit of amateur golf and develop friendly competition among members of member clubs.

In the late 1950s it organized its Trans-Mississippi Turf Scholarship Fund, a 501(c)3 corporation which makes annual grants to young men and women pursuing careers as golf course superintendents.

The money raised primarily comes from its two major golf tournaments (a match play competition in July and a four-ball tournament in September or October), club dues, individual and corporate contributions and special events like the "Minnesota Project" tournaments.

TRANS BOOSTS NATIONAL GRANTS 57%, NOW PROVIDES \$51,000 ANNUALLY

A 57 percent increase in educational grants this fall was announced by the Trans-Mississippi Turf Scholarship Fund, the philanthropic arm of the Trans-Mississippi Golf Association.

Scholarships to university students pursuing careers in turf management have been boosted from \$32,500 to \$43,250 annually. In addition, a new category of \$7,750 in educational grants has been budgeted for a new program being developed with the Golf Course Superintendents Association of America, said S.I. Russell, Jr., Sherman Oaks, Calif., Trans-Miss president and chairman of its scholarship committee.

"The \$51,000 we now are giving is one of the major grants of the turf industry," said Russell.

The University of Minnesota is one of 14 schools that receive Trans-Miss grants. The others are Arizona, California State Polytechnic at Pomona, Colorado State, Iowa State, Kansas State, Michigan State, Missouri, Nebraska, Oklahoma State, Oregon State, Penn State, South Dakota State and Texas A&M.

2000 TRANS SET JULY 10-15 AT WHITE BEAR YACHT CLUB

The 97th Trans-Mississippi Championship, a mid-amateur tournament, will be conducted July 10-15, 2000 at White Bear Yacht Club, continuing its pattern of holding its competition on some of the nation's finest golf courses.

This will be the 11th time this popu-



lar tournament — held for the first time in 1901 at Kansas City Country Club where it will return in 2001 — has been played in Minnesota.

Previous championships were held five times at The Minikahda Club in Minneapolis (1904, 1912, 1923, 1981 and in 1994 when it was held in conjunction with Somerset), twice at Woodhill Country Club in Wayzata (1959 and 1988) and once each at Interlachen (1916), Golden Valley (1931) and Edina (1966).

No tournaments were conducted during the World War II years of 1943, 1944 and 1945). Minikahda again will be the host club in 2007.

The association's 20th Four-Ball Championship will be held October 24-26 at River Oaks Country Club in Houston.



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Talented Local Superintendents Will Headline March 6 Seminar Set at Park Place Hotel

By **MICHAEL KLATTE, CGCS**
Chairman, Arrangements Committee

The five speakers at this year's MGCSA March Mini-Seminar all have one thing in common: creativity and an eye for the future. All five will educate us all with their innovations on March 6, at the Park Place Doubletree Hotel in St. Louis Park.

Steve Schumacher, superintendent at Izaty's Lodge and Yacht Club at Mille Lacs Lake, had to work with architects on a new design for his already interesting golf course and add another nine-hole regulation course. He tells me he will be talking about construction of the golf course and its efficient watering system.

Michael Olson, superintendent at Golden Valley Country Club, and **Robert Distel**, superintendent at Wayzata Country Club, will collaborate as host speakers on bunker restoration. Each had different reasons for doing these projects, and the contrast will be very interesting.

The idea of putting bunkers back to their original form will be illustrated nicely by Michael. Bob will present a more practical reason why his bunkers needed to be moved closer to his greens and why fairway bunkers were moved

strategically in their relationship to championship golf.

Tom Kientzle, superintendent and general manager at the Legacy Courses at Cragun's in the Brainerd Lakes area, will put us through the step-by-step process involved in the construction of this great new course. Tom also was involved right from the start in the construction of The Pines at Grand View Lodge when he was superintendent at this Nisswa course, also in the Brainerd Lakes area.

Tim Johnson, superintendent at the Spring Hill Country Club in Orono, will provide us with the newest venue in the country club scene. This course was created to be very exclusive and money was not a limiting factor. Tom is new to our area, and the seminar will provide a good opportunity for him to describe his new course during the construction and grow-in period.

Last but certainly not least at this year's MGCSA Mini-Seminar will be representatives from Professional Development Initiative (PDI). This presentation will center on GCSAA initiatives on how the national association is dev-

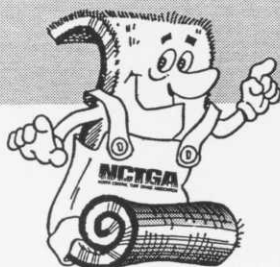
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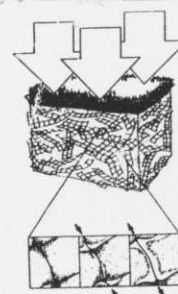
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Safety on the Golf Course: The Proper Perspective

Despite reports to the contrary, researchers indicate golfers should not be alarmed by the application of plant protectant materials on golf courses.

"Any discussion of health concerns must be based on accurate data," says Jeff Nus, Ph.D., director of research for the Golf Course Superintendents Association of America (GCSAA). "Any discussion must also include an accurate portrayal of risk."

According to Nus, safety begins with the professional responsible for the application of materials on the golf course, the golf course superintendent. Those in charge of treating golf courses must, by law, be trained and licensed, and their operations are subject to inspection. He notes application of plant protectants in excessive amounts and frequency is not only fiscally irresponsible, but unhealthy for turfgrass as well. Nus explains that golf course superintendents monitor the drying process to allow golfers access to the course.

"Research has shown that once the pesticide dries on the leaf of the turfgrass plant, you really can't just casually brush it off," says Clark Throssell, Ph.D, and co-director of Purdue University's Turfgrass Research and Diagnostic Center. "To get any pesticide at all you have to take a rough cloth and vigorously rub the grass leaf. Obviously, no one out playing golf is going to do that in the course of a round. As we take another look at these pesticides, overall we're finding that they provide almost

no risk for casual exposure to levels that would be of any concern."

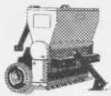
Christopher Borgert, Ph.D., a toxicologist who has served as an adviser to the federal government on toxicity testing for pesticides and industrial chemicals, points to previous research that indicates those who apply chemicals for their livelihood do not suffer a greater degree of health problems than the normal population. Common sense suggests that these individuals are more highly exposed than golfers.

"From a personal standpoint, exposure to chemicals on the golf course under normal circumstances is certainly not something I would worry about," Borgert says. "My personal viewpoint is relevant because my family and I live next to a golf course. Any concern for hormonal disruption is unfounded. It is not supported by the available data or sound reasoning."

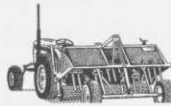
All agree, however, that the golfer bears some responsibility to make the golf experience as healthy as possible. Golfers should not put tees in their mouths, lick golf balls or put cigars or cigarettes in contact with the ground. Common sense should be the rule in making contact in any outdoor environment, including the golf course.

(Editor's Note: This article was reprinted with permission from GCSAA. For additional information: contact Jeff Nus, Ph.D., GCSAA Director of Research, (800) 472-7878, ext. 429.)

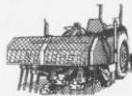
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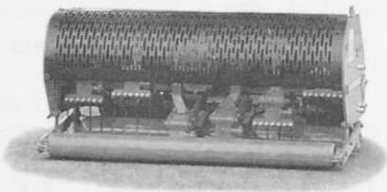


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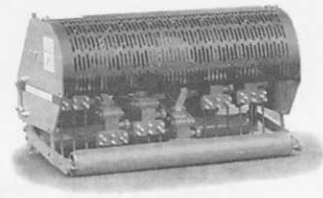


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