

## An Architect's Opinion Multiple Tees for Everyone

by Bob Lohmann

A well-designed golf hole is playable by all classes of golfers, is easily maintained, and is pleasantly attractive to the eye. In our highly geometric and mechanical society, the golf course should provide a desirable diversity of natural landscape. We require diversity in the landscape. If we build a home in the forest, we will clear the backyard; if we build a home in a farmland subdivision, we will surround it with trees and shrubs. When people go to a golf course, it should be scenic and orderly, as well as diverse. The order present in a golf course is the progression from tee to green to succeeding tee. The diversity of the golf course is the different sizes, shapes, and locations of the design elements. This combination of order and natural diversity, if designed and built properly, is what makes a pleasingly scenic golf course.



As in everything, you have to start someplace, and as we all know, a golf hole starts with a tee. In earlier years, the tees were known as "starting boxes." Many people today still refer to them as "tee boxes". As I travel to many courses, especially older models, I see many of the "tee boxes." They are small, square or rectangular, and lack the natural beauty that should be present on a golf course. Not only are they unattractive, but they are hard to maintain as well. Because only one small fee is used, the superintendent is limited to where he can place the tee markers. He never has the opportunity to close off or rest part of the tee to allow the grass to grow properly.

The tees on the older courses have become surrounded by older trees that are large, full shade giving, and air blocking. No one enjoys removing trees, especially an older specimen. But the lack of air circulation and sunlight make it extremely difficult to grow grass on a small tee that is watered at night and walked on and cut up all day.

The tees begin to show wear about midway through the season, and if they are too small, the continued beating creates an eyesore that never has a chance to recover until fall when the golfing season is over. At this time, if the tee is only resurfaced and not enlarged, the problem reoccurs and not enlarged, the problem reoccurs the following season. If a country club would spend the time and money to enlarge the tees properly, or better yet to design and build additional tees, the wear problem would be alleviated. If properly planned and executed, the design of the golf hole could be improved at the same time. With the addition of multiple tees, the golf hole can vary in length and also in the line of the attack. With the new golf equipment and the better caliber of golf being played, shorter golf courses must change from being a challenge of length to being a challenge of shot making.

The good golf course is challenging and fair for all golfers and not always penal to the higher handicapper. The new tees should be placed relative to the location of the fairway hazards and landing areas. The tee locations are based upon the length

of the golfers' tee shot. A suggested range would be as follows:

back tee	225 to 275 yards
middle tee	175 to 225 yards
front tee	125 to 175 yards

Usually the tees would be placed so the fairway hazards come into play for tee shots landing in the latter part of each tee range. It is impractical and impossible to set up each hole the same for each golfer from each tee. But with the use of multiple tees, the shorter hitters are provided a fair and reasonable length golf course.

Each tee should be built large enough to allow for two and possibly three sets of tee markers to be placed on it. Depending on the wind direction and velocity, the pin placement on the green and the caliber of golfer on the tee, the markers can be set up to create a difficult or easy golf hole.

Many clubs contend that because of the limited amount of play on their courses, the tees do not need to be very large. But in the last ten years, even though the U.S. population has grown by only 10.5 percent, the number of frequent golfers has risen to 30 percent. Combining the probability of an increased amount of golfers and the possibility of creating a variety of golf shots from a single hole, multiple tees are a much needed improvement for all courses.

New larger multiple tees, if constructed properly, will fit naturally into the site and alleviate the eyesore of a small, square, continuously worn-out tee. Just as the entrance road gives a first impression when arriving at the country club, the tees should set the stage for each golf hole.

The design of tees, especially size and location, is as important as the construction techniques. Proper time allotted for both will reward you with tees that are unique and natural, that blend pleasantly into the golf course, and that improve the playability of the golf hole.



The Golf Course Superintendents Association of America (GCSAA) is planning two war memorials February 11, 1985 during GCSAA's 56th Annual International Golf Course Conference and Show in Washington, D.C.

One of the ceremonies — planned with the assistance of U.S. Senate Majority Leader Robert Dole (R-Kan.) — will be at the Vietnam Memorial. The other will be at the Tomb of the Unknown Soldier in conjunction with the Spouse Program.

Wreaths will be laid at both shrines in honor of those who made the supreme sacrifice for their country. (Further details on the two ceremonies will be furnished later).

Veterans of all nations who served during the Vietnam War, the Korean Conflict, World War II and World War I, as well as others who are interested, are invited to participate in the ceremonies. Veterans of these wars are especially needed to assist with the wreath laying.

Anyone, especially veterans, interested in assisting with the ceremonies are asked to contact GCSAA Associate Executive Director James G. Prusa, CGCS, by calling toll free 1-800-GSA-SUPT.



*President Joe Williamson welcoming the audience to the 32nd Midwest Clinic which was held at the Rosemont Exposition Center of the Hyatt Regency O'Hare on December 12th, 1984.*



*Peter Leuzinger telling how to use Embark in combination with other cultural practices.*



*Cecil Kerr talking on what else, but how to use Tri-calcium arsenate.*



*Dudley Smith presenting Art Wick with a plaque in appreciation for his talk on the "State of the Seed Industry".*



*Jim Evans discussing how he used Endothal and Linuron on his course.*



**Winners of the Ray Gerber Editorial Award**  
*1984 winner on the left is Bruce Williams for his article "Lightning Can Strike Without Warning" and the 1983 winner (the first time it was awarded), Dave Ward.*



**1984 Ray Gerber Editorial Award Winners**  
*Ed Wollenberg on the left was the Honorable Mention Award winner for his fine article, "The Good Old Days" with Bruce Williams the 1984 award winner.*

## Midwest Breezes



### Upcoming Events — Mark Your Calendar

**February 9th** — 6:30 a.m. Prayer Breakfast GCSAA Conference, Washington, D.C.

9:00 a.m. Keynote Address by Jack Whitaker, GCSAA Conference

**March 4-5-6** — Purdue Conference. This will be Dr. Daniel's last conference before he retires.

**March 11th** — Monthly meeting of MAGCS at Nordic Hills C.C. - Evening meeting.

**March 12th** — LESCO & Stauffer Chemical seminar at Elmhurst C.C.

**March 28th** — CGGA Green Seminar at Butterfield (tentative).

**May 20th** — MAGCS monthly meeting at Silver Lake C.C.

**June 17th** — MAGCS monthly meeting at Sunset Ridge (tentative)

**June 24th** — ITF Golf Day at Glen Oak C.C.

**November 12** — Midwest Clinic at Medinah C.C.

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The seminars held by the GCSAA and MAGCS at Pheasant Run C.C. on January 7th & 8th were the best attended seminars ever put on by the GCSAA outside of the seminars that are held at the national conventions. The attendance was 95, with 62 taking the Golf Course Design and 33 taking Insect Identification. Out of those numbers we had 23 people from other states and Gordon Witteveen from Ontario, Canada. Twelve states were in attendance including Illinois. People came from Wyoming, Arizona, North Carolina, and Florida, plus all of the surrounding states. Everyone stated that it was well worth the trip, for both seminars were outstanding. If you are one of the ones who have not attended one of these local GCSAA seminars, you are missing the boat. These seminars are excellent and they are half the cost of the same identical seminars put on at the national conventions. Next year be sure to get yourself registered.

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**For Sale:** Two Toro Riding Greensmowers, 1 National Mower, 1 Toro General Tractor. Call: Ted Mochel at Idlewild C.C. (312) 798-0514.

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For the April issue of "The Bull Sheet" I would like to put together a page of a "Swap-Sell-or Trade." Everyone has excess equipment or something that they don't use or would like to get rid of. Let's all make a list of what you have, type it up, put prices on if you care to, put names and telephone numbers down and get it to me by March 10th. Let's clean out our equipment buildings and make more room.

### Committee Appointments — 1985

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#### Dr's. Duich & Randell to speak

Lesco and Stauffer Chemical Company will be presenting a seminar on Tuesday, March 12th, 1985 at the Elmhurst Country Club. The seminar will be from 8 a.m. to 3:30 p.m. Coffee and rolls to start the day, with lunch provided. Dr. Duich will be speaking on the latest bentgrass developments and conversions to bent fairways. Dr. Randell will be discussing the identification and control of common turfgrass insects and the outlook for 1985.

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Our friend Tom Burrows, long time member of the Midwest has recently been experiencing a terrible family tragedy. His college son Scott was involved in a bad traffic accident in Florida and at present is paralyzed from the neck down. Scott is a spunky kid and has, according to doctors, a chance of pulling through this terrible injury and walking again. Besides needing your prayers and good wishes for Scottie's recovery, a Recovery Fund has been set up in his behalf. Any donations would be gratefully appreciated. The Fund is listed as follows:

Scott Burrows Recovery Fund, 1st National Bank and Trust, P. O. Box 2316, Stuart, FL 33495.

Anyone wanting to mail get well wishes - Scott is hospitalized at Craig Hospital, 3425 S. Clarkson St., Englewood, CO 80110.

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## **Computer Communications**

by T. W. Fermanian, Univ. of Illinois

During the past year, Toro and RainBird Irrigation have announced new computerized irrigation control systems utilizing an IBM PC computer. These computerized systems offer greater control and ease of use over previously designed irrigation systems. If you read through the clever advertisements, you will notice that neither system is no longer solely dedicated to the task of irrigation controlling. With these systems, a personal computer is now available for other tasks.

With most other equipment used for turfgrass management, if it accomplishes a single task efficiently, one is well satisfied. A mower that cuts greens is not expected to mow roughs, fairways, or football fields. Many sites now have spraying equipment for pesticide application for use on a specific type of turf (fairway mist blowers, etc.). A personal computer, however, is unique in this regard in that it can be used for many tasks; versatile enough to handle diverse needs and still available for its major function (irrigation control).

The next greatest activity to utilize a personal computer lies in the business management of a turf site. Personnel record-keeping, supply inventories, budgeting, and a wide variety of other accounting and record-keeping can be accomplished in a shorter time span while providing greater information than manual based systems. Currently, several firms are writing and producing software to meet those needs and there are a few software package available for immediate use.

However, it must be pointed out that software is not available for the science or art of growing grass. Several programs, which are committed to the production of superior turf are being developed. The University of Illinois is presently developing an Expert Systems for turf management to provide timely advice and decision support for turf managers and should be completed over the next several years.

Another area of potential use for computers has been developed and offers immediate help. Computer communication, or the ability to access data, information, and messages over telephone lines, has already been built to a high level of sophistication. The following categories are examples of communication tools that are immediately available to turfgrass managers.

### **Current Weather Data**

Recently, a computerized weather data bank, called Climate Assistance Service (CLASS), was installed at the University of Illinois by the Illinois State Water Survey and the Illinois State Natural History Survey. This data base contains historical weather data from over 65 weather stations throughout Illinois and surrounding states. Weather data is generally current up to the previous 24 hours. Information is available on minimum and maximum air temperatures, soil temperatures, precipitation, soil moisture, and the soil moisture index. Six-, ten-, and thirty-day forecasts are also listed. Weather data can be viewed for either one location or summarized for the entire state.

This system can be accessed with either a terminal or microcomputer via a wats line (800) 252-7307 from 9 a.m. to 5 p.m. daily. For communications settings, baud rates of 300 or 1200 are acceptable. The CLASS computer will automatically interpret the incoming baud rate and change to the appropriate rate. Use seven data bits, one stop bit, and set the terminal or microcomputer for full duplex.

### Dialog Information Services, Inc.

The Dialog Information Services provide instant access to more than 80 million references to journals, newspaper articles, conference papers, and reports in over 200 data bases covering all areas of science, business, medicine, social science, current affairs, and humanities. In addition, an online national "yellow pages" is available. Through the use of simple commands, one can access information on any subject desired. I have successfully used the system to locate references for thatch control and turfgrass fertilization. With experience, searching becomes relatively easy. There is no monthly service charge or initiation fee for use of the Dialog system. The user is charged for each search that is made. While some searches can be expensive, planning before linking with the system can minimize costs. A subset of the Dialog Information Services, called Knowledge Index, is available at a less expensive rate. For more information on Dialog or Knowledge Index, call the toll free number (800) 227-1927.

### Compuserve and The Source

Two similar yet slightly different services are available from Compuserve and The Source. Each service offers a much smaller library of information than Dialog Information Services but offer various other services. These services range from direct access to UPI news information and stock market quotes to a CB simulation for direct conversation with individuals on different computers. Additionally, both systems also allow the storage of information on the system and access to many valuable programs and useful services. Oh yes, games are available on each service as well. For more information, call (800) 848-8199 for Compuserve and (703) 734-7500 for the Source.

### Bulletin Board Services (BBS)

Many personal computer owners have opened up their machines to access from other computers throughout the country. These systems allow the transfer of messages, files of information, and programs both to and from the called personal computer. These systems are called Bulletin Board Services or BBS for short. They are often run at the systems operator's (SYSOP) expense, and many systems are available 24 hours a day. Generally, the callers only expense is the toll charge for long distance telephone connections. While most BBS are computer related, many are dedicated to specific topics such as hobbies, sports, dating, or occupations. Listed here are several generally purpose IBM PC BBS which, in many cases, lists the numbers of additional BBS.

### Online Computer Telephone Directory BBS Information Exchange

Phone (913) 649-1207, Kansas City, MO. 300/1200 baud, no parity, eight data bits, one stop bit. SYSOP: Jim Cambron.

### PC Users Group Information

Phone (301) 949-8848, Rockville, MD. 300/1200 baud, no parity, eight data bits, one stop bit. SYSOP: Rich Schinnell.

### IBM PC Information Exchange (usually very busy)

Phone (312) 882-4227, Chicago, IL. 300/1200 baud, no parity, eight data bits, one stop bit. SYSOP: Gene Platz.

New terminology is evident throughout the descriptions of communication systems available for the computer. Data bits, stops bits, parity, and baud rate are probably foreign to your vocabulary. These all represent various communications settings for your computer system that need to be set, or adjusted,

(cont'd. page 16)



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(Computer cont'd.)

to contact these external computers. Baud rate is a measure of the speed at which data is transferred through the telephone. For most intensive purposes, 10 baud units are equal to a single character, such as a letter of the alphabet or a number per second. A rate of 300 baud, therefore, means the transfer of 30 characters per second. Likewise, 1200 baud sends 120 characters per second. Not all information sent across the telephone line are data. Each piece of information, called a bit, will either represent data or some kind of a control mechanism to tell the receiving computer how to interpret the stream of information being sent down the line. Each character consists of one stop bit, and a stream of seven to eight data bits followed by one or two stop bits. Generally, these settings are all one needs to know to implement correct communication settings for outside computer communication. Several other factors, i.e., turn around time, and hand-shaking protocol can also come in to play. These will be explained in greater detail at the 1984 NCTE Workshop on Computer Communications on December 11.

As previously mentioned, the appropriate program or software is necessary to handle conversion of information from one computer to a form which can be transferred across telephone lines and then converted into useful information on the receiving end. This communication software comes in various forms and can range in cost from several hundred dollars to availability at no charge. My recommendation for first time communications is to obtain a copy of PC-Talk III which is available at no cost from any computer use group or BBS. This software runs only on the IBM PC. Should you be unable to locate a copy locally, it can be ordered, at a cost of \$35, from the Headland Press, Inc., P. O. Box 862, Tiburon, CA 94920; telephone (415) 435-9775.

In addition to the appropriate communications software, several pieces of hardware are also required. Information is normally transferred internally within the computer, in groups of eight to 64 bits at a time. However, for external communication, these groups need to be broken up into individual bits. This is done through an asynchronous card or port. Check with a local computer store for details on the appropriate card for your machine.

In addition to the card, an instrument called a modem which stands for modulation-demodulation is required to convert the stream of data bits into the appropriate telephone signal for transport down the line to the receiving computer. On the receiving end, a modem must also be connected to the telephone to reassemble the stream of signals into the appropriate data bits. Modems, like many instruments for connection to a computer, come in various sizes, shapes, and have many different features. Basically, they sit either outside of the computer attached up to the telephone or fit within the computer and require the telephone cord be plugged into a socket in the back of the system.

The advantages of the external modem are in its portability from one computer to another and, more importantly, a series of lights which indicate the status of the connection and processing of the signal across the telephone. The disadvantage to the external modem, which is an advantage to the internal type, is the compactness and savings of desk top space. As well, internal modems generally incorporate an asynchronous port on the same card. Thus, the amount of necessary equipment is minimized.

## The Present and Future of Turfgrass Varieties<sub>1</sub>

by Dr. William A. Meyer<sub>2</sub>

There has been a tremendous increase in cool season turfgrass breeding in the United States in the past twelve years. The major increase has been in the number of private companies as a result of the passage of the U.S. Plant Variety Protection Act of 1971. This Act allows the breeder and owner of a newly developed variety to obtain exclusive U.S. production and marketing rights. Other individuals cannot produce or market a protected variety without the permission of the owner. Many improved varieties of Kentucky bluegrass, perennial ryegrass, tall fescue and fine fescue are now on the market as a result of the many breeding programs.

### National Turfgrass Evaluation Program

In 1982, Jack Murray, a turfgrass specialist of the USDA, Beltsville, MD, initiated the development of the National Turfgrass Evaluation Program (NTEP). This program will develop and coordinate uniform evaluation of turfgrass varieties and blends for the U.S.

This program will be a self-supporting, non-profit program sponsored by the Beltsville Agricultural Research Center and the Maryland Turfgrass Council. It is not a federal program. A policy committee made up of members from the different regions of the U.S. will administer the trials.

Each year the NTEP will send out different turfgrass species to be planted in uniform trials throughout the U.S. The owner pays a fee to cover the distribution costs of the seed, and the accumulation and analysis of the data. The yearly summaries from each test will be available upon request.

The NTEP has already released the first 2 years of data from the 1980 Kentucky bluegrass trials that included eighty-four varieties. In 1982 a perennial ryegrass trial with forty-seven varieties was distributed for trials. The 1982 NTEP trials included thirty tall fescue varieties, and forty-seven fine fescue varieties. The NTEP program will provide excellent information to the turfgrass industry as to which varieties are widely adapted to the diverse environments of the U.S.

### Kentucky Bluegrasses

Many new improved varieties of Kentucky bluegrass have been developed and released in the U.S. during the past 10 to 12 years. There appears to be a reduced interest in bluegrass breeding and variety release at the present time in favor of other species such as ryegrass and fescue.

Leaf spot, caused primarily by *Helminthosporium vagans* in the Northwest, can severely damage common type varieties (characterized by narrow leaves and erect growth habit) such as Park, Kenblue, Bayside, Geary and Delta. The varieties A-34, Adelphi, America, Bonnieblue, Challenger, Columbia, Fylking, Majestic, Midnight and Sydsport are examples of new lower growing turf-types with improved resistance to leaf spot. The turf-type varieties Baron, Glade, Merit, Ram I and Victa would be considered as having intermediate resistance. Leaf spot is especially serious in poorly drained areas, and in shady areas.

Stripe rust, caused by *Puccinia striformis*, is the other serious disease of Kentucky bluegrass in the Northwest. The improved varieties Shasta, America and Mona have shown good resistance, followed closely by Bristol, Columbia, Geronimo, Majestic, Challenger, Sydsport and Trenton. This disease is

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(Turfgrass Varieties cont'd.)

most severe in the spring and fall, and can be reduced by irrigation and increased fertility.

The number of new bluegrasses to be released in the near future will be much less than the number released in the past twenty years. There is a need for bluegrass varieties with greater drought tolerance, insect resistance and improved performance at low fertility.

#### Perennial Ryegrasses

Since Manhattan perennial ryegrass was released in 1967 as the first improved turf-type perennial ryegrass, there have been many other improved turf-types. These varieties such as Birdie, Blazer, Citation, Dasher, Derby, Diplomat, Fiesta, Omega, Pennfine, Pennant and Yorktown II have displayed the excellent establishment rate and persistence of Manhattan.

AT the present time, there is a new generation of turf-type varieties coming onto the market that are showing improvements in density, mowing quality and overall disease resistance. Manhattan II, Palmer, Prelude, Citation II, Birdie II and Omega can be included in this category. These varieties have also shown improved leaf spot and crown rust resistance compared to the earlier varieties. The above varieties with a II designation also have had excellent resistance to stem rust which is a serious seed production disease. The variety Birdie II has displayed better resistance to red thread than the other varieties in our trials to date.

All of the new improved turf-type varieties have shown excellent wear tolerance in our trials located in Hubbard, Oregon. The variety Manhattan II had to top wear tolerance rating, followed closely by the other good varieties. There is still a need to continue to improve the *Fusarium nivale* and red thread resistance levels in perennial ryegrass varieties.

#### Tall Fescues

In the last four years the release of Rebel, Falcon and Olympic has resulted in tremendous interest in new turf-type tall fescues. These new longer-growing, denser and finer textured grasses are showing real improvements in disease resistance and turf performance compared to the old common type varieties KY 31, Alta and Fawn. Some other new tall fescue varieties becoming available are Adventure, Apache, Finelawn I, Hounddog, Jaguar and Mustang.

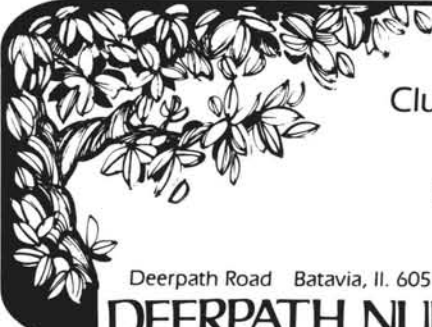
The outstanding characteristic of the new tall fescues is their deep root system that results in their ability to stay green two to three weeks longer than the other cool season turfgrass species under drought conditions. Some of the new varieties such as Adventure, Jaguar, Apache and Olympic have shown improved shade tolerance. Under moderate shade conditions, the leaf texture of these new tall fescues becomes finer and yet they maintain good density.

There will be many new tall fescue varieties released in the near future. Improvements are still needed in leaf spot resistance, dark leaf color and density. All of the new turf-type varieties showed superior traffic tolerance compared to the old tall fescue varieties. They did rate somewhat lower than the best perennial ryegrass varieties, however.

#### Fine Fescues

There has been a limited amount of breeding work in the U.S. on the three main species of fine fescue: chewings, creeping and hard fescue. Many of the presently available varieties of

(cont'd. page 20)



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(Turfgrass Varieties cont'd.)

fine fescues have resulted from breeding programs in Europe. The chewing fescue varieties Koket, Barfalla, Atlanta, Highlight and Waldorf, the creeping fescue varieties Ensylva, Moncorde and Ruby, and the hard fescues Biljart, Waldina and Scaldis are all European varieties.

The chewing fescues Banner, Jamestown and Shadow are varieties developed in the U.S. These varieties have shown somewhat better turf performance and leaf spot resistance than the European varieties. Shadow has shown better powdery mildew resistance than most other chewing fescues. All of the chewing fescues need further improvements in red thread resistance and performance under high temperatures. The chewing fescues perform well in shade situations, especially under tree root competition.

The creeping fescue varieties generally perform better under a higher cutting height. The U.S. variety Fortress has performed similar to the European varieties.

Boreal or Common Canadian Creeper is sold in large quantities in the U.S. for mixtures. These two grasses have very poor leaf spot resistance and persistence, but are competitive because of their low prices. Flyer is a new variety of creeping fescue with improved turf quality compared to most other varieties.

The varieties Waldina, Scaldis and Biljart along with the U.S. varieties Reliant, Spartan and Aurora are all hard fescue varieties with very good turf performance. Compared to the other fine fescues, these hard fescues have good leaf spot and red thread resistance and also very good drought, heat and low fertility performance. Hard fescues have a slow vertical growth rate, and are slower to establish than other fine fescues. The major improvement needed is to increase their seed producing ability to make them more price competitive. The variety Aurora is a result of a breeding project to improve seed yield, and yet maintain the improved turf performance of the other hard fescues.

#### Summary

There are many new improved proprietary turfgrass varieties on the market that are performing much better than the more cheaply priced common varieties. It is encouraging to see a shift in present buying patterns toward the better named varieties. The increased level in turfgrass breeding activities in the U.S. should continue to result in better turfgrasses at competitive prices in the future.

<sup>1</sup> Presented at the 37th Northwest Turfgrass Conference, Kah-Nee-Ta Resort, Warm Springs, OR, September 19-22, 1983.

<sup>2</sup> Turf-Seed, Inc., Hubbard, OR.

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A motion was made at the last monthly business meeting that all members are required to have a suit or sport coat when attending future business meetings. The appointed "Master-at-arms" will be instructed to collect a \$5.00 fee from all who do not meet the dress code.

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