



1994 Turfgrass Conference Registration Packets Out

By now, all NTA members and other interested parties should have received a **Registrant Registration and Program Packet** or a conference announcement for the 48th Northwest Turfgrass Conference scheduled to be held in Gleneden, Oregon at the Salishan Lodge and Conference Center September 26-29, 1994. The first mailing of registration packets went out the middle of June and the final mailing, to those not already registered, went out the middle of July. If, for any reason, you haven't received your registration packet and you would like one, call the NTA office.

Enclosed in this issue of the newsletter is a copy of the conference **Schedule of Events** and **Education Program**. This year's conference is sure to be one of the best ever. Great, informative educational sessions; golf; tours-both educational and entertaining; scrumptious food; fun entertainment; an opportunity to renewal old acquaintances; and, all in a resort setting. What more can you ask for? We look forward to seeing you there.

Board Approves 94/95 Annual Budget

The NTA Board of Directors has approved a \$95,000 dollar budget for the fiscal year July 1, 1994 to June 30, 1995. This budget includes an appropriation of \$23,470 for research and scholarship funding of \$5,000. The association ended the 92/93 fiscal year with a net worth of just over \$105,000 and the net worth for the 93/94 fiscal year end has yet to be determined.

1994/95 Board Director Nominations and Elections

The NTA Nominations Committee, chaired by Immediate Past President Becky Michels, will present a slate of four board director nominees for a vote of the members during the annual meeting of the members scheduled for Wednesday, September 28, 1994 during

the annual conference. The nominating committee chair is requesting that anyone interested in being considered for nomination by the nominating committee contact her through the NTA office by the first of September. Nominations may also be made from the floor when the nominations committee report is made during the annual meeting.

The election of board directors will take place during the meeting. Members present at the meeting will be eligible to vote on the board directors. Directors are elected for three year terms unless elected to fill out an unexpired term.

Suppliers Invited To Be 1994 Conference Sponsors

Turf grounds maintenance and irrigation suppliers and others are being invited to become a financial **Sponsor** of an activity or event during the **1994 Northwest Turfgrass Conference**. The goal of the "Sponsor Program" is to provide industry suppliers with an opportunity for tax deductible advertising and, at the same time, through the reduction in conference costs, free-up more funds for research and scholarships.

During last year's very successful trial of the program, only golf tees were available for sponsors. This year **golf tees, honoraria, events** and/or the **overall conference** will be available for sponsors. In exchange for a tax deductible donation, a sponsor will be recognized with a very professionally done multi-colored reproduction of the their company logo. Golf tee sponsors will have their sign displayed on the golf course and at various sessions throughout the entire conference. Honoraria, event and overall conference sponsors will have their company logo reproductions on display throughout the conference and receive recognition in the NTA newsletter during the year following the conference.

A Sponsor Program Sign-up Form is enclosed.

**Northwest Turfgrass Conference
September 26-29, 1994
Salishan Lodge**

President's Message

*"Whenever July and August do not boil,
September cannot fry."*

old weather proverb

I hope that all of you are surviving the "dog days" of this hotter than normal summer. As I write this, the temperature outside is once again climbing beyond ninety, perhaps well beyond. The long range forecast is for more of the same. Runaway wild fires are scorching the Northwest and dominate the news. Our sincere best wishes to any NTA members whose work and lives have been affected by these fires.

Those of us with inadequate irrigation systems and large populations of annual bluegrass can take some solace in the proverb above, if we can just get through August, that is. No matter what, the cool breeze of the beautiful Oregon Coast at our annual meeting in September, should come as a welcome relief from the rigors of this record setting summer.

The Board of Directors and NTA staff are working hard to bring you an outstanding conference at Salishan Lodge this year. If you haven't already, please note that the conference has been scheduled for the week of September 26th through the 29th.

Board Director and host superintendent, Mark Snyder, and Salishan head golf professional Grant Rodgers have planned a first class golf tournament and get acquainted reception to kick off what should be one of our best conferences ever. The entry fee includes a cart, lunch, tee prize and a chance at more prize money than before. Remember that the field is limited so be sure to get your registration in early.

The educational sessions will be first rate with such notable presenters as; well known motivational speaker Mrs. Bobbie Gee, Dr. Thomas Watschke from Pennsylvania State University, Larry Gilhuly and James Moore from the USGA, Roy Goss, Tom Cook and many other distinguished speakers from around the Northwest. Kudos to Board Director John Monson for putting together an excellent program.

Oregon and Washington State Pesticide recertification credits will be available as well as GCSAA recertification units. The total amounts have not been determined as we go to press but we are shooting for eight to ten credit hours.

Randy White and the Research and Scholarship Committee have identified research projects and scholarship candidates worthy of our financial support. The problem is, as always, more that needs doing than money to do it.

Don Clemans and Tom Wolff continue to work on our

Association By-Laws. This task is most important and time consuming. I cannot thank Tom and Don enough for their efforts. We hope to present revised By-Laws for your approval at the Annual Meeting.

Finally, it is with much regret that we accept the resignation of Vice President Tim Haldeman from the Board. Tim has had a change in job duties that will prevent him from fulfilling his NTA obligations to his high standards. We will miss Tim's wit and wisdom at the Board and wish him the very best in his future endeavors.

Tom Christy, CGCS
President

1994 Research and Scholarship Fund Raising Campaign Continues

Tom Christy, NTA President and Randy White, NTA Research and Scholarship Fund Committee Chairperson, remind us that the **1994 Research and Scholarship Fund Raising Campaign** is still underway. For the last few years NTA has annually given out over \$35,000 in research grants and \$5,000 in scholarships. The success of the annual fund raising campaign is a key factor in the level of support NTA can provide to these efforts and donations are running behind schedule as of this date.

Intimately involved with turfgrass management, we realize more than most, that today's turfgrass quality is the result of knowledge and technological gains resulting from research and education accompanied by hard work and effort. We owe our thanks today to those who gave their time and money to make the research and education possible yesterday. Hopefully future generations will be able to say the same about us.

Donation forms have been mailed to members and industry supporters and a copy is enclosed. Donations are **tax deductible** and those contributing to the research and scholarship fund are recognized in the annual **Directory of the Northwest Turfgrass Association**.

Buy a share today in better turfgrass for tomorrow.

1994/95 Annual Directory Preparation Has Begun

Preliminary work on the **1994-95 Annual Directory of the Members** has begun with printing and distribution scheduled for October or November following the annual conference. Now is the final opportunity to be sure you're included in the directory for the up-coming year

Northwest Turfgrass Association
**TURFGRASS SCHOLARSHIP
ANNOUNCEMENT**
(for 1994/95)

The Northwest Turfgrass Association (NTA) is now accepting applications for turfgrass scholarships for 1994/95. Scholarships generally range from \$500 to \$1000.

Scholarship applicants should complete a copy of the attached **Scholarship Application Form**. Applications should be typed.

Guidelines the NTA will use when considering applicants include the following:

1. applicants shall be enrolled in a college or university in the Pacific Northwest working toward a turfgrass science related degree;
2. applicants must: have completed the first year at a two year community college or vocational/technical institute; be a junior or senior in a four year college or university; or be a graduate student;
3. applicants shall have outstanding qualities as individuals and students including integrity, initiative and leadership; and,
4. applicants shall have a desire to make a contribution to the turfgrass industry and profession in the Pacific Northwest.

The schedule for consideration of scholarship applications is as follows:

December-January	Scholarships announcement
February-March	Scholarship applications received
April-May	Scholarship applications reviewed and approved
June-July	Scholarship notifications
August-September	Scholarship disbursements

All scholarship applications for 1994/95 should be submitted to the NTA office (P.O. Box 1367/Olympia, WA 98507) no later than **March 30, 1994**. Questions relating to scholarships should be directed to the NTA office-(206) 754-0825.

Northwest Turfgrass Association
**TURFGRASS
SCHOLARSHIP APPLICATION
FORM**

(Applications and supplemental documentation must be typed)

Application Date _____

Student's Name: _____ Age _____

Mailing Address: _____

Institution: _____

Faculty Advisor: _____

Name

Title

Department

Advisor's mailing address: _____

Applicant's major field of study: _____

Current class standing: _____ Jr. _____ Sr. _____ Graduate Student

Accumulative grade point: _____ Last semester/quarter grade point _____

Accumulative grade point in major field of study: _____

Number of semester/quarter hours taken to date: _____

Experience in turfgrass work: _____

Experience on other jobs: _____

(over please)

Name and relationship of any close relatives associated with the turfgrass industry: _____

Name and relationship of any close relatives who are members of the Northwest Turfgrass Association: _____

List all other grants or scholarships, and amounts received, for the upcoming scholastic year: _____

Describe (in 500 words or less) your reasons for requesting a scholarship. Include in the above a brief autobiography, a statement of your sources of financial support, your commitment to the turfgrass industry and the Pacific Northwest, and future goals. (Complete on separate page and attach.)

Mail Application To:

Research & Scholarship Committee
Northwest Turfgrass Association
P.O. Box 1367
Olympia, Washington 98507

Application Submittal Deadline: MARCH 30 (postmark)
(Note- FAX submittals will not be accepted)

FOR FACULTY ADVISOR (Handwritten signature must appear)

I recommend this student for a Northwest Turfgrass Association Scholarship:

Signed _____ Date _____

Additional Comments:

Northwest Turfgrass Association Scholarships are awarded without regard to sex, race, creed, or national origin.

Northwest Turfgrass Association
**TURFGRASS RESEARCH
REQUEST FOR PROPOSALS
ANNOUNCEMENT**
(for 1994/95)

The Northwest Turfgrass Association (NTA) is now accepting proposals relating to turfgrass research for the 1994/95 academic year.

Research proposals must be submitted in the following format:

1. a **cover page** (see attached form);
2. a one page **executive summary** to include: the title of the research project being conducted or proposed; the date of submittal; an indication of whether the proposed research project is a continuation of a project previously funded by NTA or a new project; a brief overview of the research project being conducted or proposed; and,
3. a **detailed explanation** of the research project being conducted or proposed, including: the date of submittal; a title for the research project being conducted or proposed; information pertaining to its need, purpose, desired outcome; and anticipated activity schedule; information on the procedures to be employed; a budget for the project along with an overview of the anticipated sources of funding; and, how NTA will be kept informed on progress pertaining to the project.

Consideration of proposals will be in accordance with the following guidelines:

1. they shall be from sources within the Pacific Northwest;
2. they must be for activity that will directly benefit the turfgrass industry in the Pacific Northwest; and,
3. the activity shall be underway or initiation shall be imminent.

The schedule for consideration of applications is as follows:

December-January	Requests for Proposals announcements
February-March	Proposals received
April-May	Proposals reviewed and approved
June-July	Grant notifications
August-September	Grant disbursement

All proposals for 1993/94 should be submitted to the NTA office (P.O. Box 1367/Olympia, WA 98507) no later than **March 30, 1994**. Questions relating to research funding should be directed to the NTA office-(206) 754-0825.

so, if you haven't gotten your dues in yet or you have a change of address or phone that you haven't notified the NTA office about, now is the time to do it.

1994/95 Annual Directory Advertisers Sought

Advertisers are currently being sought for the **Directory of the Northwest Turfgrass Association for 1994/95**, scheduled for distribution in the fall. The cost of publishing the directory is covered by advertising, so membership dues can be used for information, research and scholarship activities.

Planning for the directory has begun and any suggestions members may have concerning its content would be appreciated by the NTA staff. The annual directory, the most complete and up to date listing of turf management-related professionals in the Northwest, includes an alphabetical listing of active members by name with a cross reference by company; NTA Research and Scholarship Fund contributors; officers and committee chairs for the association; cooperative extension offices in the region; green industry publications and associations; and, a guide to sources for turf grass related technical assistance.

Potential advertisers should contact the NTA staff at the NTA office- (206) 754-0825.

Names In The News

Arden Jacklin, one of the original founders of Jacklin Seed Company, passed away recently in Spokane, Washington. Jacklin was 82. From 1941-1985, Jacklin served as president of the company during with time it became the world's largest producer of Kentucky bluegrass.

L.E. Schrader, dean of the College of Agriculture and Home Economics at WSU for the last five years, has announced his decision not to serve a second term.

Larry James, has been selected to serve as interim dean of the College of Agriculture and Home Economics effective August 1, 1994.

James "Jack" Murray, former USDA research agronomist, died on May 15 at his home after a long battle with cancer. He was 54. Murray was an internationally-known expert in turfgrass breeding and management.

Gary Willis and Professional Turf Center in Tigard, Oregon recently became a new full-line BEST Professional Products Distributor for Oregon and

Southwest Washington. For information call (503) 245-2140.

The 8th annual **Inland Northwest Turf and Landscape Trade Show** will be held January 26, 1995. For information contact (509) 535-8305

Richard "Monty" Montgomery recently became Director of Golf Operations for Teufel/Leahy Golf Course Construction of Portland, Oregon. Monty comes to Teufel/Leahy from the Robert Trent Jones II organization where he was Director of Field Operations for Greenscape over the past four years.

Rod Bailey, president of Evergreen Services Corporation, Bellevue, Washington, has been named to the *Landscape Management* Editorial Advisory Panel.

Management Aids

The **Basic Handbook on Athletic Field Maintenance** is available through the National Institute on Park and Grounds Management intended to provide basic necessary information to sports turf management crews. For details contact: NIPGM, P.O. Box 1936, Appleton, WI 54913.

A video entitled, **Success with Bedding Plants**, is available through the Professional Plant Growers Association. The video covers how to select, install and maintain bedding plants. For details contact the PPGA at 800 647-7742.

(continued on page 4)

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Management Aids *(continued from page 3)*

For the results of the 1994 Sandoz National Environmental Poll, a telephone interview style polling of 2,050 professionals who apply pest control products conducted by the Gallup Organization, contact Sandoz Agro, Inc. (708) 699-1616.

For a reprint from the *Journal of Environmental Quality*, Vol. 23, no. 3, May-June 1994 entitled **The Role of Turfgrasses In Environmental Protection and Their Benefits to Humans** by James B. Beard and Robert L. Green, contact 800 405-8873.

A Final Thank You To The 1993 Conference Sponsors

The 1993 Northwest Turfgrass Conference was the first conference suppliers participated in the newly developed "Sponsorship Program." Suppliers were invited to sponsor a tee or hole during the conference golf tournament by purchasing a sign to be displayed on the course and during other major events throughout the conference. Tom Christy, chairman of the committee that developed the program last year, described the response as outstanding. The sponsors participating in the program included the following companies:

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Each of the 14 sponsors should be recognized and thanked for being a sponsor. All of their donations, above the cost of the signs, went into the NTA Research and Scholarship Fund.

Turfgrass Research

by Dr. Dave Wehner
University of Illinois, Urbana, Ill

Turfgrass managers are frequently asked, "What do you do over the winter?" As you all know, the answer to this question is work, on equipment, attend educational conferences, plan for the upcoming year, etc. University professors are asked, "What do you do over the summer?" Most people assume that anyone involved in education has their summers free. Well, we tend to do turfgrass research over the entire year, but we are heavily involved in field work during the summer. I would like to talk about what I consider to be the three components of a turfgrass research program. They are the short term research studies aimed at providing immediate answers, the long term research designed to shape turfgrass management practices of the future, and what I will call the "research infrastructure". Let's address the research infrastructure first.

Research Infrastructure

Just as the infrastructure of a city are its roads, mass transit, water delivery system, etc. the infrastructure of a turfgrass research program are the researchers and the research facilities. The infrastructure is somewhat like an insurance policy. If a serious problem occurs, there are researchers that can immediately go to work to try to solve the problem. In 1980, when bacterial wilt occurred on Toronto creeping bentgrass, funding was provided to plant pathologists from other states who were involved in finding a solution to the problem. One of the byproducts of this disease outbreak was the addition of a full-time turfgrass pathologist to the staff at the University of Illinois. The ITF funded one-half of the cost of this position for the first three years, and then, the position was

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added to the University budget. In essence, the University of Illinois, by having several turfgrass scientists, has the infrastructure to address serious turfgrass problems. Fortunately, we have not faced a major problem since the bacterial wilt outbreak.

Short-Term Research

Being involved in the turfgrass program at the University of Illinois means trying to provide the turfgrass industry with answers to current questions and also with information that will help shape the management practices for the future. An example of the first type of research are the herbicide, fertilizer, and cultivar trials that we routinely conduct at our field research site. For example, we have tested the herbicides dithiopyr (Dimension) and prodiamine (Barricade) for the efficacy against crabgrass. These two herbicides are the most recent additions to the list of chemicals that will control crabgrass. The results of our research were of immediate use to the turfgrass industry in that they provided directions on how to use the compounds and assisted in the development of their labels. Herbicides as well as turfgrass cultivars, need to be evaluated in many different parts of the country to ensure that they will be successful.

Long-Term Research

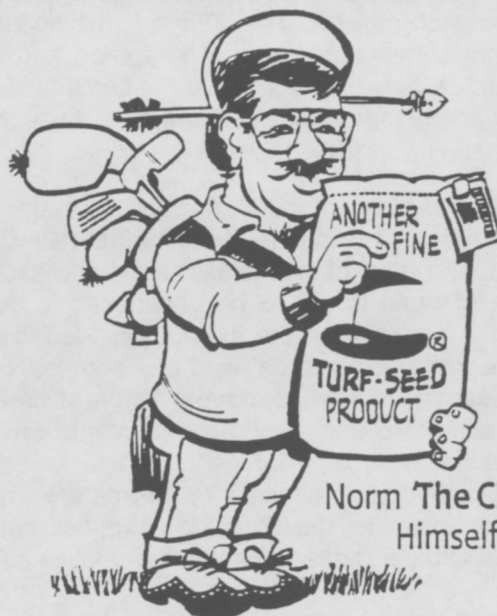
An example of a study that is aimed more towards influencing future management practices is the research we are conducting on nitrogen utilization efficiency of turfgrasses. The Illinois Turfgrass Foundation provides funding which is used to defray the cost of this project. The goal of this research is to identify grasses that will grow well under low levels of nitrogen and to understand the reason why one grass is better adapted to low N conditions than another. We have been successful in finding cultivars of Kentucky bluegrass that grow better under low N conditions than others. The Kentucky bluegrass cultivars that we found to be efficient in the utilization of N in solution culture (growing plants in a nutrient solution) were also nutrient efficient in soil pots placed in a greenhouse. The next step is to evaluate their ability to grow in the field under low N conditions. In addition, we are currently evaluating creeping bentgrass cultivars.

The results of our research with nutrient utilization efficiency will have an effect on turfgrass management practices in the future. We will be able to recommend grasses that will be provided good quality under low levels of N. This results in lowered costs to maintain turfs and reduced possibility of N leaching through the root-zone. We still have many questions to answer about the results of our screening research such as, "Do these grasses do well in the field and how much actual N can be saved and still provide acceptable quality?"

(continued on page 6)

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Turfgrass Research *(continued from page 5)*

It is important to have a program that provides both types of research. It is equivalent to an industry refining existing products at the same time that new products are being developed.

The ITF is providing assistance with both these types of research projects. The ITF funds the operation of our turfgrass research center, where short and long term research is being conducted. At the same time, the ITF funds each research for individual projects such as evaluating nutrient utilization.

The turfgrass researchers at the University are always open to suggestions for projects that may be of interest to the industry in the state. The determination of what types of projects are to be undertaken is determined by the expertise of the individuals, the facilities that may be required, and the level of resources available. For example, we do not have a turfgrass breeder at the University, and thus, we do not attempt to conduct research in the area of plant genetics and breeding. Other studies might be directed by the nature of our facilities. For example, the creeping bentgrass putting green at our Urbana research center is on native soil.

Additional factors are involved in determining the direction of our research. Is the project suitable for a graduate student? Can the questions be answered in a reasonable amount of time? Will it take an extraordinarily large amount of resources to accomplish this project? Has the research been done before? Can the results be published in a scientific journal?

There is no question, that without your support, the turfgrass program at the University of Illinois would probably not exist in its current form. Please keep us informed of your concerns, and do not hesitate to make suggestions on the direction of our research.

Beware Summer Heat Stress, Fatal in 1 of 10 Severe Cases

Now that the warm season is here, and you and your co-workers will be spending long hours outdoors, you need to keep on the lookout for signs of heat stress.

Heat stress is the illness that occurs when your body is subjected to more heat than it can cope with. The personal protective equipment worn during pesticide handling activities can increase the risk of heat stress by limiting your body's ability to cool down.

Mild forms of heat stress will make you feel ill and impair your ability to do a good job. You may get tired sooner, feel weak, be less alert, and be less able to use good judgement.

Severe heat stress is fatal to more than 10 percent of its victims—even young, healthy adults. Many who survive suffer permanent damage. Sometimes, the victims remain highly sensitive to heat for months and are unable to return to the same work.

Learn the signs and symptoms of heat stress and take immediate action to cool down if you suspect you or one of your colleagues might be suffering from even mild heat stress.

Symptoms — Signs and symptoms may include:

- fatigue (exhaustion, muscle weakness)
- headache, nausea and/or chills
- dizziness and/or fainting
- severe thirst and/or dry mouth
- clammy or hot, dry skin
- heavy sweating or complete lack of sweating
- alerted behavior (confusion, slurred speech, quarrelsome or irrational attitude).

Drink! — When you work up a sweat or need to quench a thirst, remember the cheapest, healthiest, most readily available refreshment there is: water. A body needs six to eight 8-ounce glasses of fluids every day. Water is non-caloric and non-fattening. By drinking lots of water, your body learns to retain less fluid. And always drink past the point of quenching your thirst; the extra water will guard against dehydration.

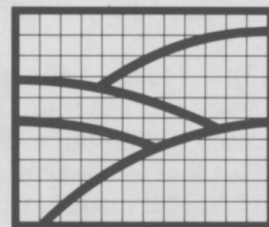
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First aid — It's not always easy to tell the difference between heat stress illness and pesticide poisoning. The signs and symptoms are similar. Don't waste time trying to decide what's causing the illness. Get medical help.

First aid measures for heat stress victims are similar to those for persons who are over-exposed to pesticides:

1. Get the victim into a shaded or cool area.
2. Carefully remove all personal protective equipment and any other clothing that may be making the victim too warm.
3. Cool the victim as rapidly as possible by sponging or splashing the skin—especially the face, neck, hands and forearms—with cool water. If possible, immerse the victim in cool water.
4. Have the victim, if conscious, drink as much water as possible.
5. Keep the victim quiet until help arrives.

*Information courtesy of the
Professional Lawn Care Association of
America, through its newsletter*

Scientific Examination Confirms Turfgrass' environmental Benefits

After more than 10 centuries of human use, the environmental benefits provided by turfgrasses are scientifically documented in the May-June, 1994, issue of the peer-reviewed "Journal of Environmental Quality." Examining a long list of functional, recreational and aesthetic turf benefits, Dr. James Beard and Dr. Robert Green's lengthy treatise concludes that, "the complexity and comprehensiveness of these (turf's) environmental benefits that improve our quality-of-life are just now being quantitatively documented through research."

Environmental benefits of turfgrass documented in the article include: soil erosion control and dust stabilization; groundwater recharge and surface water quality; organic chemical decomposition; soil improvement and restoration; heat dissipation-temperature moderation; noise abatement and glare reduction; decreases of noxious pests, reduced allergy-related pollens and human disease exposure, security for vital installations and lower fire hazard. The researchers also report scientific support for recreational and aesthetic benefits that include improved mental health, social harmony and improved productivity.

Addressing the concern of turf's water use, the researchers reported, "there is no valid scientific basis for water conservation strategies or legislation requiring extensive use of trees in shrubs in lieu of turfgrasses. The main cause for excessive landscape water use in most situations is the human factor."

The scientists strongly recommend that, "It is critical to educate the general public that the darkest green turf,

which many people strive for, is in fact not the healthiest turf. A medium green turf with a moderate growth rate will have the deepest root system with less thatch, reduced disease and insect problems, and increased tolerance to environmental stresses such as heat, drought, cold and wear."

Dr. Bear, formerly with the Department of Soil and Crop Sciences, Texas A&M University and currently heading the International Sports Turf Institute, joined with Dr. Robert L. Green, Department of Botany and Plant Sciences, University of California-Riverside, to carefully examine the available scientific support for various environmental benefits claimed for turfgrass. Following review by a panel of scientists to assure complete accuracy, their report was published in the "Journal of Environmental Quality," the scientific journal of the American Society of Agronomy, Crop Science Society of America and the Soil Science Society of America.

Rules of Golf Test Questions


Following is a test on the rules of golf. See how you do.

1. A legal hole location
 - a) is at least 4 paces from any fringe area
 - b) must not have more than a three-to-one slope
 - c) is not defined in the rules of golf

(continued on page 8)

CAMBRIDGE SPORTSTURF DRAINAGE

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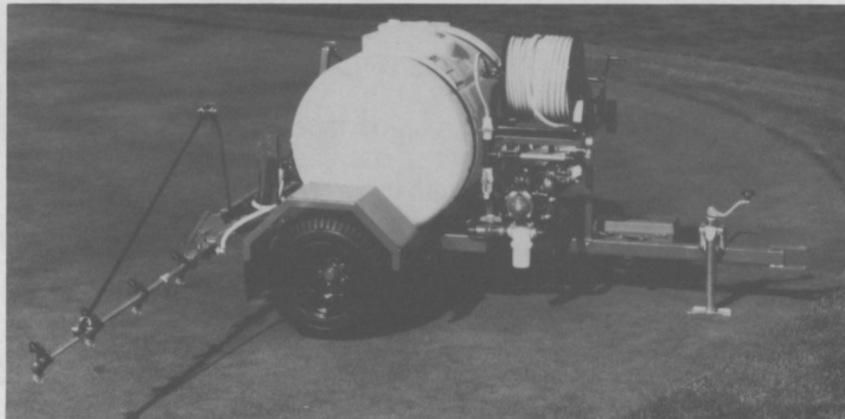
The diagram illustrates the drainage system components: a 9" Deep layer, a 16" Typical layer, and a 48" Typical layer. It also shows the Grass Surface, Sand Backfill, High Flow Poly-Pipe With Perforations, and Native Soil.

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Turfgrass Research *(continued from page 5)*

2. A player's ball lies in a lateral hazard. How many options does the player have?
 - a) three
 - b) five
 - c) one - stroke and distance
3. A player's ball rolls into a hole made by a green-keeper. It is not marked "ground under repair." What should the player do?
 - a) declare the ball unplayable and drop within two club lengths of the spot where the ball lay, not nearer the hole, and add one penalty shot to his score
 - b) play it as "ground under repair"
 - c) put another ball into play under stroke and distance
4. During a stroke play competition, the green crew wants to get a head start on preparing the course for the next round. They may:
 - a) mow fairways or roughs but not greens between groups
 - b) mow anywhere on any hole behind the final group, keeping distance between themselves and the players
 - c) do any necessary maintenance without regard to the players
5. During play of a hole, the cup is damaged so as to make it unplayable. Who may fix the hole?
 - a) any player
 - b) a member of the green crew
 - c) a tournament official
6. The right side of a hole is densely wooded with thick underbrush. Lost balls in this area slow down play. The green committee can:
 - a) declare that any ball hit into that area is automatically lost
 - b) encourage use of the provisional ball rule
 - c) mark the area a lateral hazard
7. The teeing ground is defined as:
 - a) the area between two tee markers
 - b) an area measured from the outside edge of two tee markers which is two club lengths in depth
 - c) a closely mown area specially prepared for teeing the ball
8. Under the rules, the major areas of the golf course are:
 - a) the teeing ground of the hole being played; the putting green of the hole being played; the putting green of the hole being played; any hazard on the course; all other areas in play which are termed "through the green"
 - b) tees, greens, hazards and grassed areas
 - c) tees, greens, water hazards, bunkers, fringes, aprons, rough, fairway, waste areas, woods and obstructions
9. Out of bounds is an area from which play is not permitted. In order to protect oncoming golfers on an adjacent hole, the committee erects in course out of bounds on a hole. The O.B. applies only to the hole being played. The committee:
 - a) acted in accordance with the rules
 - b) acted outside the rules; in course O.B. is illegal
 - c) acted outside the rules; the O.B. must apply to both holes
10. A mysterious disease has attacked the fringes around all the greens on the course. The city championship begins play tomorrow. The committee should:
 - a) mark all the affected areas "ground under repair"
 - b) do nothing; the areas of concern are so widespread that they have become part of the course condition
 - c) adopt a local rule prohibiting play from the fringes

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11. A water hazard is so situated that a player's options under the water hazard rule are limited. The committee elects to install a ball drop behind the hazard. The player:
 - a) must use the ball drop if his ball goes in the water
 - b) must use the ball drop only if he elects to drop behind the hazard
 - c) may consider the ball drop as an option in addition to those provided in the rule
12. A pile of grass clippings has been accumulating in a disposal area adjacent to a hole. A player's ball comes to rest next to the pile. The player may:
 - a) take relief under the "ground under repair" rule
 - b) play his ball as it lies or declare it unplayable
 - c) take relief under the immovable obstruction rule
13. When both stakes and lines are used to mark a water hazard:
 - a) the stakes identify the hazard, and the line defines its margin
 - b) the lines identify the hazard and the stakes define its margin
 - c) the lines and stakes are only as a courtesy to the player; the water hazard margin begins at the water's edge
14. A player's ball comes to rest in a divot hole. The divot is lying, roots up, adjacent to the hole, but still partially attached to the ground. The player may:
 - a) remove his ball from the divot hole, repair the divot and then place his ball on top of the repaired divot
 - b) play the ball as it lies or declare the ball unplayable
 - c) detach the divot, cast it aside, and then play the ball
15. A violent though brief afternoon storm has left the golf course wet but playable. Some areas have standing water, others are soft but a player cannot see water around his feet when at address. Players:
 - a) will get relief from casual water in both situations
 - b) will get relief from the standing water in both situations
 - c) will get casual water relief from standing water and relief from "ground under repair" in soft areas
16. A pile of brush in the left rough of a hole will be removed later in the day. A player's ball comes to rest near the pile. The pile interferes with the player's follow through. The player:
 - a) may take relief from the pile, which is deemed "ground under repair"
 - b) must play the ball as it lies or declare it unplayable
 - c) may move his ball only enough to allow himself a free swing
17. Player A's ball comes to rest in a water hazard. The player can play the ball, but an immovable obstruction in the hazard interferes with his swing. Player B's ball comes to rest outside the hazard, and his swing is restricted by the same obstruction.
 - a) both player A and player B get relief from the obstruction
 - b) neither player gets relief from the obstruction
 - c) player B gets relief; player A does not
18. A player's ball comes to rest on a putting green other than the one of the hole he is playing. The player must:
 - a) play the ball as it lies
 - b) drop the ball at the closest point which is off the putting surface and not closer to the hole
 - c) proceed under stroke and distance
19. A player's ball is embedded in rough. The local rule allowing relief in this situation is in effect. The player lifts his ball, drops it in accordance with rules, and the ball rolls almost two club lengths, coming to rest in the fairway. The ball:
 - a) is in play
 - b) must be re-dropped, and must remain in the rough
 - c) such a local rule is not allowed; the player must replace his ball in its original pitch mark and add one penalty stroke

(continued on page 10)



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Rules of Golf *(continued from page 9)*

20. Player A's ball lands short of the green and spins backward, making a pitch mark in the fringe between the ball and the hole. Player B's ball subsequently lands on A's line, also making a pitch mark in the fringe. Player A is entitled to:
- a) fix both pitch marks
 - b) fix neither pitch mark
 - c) fix B's pitch mark, but not his own.

by Jim Sweeney, USGA

Keep Weeds in Check All Season Long

Are you planning a good, comprehensive weed control program for your turf in 1994? Great idea. But if you're smart, you already started on it last Fall. That's when the best cool-season turf managers lay the groundwork for fewer weed problems come Spring.

Healthy, dense turf goes a long way toward keep weeds out. If your turf went into the Winter in good shape, barring any heavy Winterkill it should be in prime condition to fend off most intrusive species.

"Where I would expect to find weeds is where the turf is in bad shape coming of this Winter," said Tom

Voigt, extension turfgrass specialist at the University of Illinois.

But areas of the Midwest soaked by heavy flooding last Summer won't necessarily be doomed to heavy weed infestation—if you were able to get on your turf to work on it. "Most of our wet weather occurred during the Summer, so those who worked in the Fall to get their turf in shape have a good chance of coming out of it in decent shape," he said.

His advice: Go out early in the season to ascertain the condition of turf in areas where you most expect trouble. "The areas where turf is thin are optimal for weed invasion," Voigt said.

Annual grasses like crabgrass and broadleaf weeds like knotweed are among the first culprits to show up in the Spring. They are extremely opportunistic, muscling in where turf is poor and spotty.

Use a good preemergent herbicide just before crabgrass first germinates. But if you're planning to overseed thin spots, be choosy about your preemergent, Voigt said. Siduron (Tupersan) is about the only option for avoiding injury to newly seeded cool-season turfgrass, he said.

If turf is healthy and had little crabgrass or goosegrass problem last year, and you won't be overseeding,

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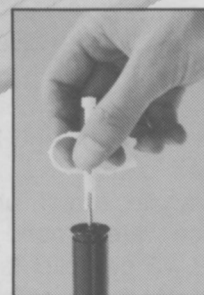
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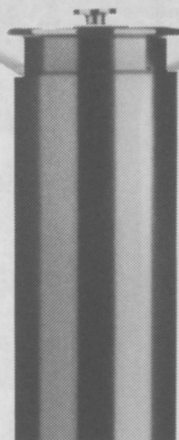
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another method for controlling annual grasses is to use no preemergent. Wait to see where grassy weeds come in, then hit those spots with a postemergent effective on grasses such as Dimension (dithiopyr) or Acclaim (fenoxypyr), Voigt suggested. "If you're comfortable with the quality of your turf, you may be willing to just wait and use a postemergent," he said.

Broadleaf Control

Broadleaf control with a postemergent containing a phenoxy or dicamba should be applied when weeds are actively growing. Chemicals are more easily absorbed then and, once weeds are killed, the turfgrass can fill in the gaps quickly.

"People complain that their herbicides didn't work," Voigt said. "But if the right herbicide is used on the right weed, application is usually the problem. The timing is critical—you want to make sure the weeds are actively growing for it to work."

If temperatures are too warm for cool-season turf to grow, discoloration and failure to control weeds may result, he said. Earlier in the season, when temperatures are cooler, ester formulations should work fine, but as temperatures warm and volatility a problem, less-volatile amine formulations are a better choice.

And, of course, reading the label and learning the biology of turfgrass and the weeds themselves are essential. "For example, many perennial broadleaves that are cool season, such as dandelions, follow growth cycles similar to turfgrass," Voigt said. "So when your bluegrass lawn is growing actively so are the dandelions, and that's when you want to apply controls."

A good weed control program doesn't disappear come Fall. "You can do a whole lot of good in the Fall," Voigt said. Many perennial cool-season weeds are once again going through an active growth period. And there's less chance that drift or volatilization will harm other plants.

Late Weeds This Spring

A cold, dry Winter will probably result in late-germinating Winter annuals in the transition zone, said Dr. Dennis Martin, extension turf specialist at Oklahoma State University. "I think people who put Roundup on early over the dormant bermudagrass are going to be surprised," he said.

Martin said a postemergent herbicide like Trimec or Weedone DPC applied at the same time as preemergent crabgrass herbicide will help.

One good thing about the Winter—the cold has been consistent. No wide swings in temperature probably means little winterkill, Martin said.

If you think you might have had some winterkill—but can't determine that before it's time to apply a preemergent—choose Barricade (prodiamine), Ronstar (oxidiazon) or another herbicide typically used on newly sprigged bermuda, in case you end up re-sprigging turf.

Martin recommends standard split applications if turf has a history of problems with goose or crabgrass. And be sure irrigation, fertilization, insect and disease control and other maintenance programs are fine-tune in order to maintain a dense healthy turf and keep weeds out.

Achieving a dense turf stand is also important before using a turf growth regulator. "Especially in the northern part of our region, where you have to regrow 50 to 60 percent of the bermudagrass canopy, it's important that you have turf as dense as you want it before you use a growth regulator," Martin said.

Martin has another reminder for those using growth regulators—they don't work on weeds in the same manner as turf. Good weed control is not replaced by a turf growth regulator, but must be used in combination.

Know Your Turf

Go outside and take a close look at your turf this Spring—that's the first step in good weed control, says Tom Cook, turfgrass extension specialist at Oregon State University. Note thin areas and reseed them.

Using an inexpensive thermometer, begin monitoring soil and air temperature. Push the thermometer into the soil about one inch deep in areas where soil will warm up first—south-facing slopes and open areas near sidewalks and driveways.

Crabgrass germinates at 55 to 60 degrees F, and a preemergent should be applied about two weeks before germination. "When soil temperature is above 50, that's when you should apply preemergent," Cook said.

A combination product of several herbicides, like Trimec, is still the best strategy for broadleaf weeds, giving broad-spectrum control and allowing lower rates of the dicamba, Cook said. But long-term use can also result in resistance in weeds like oxalis and ground ivy. In that case, switch to another herbicide such as triclopyr.

When spraying broadleaves, be careful of other plants. "Spring weed control is a kind of strange experience," Cook said. "When it's optimal to spray for broadleaf weeds, that's when trees and shrubs are most susceptible to drift."

Before leafout, use an ester formulation; afterward, an amine form of the product will minimize potential injury to ornaments.

Source: Turf West, March 1994

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NTA Board Meeting

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1. (c); 2. (b); 3. (b); 4. (b); 5. (c); 6 (b); 7. (b); 8. (b); 9. (a); 10. (b);
11. (c); 12. (b); 13. (a); 14. (b); 15. (b); 16. (b); 17. (c); 18. (b);
19. (a); 20. (c)

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