NORTHWEST TURFGRASS TOPICS

The Official Publication of the Northwest Turfgrass Association Vol. 32, No. 1 Fall 1988

1988 Northwest Turfgrass Conference a Success

This year's Northwest Turfgrass Conference and Exhibition in Spokane September 19-22 was an outstanding success according to the some 400 participants.

– Education Program –

Over 30 excellent presentations covering a wide range of turf care topics were available for the conference attendees. Presentors from throughout the nation. Canada and New Zealand served to maintain the usual high quality of information available at the annual Northwest Turfgrass Conference.

– Exhibition –

Exhibitors supported this year's exhibition in an outstanding manner. Over fifty exhibitors from throughout the region and nation filled over 25,000 square feet of the Spokane Convention Center with displays. Everyone agreed the exhibitors put on a great show. Some reservations were expressed about the level of attendance possibly due to the timing of the show. Many exhibitors and other conference participants are working with the NTA to eliminate this problem for the show next year at the Bicentennial Pavilion in Tacoma.

– Golf Tournament –

Over 75 golfers played in the men's and women's tournaments. The tournament winners were as follows:

Men/First Flight
Low Gross – 1st Jeff Thomas; 2nd Dan Kukla
Low Net – 1st Craig Calvert; 2nd George Smith, Barry Galde and Pat Nibler

Men/Second Flight
Low Gross – 1st Kevin Smith; 2nd Bud Cook
Low Net – 1st Ed Adrian and Roy Goss; 2nd Gary Stormo; 3rd Mike Henry

Men/Third Flight
Low Gross – 1st John Hicks; 2nd Dan Michels
Low Net – 1st Jim Canady; 2nd Randy Shults and Mark Snyder; 3rd Alan Nielsen

Prizes were also given for longest drive, closest to the pin and high score.

Women
Winners – Sandy Thomas and Linda Whitworth

1988 Northwest Turfgrass Exhibition

The NTA recognizes and appreciates the valuable contribution and great support the turf care industry suppliers continue to demonstrate at each conference and this year was no exception to the rule.

NTA members should know that any extra revenues generated by the exhibition do not go into underwriting non-exhibit related conference expenses. Instead, any extra money, after exhibition costs are paid, goes into the NTA Research and Scholarshp Fund.

Many thanks to the following exhibitors who contributed to the success of this year's show:
Adams Tractor Company Inc.; Advanced Drainage Systems; Aquatics Unlimited; Briargreen, Inc.; Buckner Irrigation Equipment; CIBA-GEIGY Corp.; Country Homes Supply #1; Country Homes Supply #2; D-F Marks Company; Dansco Industrial Supply Inc.; DOW Chemical USA; Elanco Products Company; Emerald Turfgrass Farms Inc.; Equipment Northwest Inc.; Evergreen Pacific Supply Inc.; Farwest Turf; Filtomat Inc.; Flexstake Inc.; Fran-Cher Chemical Inc.; Hunter Industries; J. R. Simplot Company Best; Jacklin Seed Company; Lesco Inc.; Machinery Components Company; Millbrook Equipment Company; NW Outdoor Equipment; Salsco; Milliken Chemical; Mitchell, Lewis & Staver Company; Montco/Surf-Side; Multi-Turf Specialists Ltd.; Nor-Am Chemical Company; North Washington Implement Company; Northwest Motor Parts Company; Northwest Mowers; Northwest Utility Vehicles; Pacific AGRO Corp.; Pacific Calcium Inc.; Pacific Horticultural Supply; Pacific Topsoils Inc.; PBI-Gordon Corp.; Pickseed West Inc.; Puget Sound Turf Products; Rainsaver Inc.; Rhone Poulenc Chipco Products; Scotsco/Pro Power Products; Scotts Proturf; Sierra Crop Protection; Standard Golf Company; The Chas. H. Lilly Co.; Turf Equipment Northwest Inc.; Turf-Seed Inc.; Valent USA Corp.; Western Equipment Distributors Inc.; Wilbur-Ellis Company.

AG-2000 Plan

A forty page document entitled *AG-2000: Economic Strategies for Washington Agriculture,* which is a plan designed to position the state's diverse agricultural industry to best take advantage of future economic development opportunities to the year 2000 and beyond, is available from the Washington State Department of Agriculture, 406 General Administration Building AX-41, Olympia, Washington 98504.

President's Corner

By James R. Chapman

What a year! I've served on the NTA Board of Directors a couple times now but never before had the responsibility that comes with being named president. During this year your board has developed a comprehensive budget, that showed us we weren't doing as well as we wanted under the old membership and conference fee system; reviewed the bylaws and worked out revisions made necessary by the retirement of **Dr. Goss** (we'll always remember what Roy did for us) and the employment of a professional executive/director; began a dialogue with other professional organizations regarding coordinating their conferences with the NTA or developing a periodic trade show combining all the turf and grounds related interests. Along the way we took care of the ordinary tasks all NTA Boards have always handled – ways to increase membership, developing another top notch annual conference, dispensing research funds and scholarships.

For as long as I can remember it has been the goal of each outgoing NTA Board to encourage election of new members from each of the regions within the NTA – Western Washington, Oregon and the Inland Empire. Furthermore, the officers were selected in such a way that the presidency shifted regionally, as well. Each of these board members bears responsibility to his/her region and the entire Pacific Northwest in much the same way a U.S. Senator or Representative does. When elected, they agree to serve, speak up and participate fully. **This is not a glamorous, self-promoting undertaking!**

I have observed in other organizations and the NTA that you give the group more than you take if you're doing the job. I've watched **Bo Hepler** give unselfishly and with such dedication. Bo is just one example from the NTA Board. But in the end the rewards exceed your individual contribution and you go out a winner, although sometimes only in your heart are you recognized.

Every member of the NTA has the opportunity to serve on the baord. And **every** board member or prospective board member should be ready and willing to be named president. If you are ready, your entire organization will benefit from your interest and enthusiasm, and not just one section of it.

Another opportunity I experienced this year, perhaps so unique it may never be repeated, was to serve on the select committee reviewing candidates for Extension Turf Specialist, replacing Dr. Roy Goss. We were given a chance to review all applications and, through a sometimes agonizing process, select those we felt most closely met the criteria. Finally the personal interviews took place and a selection has been made.

One interesting point – part of the criteria – is the **statewide** emphasis on extension. Recognizing that most of the population is west of the Cascades and that the seat of extension in Puyallup doesn't lessen the importance of the problems and need for extension activities on the eastside.

One major problem that still exists for extension specialists headquartered in Puyallup is the cost of trips to the east. It will undoubtedly be necessary to organize field visits and research activities in ways designed to conserve travel funds with more involvement of local extension agents in the future. Each local turf oriented group should have an equal chance to benefit from research and extension, if they work through the local extension agent and try to coordinate their needs and interests with other needs in the same area so the trip is economically justifiable. The NTA may need to look at the cost of these visits with an eye to underwriting some of the expenses in the same way we now underwrite maintenance work at research plots.

It's time to step from the soapbox, turning the guidance of the NTA over to **Mike Kingsley,** your new elected President. Mike is a quiet man, perhaps not well known on the west side or in Oregon, but he gets things done. He speaks for an intense group of turf professionals in the Inland Empire.

It is truly a pleasure to see how well the new men and women in all facets of turf and grounds management are tackling their jobs and seeking to improve their expertise; Inland Empire, Western Washington, Oregon, Idaho, Montana, British Columbia, wherever. I leave things in good hands.

Officers and Directors Elected

Mr. **Mike L. Kingsley** was selected President of the Northwest Turfgrass Association for 1988-89 when elections were conducted during the recently concluded 42nd Northwest Turfgrass Conference and Exhibition. Mike is Golf Course Superintendent at MeadowWood Golf Course in Liberty Lake, Washington. He served the association this last year as vice president, member of the board and conferece golf tournament committee chairperson.

Other officers elected for the year include **William J. Johnston,** Turfgrass Science Agronomist at WSU, who will serve as vice president and **Bo C. Hepler,** Turfgrass Agronomist with Senske Lawn and Tree Care of Yakima, who will serve as treasurer. **James R. Chapman** will fill out the officer ranks as immediate past president.

New brand directors selected during the conference include: **William B. Griffith**, Golf Course Superintendent at Veterans Memorial Golf Course in Walla Walla, Washington; **Rebecca (Becky) R. Michels**, President of Messmer's Landscaping Service in Kent, Washington; and, **Patrick J. Nibler**, Operations Manager for PRO GRASS in Wilsonville, Oregon.

The new officers and directors, above along with the carry over directors – **Richard E. McCoy, Randy D. Shults** and **Norman J. Whitworth** will make up the 1988-89 NTA Board of Directors.

1989 Northwest Turfgrass Conference Preparations

Planning for the next conference, the **43rd Northwest Turfgrass Conference and Exhibition,** is already well underway. The dates of the conference are September 18-21, 1989. Get them on your calendar now. Efforts are underway to make the education program next year even better than those in years past.

The conference headquarters hotel will be the Tacoma Sheraton Hotel, and the 20,000 square foot Bicentennial Pavilion and Ballroom for the largest and best NTA conference and trade show, ever. We hope to see you there!

Research and Scholarship Fund Raising Campaign

Randy Shults, chairperson of the NTA Research and Scholarship Fund Committee, has announced the kick off of the 1988/89 Research and Scholarship fund raising campaign.

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 to those who gave their time and money to make the research and education possible, for without them we would have to rely on our own slow trial and error methods.

Few of us are independently capable of nor prepared to conduct the research or develop the education programs necessary to keep the industry on the leading edge. Recognizing this, the Northwest Turfgrass Association created a research and scholarship fund to help make it possible for each of us to participate significantly in the advancement of present and future knowledge. Through this fund, each of us can financially contribute to industry research and education advancements.

Donation forms will be mailed to members and industry supporters within the next month or so. Contributions are tax deductible and those contributing to the research and scholarship fund each year are recognized in the NTA Annual Directory.

Buy a share today in better turfgrass for tomorrow.

Stricter Pesticide Rules Adopted

More stringent pesticide application and storage rules have been put in place by the Washington State Department of Agriculture and became effective July 31. Many proposals to revise the state's general pesticide rules were considered at a hearing in Pasco on June 14 and several have been adopted.

New equipment and supervision standards for irrigation systems used to apply pesticides have been adopted to protect the source of irrigation water from accidental pesticide contamination. The rule is similar to newly implemented federal rules. Its effective date was delayed until October 31 to allow for orderly implementation. Applying pesticides in irrigation water is a common practice in Washington. The department's initial effort will concentrate on informing growers about the new requirements and working with growers to bring their irigation systems into compliance.

Criteria and procedures were adopted to implement a waste pesticide disposal program established by the Legislature in 1987.

Pesticide storage requirements were revised to clarify when and where warning signs must be posted. The new rules require warning signs on all exterior walls of enclosures containing highly toxic pesticides. In addition, if the pesticide storage area is contained in a large, multipurpose building, warning signs are required on all exterior walls of the building within 30 feet of the storage area, and one sign must be visible from the main entrance. The main entrance requirement is waived in some circumstances. The proposal to require the same posting for areas storing moderately toxic pesticides was dropped.

The newly adopted rules also incorporate minor changes in record keeping requirements for licensed applicators and dealers, insurance documentation required for commercial applicator licensing, and examination fees.

For more information or to receive a copy of the final rules, contact **Mary Toohey,** Washington State Department of Agriculture, 406 General Administration Building, AX-41, Olympia, WA 98504, (206) 753-5064.

Turfgrass Research Review

by Stanton E. Brauen

The following is a review of research projects currently underway at the Washington State University Western Washington Research and Extension Center at Puyallup, Washington.

Water Use Efficiency of Turfgrass

This is the major five-year project. It was approved in 1986 and some work was completed with a physiological antitranspirant in 1986 (grant funds). During the winter and spring of 1987, some state-of-the-art soil moisture measuring equipment was obtained through generated grant monies. Bucket-type weighing lysimeters were constructed this spring and summer and placed in pits in July. Currently a 60-bucket experiment is being conducted on water use of perennial ryegrass at 60, 80 and 100% ET and further evaluation of an antitranspirant is underway. We plan to conduct water use efficiency work through the next five years and perhaps longer if needed as the necessary facilities can be built or acquired and put in place.

Much of the research will use bucket lysimeters to assess water use by species as related to sand or soil substrate, cultural practices, shade effects, percent ET and a host of factors which will identify the best methods to get good utilization of the water applied. The emphasis is to be placed on how to conserve water but retain that useability with minimum loss of quality. It is hoped that a replicated irrigation block system will be installed to apply moisture at percent ET to determine the best turfgrasses to use in stressed environments.

Pre and Post Chemical Control of Coarse and Unsightly Grasses in Improved Turf

This involves a series of studies with several turfgrass species and several herbicides, some new. Beginning in 1988, it will be expanded to include combinations of new grasses that have a better chance of competing with native aggressive species. The whole concept is to assess what combinations of highly adapted new turfgrasses can be retained in top turf condition if the manager chooses to do so.

Evaluation of Bentgrasses for Fairway, Lawn and Putting Green Turf

This project is intended to define the nutritional, management and new bentgrass variety concepts that will encourage competitive bentgrass turfs. In putting turf it revolves around the release of 'Putter' bentgrass and new bentgrasses being introduced for evaluation and into the market. However, we will be involved as a part of this project to assess bentgrasses for other than putting turf use since bentgrass is part of the climax vegetation in turfs of western Washington.

Goss Establishes Turfgrass Research Fund

Roy L. Goss, retired turfgrass specialist from Washington State University, has challenged the turfgrass industry to donate money for education and research and offered to match contributions out of his own pocket. The challenge was announced last week at the 42nd Northwest Turfgrass Conference and Exhibition. Goss retired in February after nearly 30 years as WSU's turfgrass extension specialist.

Goss will match each $15 donated to the **Roy L. Goss Turfgrass Endowment Fund** at Washington State University with $1 of his own, with a ceiling of $10,000 on his own contribution. The offer is good for one year.

Rick Swantz, development officer for the WSU College of Agriculture and Home Economics, said the fund will be used to support turfgrass research education and scholarships.

Goss said he issued the challenge because there is a need for more money for scholarships and research programs in turfgrass management, and because turfgrass affects everyone's life.

It not only makes the home environment attractive, but is an essential element in many recreational pursuits, such as golf, ball games, and city parks.

Grass seed production also is a major Pacific Northwest industry. Washington farmers produce about $13 million worth of Kentucky Bluegrass seed each year.

Contributions may be made to the **Roy L. Goss Turfgrass Endowment Fund,** 223 Hulbert Hall, WSU, Pullman, WA 99164.

Turfgrass Related Award Recipients

Gary Yates of OSU received a $500 scholarship from Nor-Am Chemical Company who awards such a scholarship each year to a promising turf management student.

Tim Manion, retired golf course superintendent received the OGCSA Distinguished Service Award.

Mark Snyder, golf course superintendent at Salishan and past president of the NTA, has completed the requirements of the GCSAA and has earned the right to use the title Certified Golf Course Superintendent (CGCS).

Randy Shults, golf course superintendent at Tualatin Country Club, has been recognized by the OGCSA as their Superintendent of the Year.

Todd Lauble is this year's recipient of Seed Research of Oregon's annual $500 scholarship for demonstrating outstanding work in the study of turfgrass management.

Dr. Ron Ensign, U of I emeritus professor and NTA Honorary Life Member, was presented the Western Seed Industry of the United States and Canada Man of the Year award for outstanding service to the industries.

Kent Wiley, of Pickseed West, has been elected 88-89 president of the Oregon Seed Trade Association.

R. James Cook, Agricultural Research Service scientist, U.S. Department of Agriculture, stationed at WSU has been elected president of the International Society of Plant Pathology.

National Variety Testing Program

Each year a new national test is organized at Beltsville. We have consistently accepted that new varieties need evaluation here, but believe the seed industry should play a larger part in financial support. Most of these national evaluations have been conducted on-station at Farm 5 at the Western Washington Research and Extension Center with the exception of a perennial ryegrass evaluation conducted in shade at the Everett Golf and Country Club from 1982 to 1985. Tall fescue, fine fescue and Kentucky bluegrass are currently in test at Puyallup. A perennial ryegrass evaluation was just terminated. New perennial ryegrass and tall fescue tests are to be seeded this year, but some of these are to be located off-station. Mukilteo Ferry Park and Yakima Sportsmen's Park are examples of these new evaluation sites. Sites are selected on the basis of some special environmental stress that it may offer.

Biological Control of Disease and Insects with Endophytic Fungi Present in Turfgrass Varieties

As a part of the Western Regional Coordinating Committee on Turfgrass Research (WRCC-11), we are cooperating in a regional effort to evaluate the effect of the presence of endophytic fungi growing between the cells of grass plants on feeding by European crane fly (injury) or on red thread development. This study was established in 1985 and should run through 1988 or 1989.

Long Term Hollow-tine or Solid Tine Aerification

This study is four years old and will assess the long term effect of repeated solid or hollow-tine aerification or combinations of solid and hollow-tine aerification on thatch accumulation, infiltration rate, compaction zones, and bulk density of soils and the turf species composition associated with it.

Long Term Application of Phosphorus, Potassium, Elemental Sulfur and Cutting Height

This study is six years old and is now beginning to show long term effects of continuous low to high levels of elemental sulfur, phosphorus and potassium applications on thatch, pH, soil nutritional level of P, K, Ca, Mg, S, CEC, base saturation, turf quality, density, scalping and species drift.

Aluminum Species, Phosporus and pH Effects on Survival of Bentgrass and Poa annua

This is a cooperative project with Dr. Shiou Kuo and is just beginning in the greenhouse phase. Dr. Kuo has begun greenhouse studies in pH adjustment of sand and soil to identify aluminum speciation which may occur in low pH soils. It is postulated that specific aluminum speciation may encourage or detract from the survival of bentgrass and/or Poa annua. The field component of this study will begin in 1988.

Broadleaf Weed Control with New Non-Phenoxy Herbicides

This study is sponsored by several companies interested in exploring the possibility of development of herbicides other than phenoxy herbicides for the control of broadleaf weeds and moss in turfgrass and for providing control of broadleaf weeds which are not well controlled with phenoxy-type herbicides. The studies are several years old and will continue for the next several years.

Nitrogen Use Efficiency on Sand Lysimeters

This study was begun in 1983 and was terminated in the field in the spring of 1987. The laboratory analyses of nitrogen-containing samples, took two timeslip individuals working in the laboratory 18 hours a day for the past 8 weeks. The project status was summarized at the 1987 NTA Conference and a paper will be presented at the International Turfgrass Conference in Tokyo, Japan in 1989.

Slow Release Nitrogen

This study was begun in 1982 and was terminated this summer. This study was conducted to assess the nitrogen release and turf quality characteristics associated with newer slow release nitrogen carriers. The products evaluated were Nitrazene, Oximide, IBDU, magnesium chloride urea, biuret urea, SCU, UF, organoform, Milorganite, and commonly used soluble sources. This project will be summarized this next year.

In conclusion, during the years from 1957, when the research-extension program began at Puyallup, until 1980, the research program was organized to meet fundamental extension application needs of the turfgrass industry and it served that purpose very well. Currently and in the future, turfgrass research programs and, to some extent, extension programs will need to investigate turfgrass problems from a more fundamental standpoint. This is necessary so that the research and extension scientists involved can generate information that is publishable in scientific journals and is widely accepted nationally and internationally in turfgrass concept. To do this, research facilities **must be improved** wherever turfgrass research is to be conducted.

Hazard Communication Standard Extended

OLYMPIA—All Washington employers, including agricultural employers, are now required to meet state laws that require informing and training employees about hazardous chemicals in the workplace.

The Department of Labor and Industries administers the Hazard Communication Standard, the name for Washington Administrative Code 296-62-054 through 05427. This standard sets requirements for chemical manufacturers, distributors and users of hazardous chemicals related to product labeling, providing material safety data sheets (MSDS), and information and training for employees exposed to hazardous chemicals in the workplace.

Federal law requires all states to comply with hazard communmications regulations. Washington's standards are tailored to the industries in the state. Since 1985, Washington has covered all employers but allowed partial coverage for the agricultural industry in that it was not required to have written programs and did not have to obtain material safety data sheets.

However, recent changes to the federal Occupational Safety and Health Administration (OSHA) hazard communication standard now requires Washington to extend total coverage to agriculture.

Although OSHA has placed a stay on hazard communication coverage for the contruction industry, construction still is covered under Washington's standard.

Washington adopted the federal changes July 6. They became effective August 5. Copies of the changes and additional information on the Hazard Communication Standard, including free brochures for both workers and employers, may be obtained by contacting the department's division of industrial safety and health at its toll-free number, 1-800-423-7233.

Wet-area Plants

Some shrubs grow poorly in wet spots, become chlorotic or gradually die. This is frustrating for you and your customers. Equally frustrating is not knowing where those wet spots are because surface conditions do not appear to be particularly bad.

How to find out

To get an idea of how water moves in the soil, dig a 2-ft. deep hole and fill it with water. Record how long it takes for the water to drain out. Fill the hole two more times and repeat the timing procedure.

If water remains in the hole for a day or more, either you need to improve drainage or you should plant only water-tolerant trees and shrubs.

If the water remains within 1 foot of the soil surface for a week or more, probably you should plant only grass or annual flowers. Avoid trees and shrubs.

Short list

The list of shrubs suitable for wet locations is not long, but three dogwoods are mentioned – Siberian dogwood, silky dogwood and red-osier dogwood. These are shrub types, which are not grown for their flowers but for the reddish colored bark of the twigs in the winter months. Although these dogwoods tolerate wet soils, you can also grow them in drier locations.

For fragrance in midsummer, one of the best wet-soil-tolerant plants is summersweet. This bushy shrub grows to approximately 6 feet in ideal conditions and produces pale pink flowers in July. Leaves turn yellow to orange in the fall. You can also use it as a hedge.

There are few evergreen shrubs suitable for moist spots in the Midwest. One is a holly known as inkberry because of its dark blue berries. Dwarf forms are available and you should use these whenever possible because the shrub becomes rather loose without pruning. You can prune them severely and they will resprout from the base. They also produce root suckers that allow them to spread and form a thicket. The leaves are oval – not the type people usually associate with English or American holly.

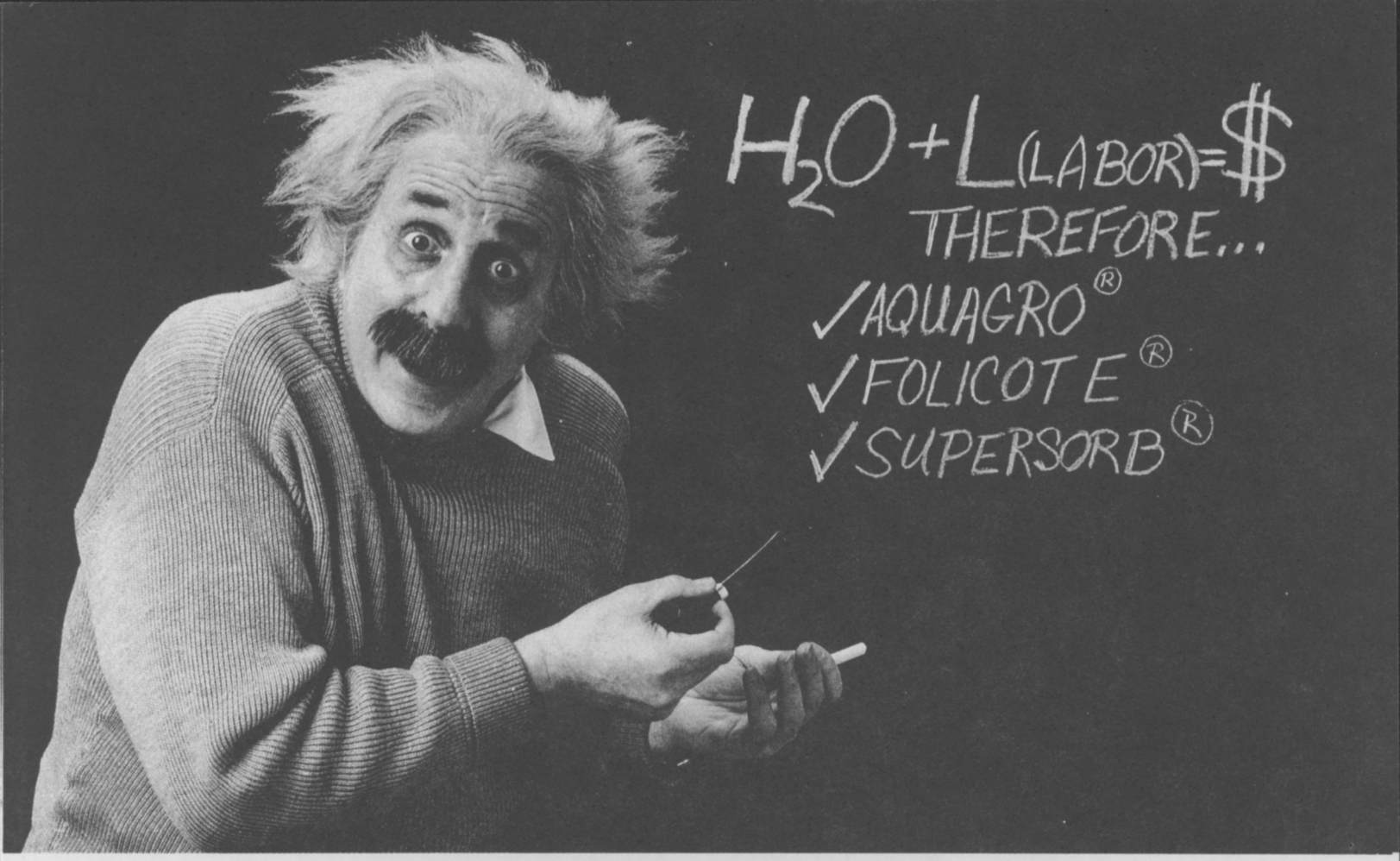
Among viburnums, arrowwood viburnum, European cranberry bush and American cranberry bush are possible selections for wet sites. The cranberry bush viburnum is particularly attractive in fall because it produces clusters of bright orange-red berries.

If you are willing to create an acid organic soil in a wet spot, you might consider blueberry and mountain laurel. Mountain laurel need shade and some wind protection; blueberry will tolerate a slightly more exposed location.

Common sweet shrub, which produces fragrant reddish brown flowers, tolerates many soil conditions, including high moisture. Although it is not a showy specimen plant, it is suitable for screen or background use where many other shrubs may not grow.

Other shrubs you might consider for wet spots are serviceberry, red chokeberry, buttonbush, winterberry and sea buckthorn.

Source: Garden Spotlight



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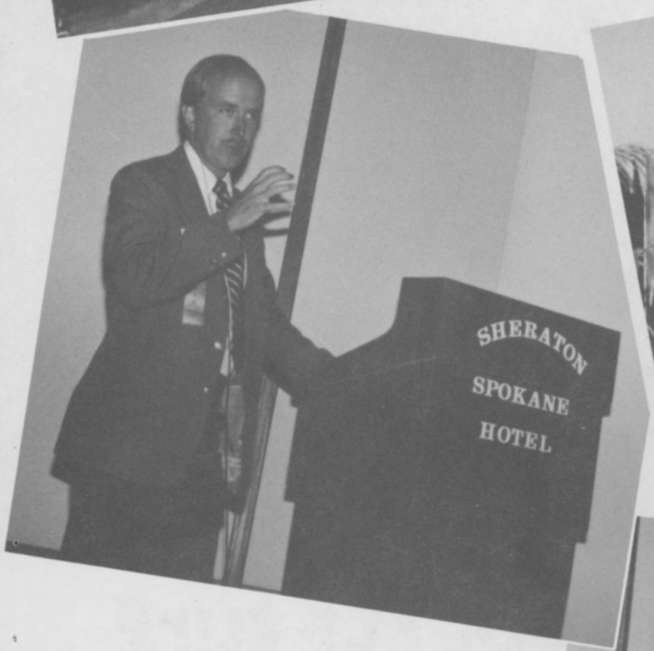

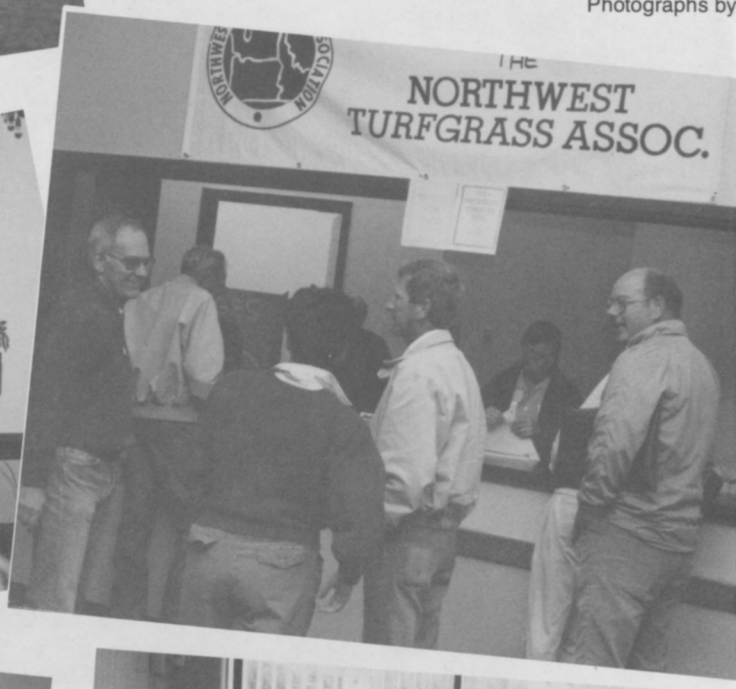

EST TURFGRASS
AND EXHIBITION

Spokane Convention Center
19-22, 1988

Ben Malikowski

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Cook and Weiderstrom Resign

Thomas W. Cook, Professor in the Department of Horticulture at Oregon State University, and **Ken R. Weiderstrom,** Owner of Northwest Mowers, Inc. in Seattle, Washington both resigned from the NTA Board of Directors due to the demands of other responsibilities on their time. Their donations to the NTA will be felt for some time to come. Tom was instrumental in membership expansion efforts and revision of the association's publications program while Ken has served as coordinator of the conference exhibitions for the past two years and played a major role in the growth of that show. Thanks for your service and contributions gentlemen!

Grass Seed Residue Burning

By Dr. Jack W. Zimmer

Now that I've got your attention, it is important that, on an annual basis, we review the need for burning of grass seed residue as a viable production practice. The major freeway accident on I-5 near Albany, Oregon has brought burning to the attention of everyone in the Northwest seed production areas. This attention is of a negative nature, and the moratorium on field burning following the accident may be just the beginning of actions that will have a negative impact on our industry.

Burning is *not* a cosmetic event in grass seed production. Also, it is *not* a production practice utilized for the ease of the grower. Burning is critical for continued quality production. Years of research have shown that long-term economical production of bluegrass is not possible without well-managed burning programs.

Burning provides for removal of excess vegetative material, control of certain pests, control of certain diseases, a physiological stress to the plant, and enhancement of photoperiod impact on the plant at critical seed formation time. Research has found no alternative for burning of established bluegrass fields other than short-term rotation (1-2 years) which is financially difficult, if not impossible.

Growers must look at effectiveness of burns. Surface burns without the removal of excess plant material will not normally have satisfactory yield enhancement results. Surface burns many times must be supplemented with mechanical reburn techniques, which are costly. Field condition prior to burn must be monitored carefully to insure good burns but limit burnout of plants.

The key to the continuation of this culturally sound process is control and wise use of the tool. Washington and Idaho growers utilize the Intermountain Grass Growers Association (IGGA) to manage and control their program. The Idaho legislature has totally turned control of burning over to IGGA. This has allowed burning to continue in an orderly fashion that has had minimal impact on the other key industry of the area: tourism.

The management factors include calling times and locations of burns, road safety through road blocks and signage, and grower educational programs on fire control techniques. This is a model program allowing for coexistence of grass burning with other critical economic entities in the area.

Source: Grass Clippings (Jacklin Seed Company)

So You Want A Day Off

So you want a day off. Let's take a look at what you are asking for.

There are 365 days per year available for work. There are 52 weeks per year in which you already have two days off per week, leaving 261 days available for work. Since you spend 16 hours each day away from work, you have used up 170 days, leaving only 91 days available. You spend 30 minutes each day on coffee break. That accounts for 23 days each year, leaving only 68 days available. With a one hour lunch period each day, you have used up another 46 days, leaving only 22 days available for work. You normally spend 2 days per year on sick leave. This leaves you only 20 days available for work. We are off 5 holidays per year, so your available work time is down to 15 days. We generously give you 14 days vacation per year, which leaves only 1 day available for work and I'll be damned if you're going to take that day off!

Source: The Mountain State GREENLETTER, Volume 11, Number 4

GCSAA Membership Tops 8,000

The Golf Course Superintendents Association of America's active and visible role in golf – coupled with a vigorous and effective recruitment program – is helping to pay dividends via a dramatic increase in membership. This month, GCSAA's rolls officially exceeded 8,000 for the first time in the association's 62-year history.

Timothy Robert Sever, golf course superintendent at Sugarmill Woods Country Club of Homosassa, Fla., became the 8,000th member.

"I believe the association's high visibility within golf is one factor contributing to this growth," says **John A. Segui,** CGCS, president of GCSAA. "At the same time, our continued increase in membership has also allowed the association to provide more benefits and services – which in turn has steadily attracted still more members.

In 1983 GCSAA had fewer than 5,000 members.

Oregon Seedsmen to Publish Report

The Oregon Seed Council and the Oregon Seed Trade Association will publish a "State of the Industry" report about Oregon's multi-million dollar seed business.

"This report will review our history, provide useful reference and explain many of the technical aspects of the business," says **Dennis Hays,** executive director of the Oregon Seed Trade Association. "We want to educate our legislators and other Oregonians about how vital this industry is."

The 32-page, full-color magazine will be mailed in mid-September and will be published by Medi-America, Inc. It will be circulated to agricultural professionals, public officials, regulatory agencies and legislators. It will also appear in next month's *Oregon Business* magazine.

Irrigation Scheduling of Kentucky Bluegrass

Hagan first described the virtues of deep and infrequent irrigation in the 1955 *Yearbook of Agriculture # Water.* Even today, this recommendation remains the standard rule of thumb for irrigating most turfs. The turf industry grew rapidly in the dryer parts of the country as the irrigation industry developed. In the years preceding Hagan's report, it was thought that grasses in irrigated regions must be watered every day or two. Adopting the policy of irrigating infrequently and deeply conserved large amounts of water and also improved soil aeration by simply avoiding excessive water. The general idea when watering deeply and infrequently is to determine the depth of the effective root zone and then to replace the available water in that volume of soil. Determining when to irrigate is a matter of watching for symptoms of wilt, such as leaf purpling and foot printing. As research progressed, recommendations became more specialized. For example, irrigating when tensiometers reached 60 centibars, or irrigating to replace 80% of pan evaporation.

Research over the last 7 years has been aimed primarily at water conservation with less emphasis on optimum growth of turf. Evapotranspiration rates for several grass species and management practices have been determined. An excellent review of the current knowledge and research concern water and turfgrass is presented in *Turfgrass Water Conservation,* Publications Division of Agriculture and Natural Resources, University of California, 6701 San Pablo, Oakland, CA 94608-1239, publication number 21405, 155 pages.

To achieve a better understanding between evapotranspiration and deep and infrequent irrigation, research was conducted at Colorado State University along the Front Range of the Rocky Mountains. This project was aimed at finding what frequency and amount of water were necessary to produce a given level of turfgrass quality. In this semi-arid region, annual precipitation averages 15 to 20 inches, and Kentucky bluegrass turf is almost exclusively irrigated. While complete restrictions on water have not yet occurred, at times homeowners are only allowed to irrigate lawns on given days (according to their house number), and in some suburbs of Denver, the size of Kentucky bluegrass lawns have been restricted.

The water use rate of Kentucky bluegrass was determined throughout the summer by using small weighting lysimeters. Lysimeters were watered every two days to replace the amount of water lost. This water use value was considered to be the Maximum Water Use Rate (MWUR) for Kentucky bluegrass. Based on the MWU values obtained from lysimeters, field plots were irrigated to supply either 100, 75, 50, 25 or 10% of MWU. Thus, percent irrigation and percent of MWU refer to the same quantity of water. To evaluate the duration between irrigations, each irrigation percentage was applied on either a 2, 4, 7 or 14 day interval. Within each percentage of irrigation, the same amount of total water was supplied for all irrigation intervals. All plots were covered with a large plastic tarp to prevent water entry during periods of rain. For all percentages of irrigation above 25%, there was an obvious increase in turf quality as the irrigation interval decreased. Regression analysis was used to predict turf quality at a given percent and frequency of irrigation. In our study, turf below a quality of 7 was considered unacceptable because it wilted too frequently and eventually lost density. To maintain a turf quality of 7, the following irrigation; or 4 day interval at 85% irrigations; or 7 day interval at 106% irrigation. This indicates that under irrigated conditions, less water was required to produce the same level of turf quality when the interval between irrigations was shortened. As you can see, these findings are exactly the opposite of what you would expect to find based on the theory of deep and infrequent irrigation. The frequent irrigation did not increase the incidence of disease or weeds, nor did it appear lush. In some situations, however, where diseasees like **Pythium** sp. are a problem, frequent irrigation should be voided under all circumstances. With other diseases like **Fusarium** sp., it is desirable to prevent sprulation by keeping the thatch wet with frequent irrigation. During July and August, the turf quality for the 75% irrigation treatment, applied every 4 days, never dropped below an acceptable level of quality. This offers a water savings of 25% of what the plant normally uses without a significant loss of turf quality. It is probably not the frequency with which water is supplied that causes excessive soil water conditions, but instead it is the excessive quantity of water applied at each irrigation. In this study, irrigation was based on MWU; therefore, the quantity of water was regulated so that it never exceeded the amount of water used, thus preventing any chance for excessive soil moisture or possible losses by leaching. One important point that should be remembered is that treatments in this study were applied all summer long, thus simulating a situation where water would always be available for turf purposes but in lower quantities.

This is interesting, but you still ask, "How do I irrigate?" If your primary concern is drought tolerance, or if there is a possibility that your water supply will be entirely restricted in mid to late summer, then you would be better off to adopt a policy of irrigating deeply and infrequently. On the other hand, if you must maintain a highly visible turf area with no symptoms of wilt, and also want to conserve water, then frequent irrigation with lower amounts of water may be the answer.

Source: Proceedings of the 33rd Annual Rocky Mountain Regional Turfgrass Conference. Presentation by Dr. David D. Minner (U of Missouri)

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Calendar of Events

November 18	**NWGCSA Annual Meeting** – Contact Ron Coleman (206) 825-3942
December 4	**NWGCSA Christmas Party** – Contact Ron Coleman (206) 825-3942
December 7	**The Chas. H. Lilly Co. Integrated Turf/Grounds Management Seminar** – Contact James Chapman (206) 762-0818
December 12	**NWGCSA Pesticide Seminar** – Contact Ron Coleman (206) 825-3942
December 13-15	**Far West Fertilizer & Agrichemical Convention & Trade Show** – Contact Ken Maurer (509) 547-5538
December 13-14	**OGCSA Pesticide Applicator Seminar** – Contact Dick Malpass (206) 573-6969
January 5-7	**WSNLA Annual Convention & Exhibit** – Contact WSNLA office (800) 672-7711
January 9	**OGCSA Regular Meeting** – Contact Dick Malpass (206) 573-6969
January 16	**NTA Board of Directors Meeting** –Contact Blair Patrick (206) 754-0825
February 6-13	**GCSAA 60th International Golf Course Conference and Show** – Contact GCSAA (800) 472-7878
February 13-15	**Inland Northwest Turf and Landscape Show** – Contact Jones & Associates (509) 327-5904
February 24	**Joint OGCSA & NWGCSA Meeting (tentative)** –Contact Ron Coleman (206) 825-3942/Dick Malpass (206) 573-6969
April 17	**NTA Board of Directors Meeting** – Contact Blair Patrick (206) 754-0825
April 30-May 1	**OGCSA Annual Meeting** – Contact Dick Malpass (206) 573-6969
May 23	**Oregon State University (OSU) Field Day** – Contact Tom Cook (503) 754-3695
June 9-11	**21st Annual Convention of the Oregon Seed Trade Association**
June 19	**2nd NTA Golf Tournament for Research** – Contact Blair Patrick (206) 754-0825/Norm Whitworth (509) 659-3114
June 20	**Washington State University (WSU) Field Day** – Contact Stan Brauen (206) 593-8540
August 14	**NTA Board of Directors Meeting** – Contact Blair Patrick (206) 754-0825
September 18-21	**43rd NTA Northwest Turfgrass Conference and Exhibition** – Contact Blair Patrick (206) 754-0825

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