NORTHWEST TURFGRASS TOPICS

Vol. 32, No. 3 Spring 1989

The Official Publication of the Northwest Turfgrass Association

Summer Turfgrass-Fest

The Northwest Turfgrass Association, with the corporation of the WSU Puyallup Research and Extension Center, the Tumwater Valley Golf Club and the High Cedars Golf Club, is sponsoring a **Summer Turfgrass-Fest** June 19-20, 1989.

The event is planned to provide the opportunity for friends, colleagues, co-workers and everyone involved with the turfgrass industry to get together to share problems (and solutions); hear about recent research activities; see the "state of the art" in industry equipment demonstrated; and, practice your golf game.

Monday, June 19th, a **Turfgrass Research Golf Tournament and Cookout Dinner** will be held at the Tumwater Valley Golf Club in Tumwater, Washington. The Pabst Brewing Company/Tumwater Valley Golf Club (Tumwater) has donated their club and facilities for the event.

Tuesday, June 20th, the annual **Turfgrass Field Day** at the WSU Puyallup Research and Extension Center, Field Laboratory – Farm 5 will be held. Stan Brauen, Associate Agronomist with the WSU Puyallup Research and Extension Center, indicates the Field Day program discussions will include water requirements of turfgrass species, influence of antitranspirants on turfgrass water use, growth regulator influences on annual bluegrass seedhead development, perennial ryegrass evaluations in shade and full sun, preemergence herbicides, broadleaf weed control with newer herbicides, nutritional studies on sand, shattercore vs. hollow tine aerification, fungicides for Fusarium control, growth regulators on rough turf, pH and soil acidity effects on bentgrass and annual bluegrass, and new program direction in persistence of athletic turf under simulated war and deficit irrigation.

Also on Tuesday following the field day there will be a **Turfgrass Equipment Exhibition and Cookout Lunch** at High Cedars Golf Club. Wally Staatz, owner/manager of High Cedars Golf Club, has donated his club and facilities.

You should be receiving registration information for the **Summer Turfgrass-Fest** in the immediate future – if you haven't already. Keep an eye out for it and we'll see you there!

1989/90 Board Director Positions

The Nominations Committee, chaired by Mr. James Chapman, is soliciting the names of individuals interested in serving as board directors on the NTA Board of Directors.

There will be two board director vacancies on the Board. The board director positions will be open for election at the Annual Meeting of the Members held during the 43rd conference. Board Directors are elected for three (3) year terms.

If you are interested, please contact either Jim Chapman at (206) 762-0818 or the NTA Office at (206) 754-0825.

43rd Annual Conference Takes Shape

EDUCATION

Program

The program for the **43rd Northwest Turfgrass Conference and Exhibition** scheduled for September 18-21, 1989 at the Sheraton Tacoma Hotel and Bicentennial Pavilion in Tacoma, Washington has been finalized by William Johnston, Conference Program Committee Chairperson (see program enclosed).

This year's conference program will again include **two tracks** of presentations – one designed for **golf course personnel** and the second for **parks, athletic and other grounds and lawn personnel.** Presentation topics include: Role of the turfgrass extension specialist; Necrotic Ring Spot research update; Athletic field maintenance; Golf course architecture; New fine-leaf fescue cultivars; Ground water, pesticide, and nutrient management plan; Turfgrass management and golf course maintenance; Slow release fertilizers of ornamentals; Athletic field construction with sand; and, many, many more.

Speakers

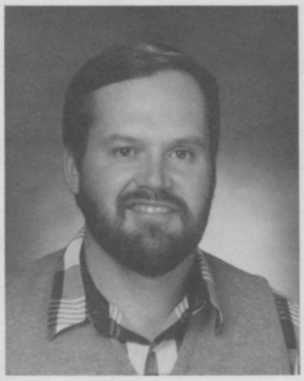
As usual, program speakers will be representative of the best qualified and most informative in their fields. Included will be **Dr. Houston Couch** with Virginia Polytechnic Institute and State University; and **Dr. Don White** with the University of Minnesota; and, **Dr. Gwen Stahnke,** previously with the University of Nebraska now with Washington State University replacing retired Dr. Roy Goss. Other speakers will include our own best in the West from education and the industry on a broad variety of informative topics including golf courses, parks, athletic and other grounds and lawns.

Pesticide Recertification

Oregon and Washington pesticide recertification credits will be available.

(Continued on page 2)

President's Corner



Well, spring has finally sprung (at least on the calendar, if no place else). It's difficult to anticipate what Mother Nature will throw our way in 1989. The last few years in the Pacific Northwest we have seen some real extremes. Maybe this year it will average out and we can have something near normal, if there is such a thing!

Your Board of Directors has been busy this year, having just concluded our fourth regular Board Meeting. We are very proud of the diversity of professions and geographic representation on the Board. This allows us to have a broad spectrum of views and opinions. It also allows us to reach our constituents better and have their opinions voiced. We have taken action based on these opinions and moved the 1990 Conference from Eugene, Oregon to Rippling River, Oregon. Our membership has overwhelmingly stated they prefer destination resorts over larger metropolitan locations, and this action reflects their wishes.

The problem with most destination resorts is the size of facility to house both the educational sessions and the trade show. We hope incorporating the large equipment with WSU's Field Day and the Research Golf Tournament in mid-June will enable us to have a smaller trade show at dstination resort sites (similar to the Salishan show in 1987). Obviously, a smaller show means less money generated for research. Hopefully better conference attendance and the large equipment show will offset the lower income.

We need to make a point to attend both the golf tournament for research and the large equipment trade show or financially be forced to return to metropolitan sites for the conferences and trade show. So let's make it work! Support the Industry that supports you.

Conference *(Continued from page 1)*

EXHIBITION

The 17,000 square foot beautifully refurbished and carpeted Tacoma Bicentennial Pavilion adjoining the Sheraton Tacoma conference headquarters hotel will house this year's exhibition. The response from exhibitors has been outstanding already and the show should be one of the best ever. Every type of supplies, materials and services are expected to be represented along with the technical personnel to assist with any inquiries. This show is a must for anyone involved in any level of the turfgrass or related industries.

ACCOMMODATIONS

Host City

The City of Tacoma is quicky being discovered as one of the best meeting places in the Pacific Northwest. Restaurants are among the best in the West. Art galleries, theatres, an internationally-acclaimed zoo and great shopping experiences. Tacoma has something for everyone and is prepared to make your visit a success.

Housing

The NTA has selected the Sheraton Tacoma Hotel and Bicentennial Pavilion as the headquarters for the conference and exhibition. Special room rates for conference participants will be $65 for singles and $75 for double occupancy.

The hotel is located in the very heart of the exciting, revitalizing City of Tacoma. You'll find their Pacific Northwest hospitality and elegant atmosphere will meet your needs in perfect style. Many of the 324 rooms take advantage of the hotel's spectacular views – from sparkling Commencement Bay and snow-clad Mount Rainier to the delightful old-meets-new architecture of the port city. All rooms offer oversized beds and carefully selected furnishings.

TRANSPORTATION

Seattle-Tacoma International Airport is served by all major commercial airlines. At the airport you will find all the normal automobile rental services. The airport is a twenty minute ride from the city center.

For those driving, Tacoma is located 20 some miles south of Seattle, Washington and 125 miles north of Portland, Oregon on Interstate 5.

SPECIAL EVENTS

Men's Golf Tournament

The annual men's Turfgrass Conference Golf Tournament will be held Monday at the beautiful Northshore Golf and Country Club. The course is located on the north side of Commencement Bay (in northeast Tacoma) just six miles (10 minutes) north of downtown Tacoma. Transportation to the course will be the responsibility of golfers.

Turfgrass Facilities Tour

Monday's program will offer an alternative activity for those not interested in golf – the second annual turfgrass facilities tour. The tour plans are being finalized now; however a three stop tour is expected with sites to include

(Continued on page 3)

43rd Northwest Turfgrass Conference and Exhibition

GENERAL PROGRAM

SUNDAY, September 17

3:00-5:00 p.m. — **Executive**
Board of Directors Meeting ..... **Board Room**

1:00-5:00 p.m.
Registration Desk Opens ..... **Third Floor Foyer**

7:00 p.m.-On
Board of Directors Dinner ..... *

MONDAY, September 18

7:00-8:00 a.m. — **Northshore Golf Course**
Golf Tournament Check-in (Men) ..... **Pro Shop**

8:00 a.m.-On — **Northshore Golf**
Golf Tournament (Men) ..... **Course**

10:00 a.m.-12:00 Noon
Registration Desk Open ..... **Third Floor Foyer**

10:00 a.m.-4:00 p.m.
Turfgrass Facilities Tour ..... *

11:30 a.m.-1:00 p.m.
Spouse/Guest Lunch and Fashion Show ..... **Sonia Room**

1:00-5:00 p.m.
Registration Desk Open ..... **Third Floor Foyer**

6:00 p.m.-On — **Bicentennial Pavilion**
Get Acquainted ..... **Rotunda and Court Yard**
Come As You Are
Mexican Fiesta

TUESDAY, September 19

7:00 a.m.-2:00 p.m.
Registration Desk Open ..... **Third Floor Foyer**

7:00-8:00 a.m. — **Tacoma Ballroom**
Wake-up Beverage Service ..... **Three**

8:00-10:00 a.m. — **Tacoma Ballroom**
General Session I ..... **One and Two**

8:30 a.m. — **Northshore Golf Course**
Golf Tournament Check-in (Women) ..... **Pro Shop**

9:00 a.m.-On — **Northshore Golf Course**
Women's Golf Tournament ..... **Pro Shop**

10:00-10:25 a.m. — **Tacoma Ballroom**
Beverage Service Break ..... **Three**
– and –
Questions and Answers

10:25 a.m.-12:00 Noon — **Tacoma Ballroom**
General Session II ..... **One and Two**

12:00 Noon-4:30 p.m. — **Bicentennial**
EXHIBITION and Strolling Lunch ..... **Pavilion**

7:30-9:30 p.m.
Corner Drug Store — **Bicentennial**
Ice Cream Social — **Pavilion**
Juke Box Music ..... **Rotunda**

WEDNESDAY, September 20

7:00-8:00 a.m. — **Tacoma Ballroom**
Wake-up Beverage Service ..... **Three**

8:00-10:00 a.m. — **Tacoma Ballroom**
Split Session A-1 ..... **One**
(Golf Courses)

Tacoma Ballroom
Split Session A-2 ..... **Two**
(Parks, Athletic and
Others Grounds & Lawns)

9:00 a.m.-3:00
Spouse/Guest Tour ..... *

10:00-10:25 a.m. — **Tacoma Ballroom**
Beverage Service Break ..... **Three**
– and –
Questions and Answers

10:25 a.m.-12:00 Noon — **Tacoma Ballroom**
Split Session B-1 ..... **One**
(Golf Courses)

Tacoma Ballroom
Split Session B-2 ..... **Two**
(Parks, Grounds & Courses)

12:00 Noon-On
On Your Own .....

5:30-6:30 p.m.
President's Reception
(for Presentors and Exhibitors) ..... **Sonia Room**

6:30-7:30 p.m. — **Tacoma Ballroom**
Social Hour ..... **Three**
– No Host –

7:30 p.m.-On — **Tacoma Ballroom**
Annual Banquet ..... **One and Two**

THURSDAY, September 21

6:30-8:00 a.m.
Board of Directors
Continental Breakfast — **Executive**
and Meeting ..... **Board Room**

7:00-8:00 a.m. — **Tacoma Ballroom**
Wake-up Beverage Service ..... **Three**

8:00-10:00 a.m. — **Tacoma Ballroom**
General Session III ..... **One and Two**

10:00-10:25 a.m. — **Tacoma Ballroom**
Beverage Service Break ..... **Foyer**
– and –
Questions and Answers

10:25-12:10 p.m. — **Tacoma Ballroom**
General Session IV ..... **One and Two**

* See separate announcement for detailed destinations.

PROGRAM SESSION DETAILS

TUESDAY, September 19
GENERAL SESSION I
TACOMA BALLROOM ONE & TWO

Mike L. Kingsley, Moderator
NTA President
MeadowWood Golf Course

8:00-8:05 a.m.
Conference Kick-off

Mike L. Kinglsey
NTA President

8:05-8:20 a.m.
Role of the turfgrass extension specialist

Dr. Gwen Stahnke
Agronomy & Soils (Puyallup R&EC)
Washington State University

8:20-8:35 a.m.
Necrotic Ring Spot research update

Dr. Gary Chastagner
Plant Pathology (Puyallup R&EC)
Washington State University

8:35-9:20 a.m.
New synergisms in turfgrass fungicides

Dr. Houston Couch
Plant Pathology, Physiology, Weed Science
Virginia Polytechnic Institute and State University

9:20-10:00 a.m.
Turfgrass response to wear and traffic

Dr. Bill Meyer
Turf-Seed, Inc.

10:00-10:25 a.m.
Question and Discussion

TUESDAY, September 19
GENERAL SESSION II
TACOMA BALLROOM ONE & TWO

Bo Hepler, Moderator
NTA Past President
Senske Lawn & Tree Care

10:25-11:10
Maximizing fungicide effectiveness through spraying procedures

Dr. Houston Couch
Plant Pathology, Physiology and Weed Science
Virginia Polytechnic Institute and State University

11:10-12:00 Noon
Membership Annual Business Meeting

Mike Kingsley
NTA President

TUESDAY, September 19, 1989
EXHIBITION
BICENTENNIAL PAVILION

Noon-4:30 p.m.
Exhibition and Strolling Lunch

WEDNESDAY, September 20
SPLIT SESSION A-1
GOLF COURSES
TACOMA BALLROOM ONE

Richard E. McCoy, Moderator
NTA Board Director
Glendale Golf and Country Club

8:00-8:25 a.m.
Protective covers and PGRs on bentgrass greens

Charles Golob
Agronomy & Soils (Puyallup R&EC)
Washington State University

8:25-8:50
Annual grass and broadleaf control with 'Dimension' (dithiopyr)

Dr. Stan Brauen
Agronomy & Soils (Puyallup R&EC)
Washington State University

8:50-9:10 a.m.
Mode of action of triclopyr herbicide for turf

Dr. Stott Howard
Agronomy & Soils (Mt. Vernon R&EC)
Washington State University

9:10-10:00 a.m.
Golf course architecture – experience world wide –

Ronald Fream
Golfplan Design Group, Ltd.

10:00-10:25 a.m.
Questions and Discussions

WEDNESDAY, September 20
SPLIT SESSION A-2
Parks, Athletic and Other Grounds and Lawns
TACOMA BALLROOM TWO

William B. Griffith, Moderator
NTA Board Director
Walla Walla Parks & Rec. Dept.

8:00-8:25 a.m.
Living mulches

Dr. Stott Howard
Agronomy & Soils (Mt. Vernon R&EC)
Washington State University

8:25-8:50 a.m.
Slow release fertilization of ornamentals

Gary Funze
Vigro Industries

8:50-9:10 a.m.
Athletic field maintenance

John Monson
Seattle Seahawks, Inc.

9:10-10:00 a.m.
Athletic field construction with sand

Dr. Don White
Horticulture
University of Minnesota

10:00-10:25 a.m.
Questions and Discussions

PROGRAM SESSION DETAILS

WEDNESDAY, September 20
SPLIT SESSION B-1
Golf Courses
TACOMA BALLROOM ONE

Randy D. Shults, Moderator
NTA Board Member
Tualatin Country Club

10:25-11:00 a.m.
Golf course regulatory compliance – auditing your situation

Steve Warton
Hall-Kimbrell Environmental Svcs.

11:00-11:35 a.m.
Thoughtful tree planting on golf course

Larry Gilhuly
United States Golf Association

11:35-Noon
Turfgrass management and golf course maintenance – experiences

Ronald Fream
Golfplan Design Group, Ltd.

WEDNESDAY, September 20
SPLIT SESSION B-2
Park, Athletic and Other Grounds and Lawns
TACOMA BALLROOM TWO

Rebecca R. Michels, Moderator
NTA Board Member
Messmer's Landscaping Service, Inc.

10:25-11:00 a.m.
New fine-leaf fescue cultivars

Dr. Bill Meyer
Turf-Seed, Inc.

11:00-11:40 a.m.
Spray tank mixing chemicals

Dr. Paul Santonetto
W. A. Cleary Chemical Corporation

11:40-Noon
Response of bentgrass to pH and aluminum

Dr. Shiou Kuo
Agronomy & Soils (Puyallup R&EC)
Washington State University

THURSDAY, September 21, 1989
GENERAL SESSION III
TACOMA BALLROOM ONE & TWO

Patrick J. Nibler, Moderator
NTA Board Member
PRO GRASS

8:00-8:30 a.m.
Turfgrass water consumption in the Northwest. How do we compare to other regions?

Dr. Stan Brauen
Agronomy & Soils (Puyallup R&EC)
Washington State University

8:30-9:20 a.m.
Progress in developing improved annual bluegrass

Dr. Don White
Horticulture
University of Minnesota

9:20-10:00 a.m.
Ground water, pesticide, and nutrient management plan

Ms. Dale Stantton
Department of Ecology
State of Washington

10:00-10:25 a.m.
Questions and Discussion

THURSDAY, September 21
GENERAL SESSION IV
TACOMA BALLROOM ONE & TWO

Norman J. Whitworth, Moderator
NTA Board Member
Norman Whitworth, Ltd.

10:25-11:00 a.m.
Pendimethalin dissipation and movement in a Kentucky bluegrass root zone

Dr. Gwen Stahnke
Agronomy & Soils (Puyallup R&EC)
Washington State University

11:00-Noon
How to utilize what you have learned at this meeting – the shift from listening to doing

Troy Bussey
Bussey Associates, Inc.

Noon-12:10 p.m.
Conference Wrap-up

Mike L. Kingsley
NTA President

Special Events Program

Monday, September 18

8:00 a.m.-On	Golf Tournament* (Men)	Northshore Golf Course
10:00 a.m.-4:00 p.m.	Turfgrass Facilities** Tour	***
11:30 a.m.-1:00 p.m.	Spouse/Guest Lunch and Fashion Show	Sonia Room
6:00 p.m.-On	Get Acquainted Come-as-you-are Mexican Fiesta	Rotunda and Court Yard Bicentennial Pavilion

*7:00 a.m. Check-in at Pro Shop
**9:30 a.m. Assemble in lobby
***See separate announcement for detailed destinations

Tuesday, September 19

9:00 a.m.-On	Golf Tournament* (Women)	Northshore Golf Course
12:00 Noon-4:30 p.m.	**EXHIBITION and STROLLING LUNCH**	Bicentennial Pavilion
5:30 p.m.-6:30 p.m.	President's Reception (for Presentors and Exhibitors)	Sonia Room

*8:30 a.m. Check-in at Pro Shop

Wednesday, September 20

9:00 a.m.-3:00 p.m.	Spouse/Guest Tour	*
6:30 p.m.-On	Annual Banquet Social Hour and Banquet	Tacoma Ballroom One, Two and Three

*See separate announcement for detailed destinations

Conference *(Continued from page 2)*

a city park in Renton; the Seattle Seahawks, Inc. practice facility in Kirkland; and the Kubota (Japanese) Gardens in Seattle. A box lunch will be included in the tour price.

SPOUSE/GUEST ACTIVITIES

Friendship and Fall Fashions Luncheon

Monday will be a get acquainted day. Spouses and guests will gather at 11:30 a.m. in the Sonia Rose Room on the 26th floor of the hotel. What a view! The luncheon will be specialty of the chef. Following lunch they will be treated to a Fall accessory fashion show being presented by Fashion West of Renton. Alice and her crew are accessory wizards! If you wear or bring an outfit you'd like accessorized, they'll be glad to do it for you. They can give any outfit two or three totally different looks! Join us for friendship and Fall fashions.

Women's Golf Tournament

Tuesday is golf day for the spouses and guests at the Northshore Golf and Country Club. Transportation will be provided from the hotel for preregistered golfers.

Gig Harbor and Tacoma Waterfront Tour

Wednesday will be bustling with activity as spouses and guests participate in a tour of Tacoma. It starts with a short bus trip to the quaint, picturesque village of Gig Harbor. Enroute you'll have a fantastic view crossing the high Tacoma Narrows Bridge, the 5th longest suspension bridge in the world. What is the song? – "On a Clear Day". . . Returning to Tacoma you'll visit the new tropical reef aquarium and view the magellanic penguins at Point Defiance Park. Lunch will be available at the new Chicken Coop Cafe. Finishing off the day will be a tour of Tacoma's busy waterfront and some of the historical sites and then back in plenty of time to freshen up for the banquet that night.

Tourist Information

Information about tourist opportunities and events can be obtained by contacting the Tacoma-Pierce County Visitor and Convention Bureau at 950 Pacific Avenue, Suite 450, P.O. Box 1933, Tacoma, Washington 98401 – Telephone (206) 627-2836.

WSU Selects Goss Replacement

Ms. Gwen Stahnke has accepted the Extension Turfgrass Specialist and Assistant Agronomist position with Washington State University located at the Puyallup Research and Extension Center. She will spend 75% of her time in Turfgrass Extension in a similar position vacated by Dr. Roy Goss, who held the Extension position for 30 years. The remaining 25% appointment will be spent in turf science research.

Ms. Stahnke is from Illinois. She was an Assistant Superintendent at Medinah Country Club at Medinah, IL, Area Agronomist for TruGreen Corporation and an instructor at Lake City Community College in Florida. Ms. Stahnke received a Masters degree under Dr. James Beard at Texas A & M University and will complete requirements for the doctorate degree at the University of Nebraska this coming summer. Ms. Stahnke should arrive at Puyallup around September 1 in time to get acquainted at the NTA annual conference this fall.

Research and Scholarship Fund Raising Campaign

Randy Shults, chairperson of the NTA Research and Scholarship Fund Committee, asks everyone to remember the 1988/89 Research and Scholarship fund raising campaign current underway.

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 program 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 have been mailed to members and industry supporters. Contributions are tax deductible and those contributing to the research and scholarship fund each year are recognized in the NTA Annual Director.

Buy a share today in better turfgrass for tomorrow.

Roy L. Goss Turfgrass Endowment 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.

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.

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

Lawn and Sports Turf Statistics-USA

The total turfgrass area in the United State is estimated to be 25,000,000 to 30,000,000 acres (size of the 5 New England states), with 81% of this lawns (over 20,000 acres). Municipal, county and city parks have close to 1,000,000 acres of turf.

In a thick lawns, there are 6 turfgrass plants in each square inch, 850 turf plants in a square foot and about 8 million in an average lawn of 10,000 square feet.

Turfgrass is considered to be a $25 billion plus per year industry in the United States. It is estimated that 500,000 people make their living directly from the care and maintenance of turf. The sale of lawn care items is estimated at $4 billion a year, nearly 1/3 of the total amount spent on gardening.

Surveys show that a well maintained and designed landscape adds 15% to the selling price of a home. Recovery value is 100% to 200% for landscape improvement compared to an investment in new deck or patio which have recovery values of 40%-70%. Well designed and maintained landscapes add 60% to commercial property value.

Undesirable noise levels can be reduced 20-30% by grassed areas which absorb sounds.

Lawns are important in reducing temperatures and can be 30 degrees Fahrenheit cooler than asphalt and 10-14% cooler than bare soil.

A turf area 50′×50′ produces enough oxygen to meet the needs of a family of four.

Grasses trap much of an estimated 12 million tons of dust and dirt released annually into the atmosphere.

An acre of grass will absorb hundreds of pounds of sulfur dioxide during a year.

Healthy lawns absorb rainfall 6 times more effectively than a wheat field and 4 times better than a hay field.

One single grass plant can have 387 miles of roots.

Most of the 58 million children enrolled in public and private schools participate in physical education. It is important to have their playing surfaces well maintained and resilient to help minimize injuries.

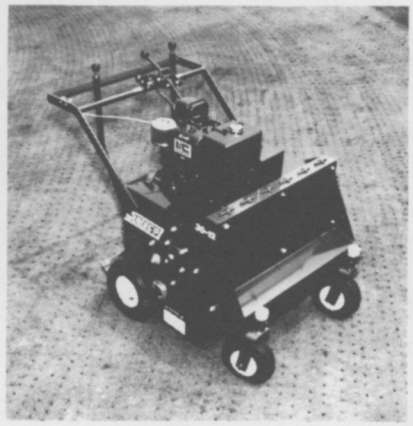
20,200,000 golfers play 445 million rounds of golf a year in the United States.

It is recommended that 6 acres of publically owned land be maintained as communal recreational facilities (not including golf courses) for every 1,000 people.

Source: The Lawn Institute

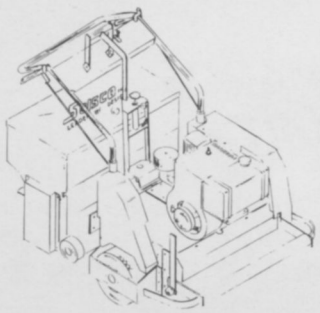
Quality Equipment For Quality Turfgrass . . .

FTA-60-24 Total Golf Course Aerator

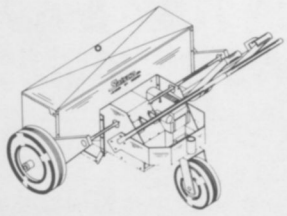


30-12 Greens Aerator

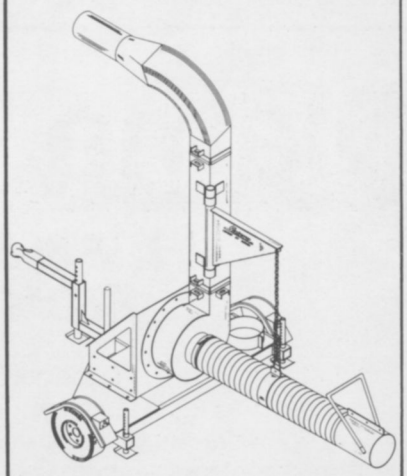
SALSCO products are known for Quality *and* Performance. No aerators on the market can outperform the FTA-60-24 . . . 128 holes per square foot, 60,000 square feet per hour . . . or the 30-12 . . . 36 holes per square foot, 13,900 square feet per hour. From self-propelled drop spreaders to powerful truck loaders, every one of SALSCO's twenty products is a rugged, state-of-the-art piece of equipment.



SS-35-20S Slicer Seeder



452 Drop Spreader



720 Loadervac Truck Loader

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1-800-8-SALSCO • FAX (203) 271-2596 • (203) 271-1682

Pesticides and Protective Clothing

Exposing your skin to some pesticides presents a health hazard and clothing provides a vital protective barrier against exposure.

Pesticide applicators can purchase chemical-resistant apparel, but recent surveys indicate the majority of pesticide users wear traditional work clothing when mixing, handling, and applying pesticides. They prefer ordinary work clothing because it is more comfortable, less expensive and easily available. They also doubt the need for protective clothing.

A non-punctured-type Tyvek is one of the disposable chemical-resistant garments on the market. It is made from spun-bonded olefin, a non-woven fabric that provides an effective barrier to many types of chemicals. Although you usually must dispose of non-woven garments after one use, Tyvek garments withstand up to four launderings. However, if your clothing is contaminated with a concentrated chemical, dispose of it rather than trying to clean it because of safety considerations.

Fabric Studies

Testing is under way on Gore-Tex fabric to determine its ability to provide protection from pesticides. Gore-Tex is a microporous membrane that is laminated between a shell fabric and a fabric lining. As a result, Gore-Tex allows perspiration to pass through the fabric, but it keeps liquid from entering the outside of the garment and contacting the skin.

A North Central Region research project focused on the influence of the following characteristics in creating a protective barrier:

- Fiber content,
- Fabric construction,
- Functional finishes, and
- Laundering methods.

Choosing Clothing

Absorbency and wicking are important considerations in determining chemical resistance. Tests conducted on cotton, polyester/cotton blends, polyester, nylon, acrylic and spunbonded olefin fabrics yielded these results:

– Pure cotton fabric exhibits the highest rate of absorbency, which means it absorbs a large amount of pesticide solution. However, less pesticide solution travels to under-clothing or skin.

– Lightweight fabric (broadcloth) demonstrated lower absorbency than poplin or twill in tests, but it also exhibited very rapid wicking. Broadcloth's tight weave appears to transport pesticide solution more rapidly and in greater quantities to under-clothing or skin.

– Synthetic fiber — acrylic, nylon and polyester — had low absorbency, but they had the highest wicking levels. Compared to other fabrics, the pesticide solution flowed rapidly from the garment to underclothing or skin.

– Spunbonded olefin fabric showed the lowest rate of absorbency and wick of the fabrics tested. It provides an excellent barrier against pesticide penetration and it offers extra protection when you wear it over work clothes.

– Clothing with a consumer-applied fluorcarbon soil-repellent finish gives the same protection as spun-bonded olefin, but is more comfortable to wear.

Source: The Bull Sheet

New Offices for PGA And Superintendents

After four years, golf administrator Ron Coleman has come out of his garage.

Since December, Coleman has been enjoying his new digs in the clubhouse of Elk Run, an executive nine-hole golf course that recently opened in the Covington area east of Kent.

His roomy new office serves as headquarters for the Western Washington Chapter, PGA as well as the Western Washington Golf Course Superintendent's Association. Coleman is executive director of both organizations, a role he previously fulfilled from his Enumclaw home's garage.

The difference in offices is like, well, night and day.

"I always felt it would be so much better to have the office at a golf course – much more conducive to conducting golf business. It's a big plus," the personable Coleman said between phone calls from golf pros and quick messages from his wife, Carole, who serves as office manager.

"I really enjoy being at this golf course," he said, admiring the view through his wall-size window. "It gets me back to seeing people all the time rather than being stuck in that garage."

If Coleman appears busy, even in the winter off-season, he is. He heads one of the PGA's larger chapters and is responsible for scheduling and conducting the dozens of pro-ams held throughout the golfing season, among his other duties. He also administers the needs of golf course superintendents throughout the Northwest and even schedules some events, super-ams, that bring together the superintendents and members of their clubs.

If that weren't enough, he also is director of golf for Elk Run, supervising its operation for its owner, Daryl Connell of Pacific Development Co. of Kirkland.

Source: Back Nine

New Pesticide Rules Adopted To Protect Ground Water

The Washington State Department of Agriculture has adopted new rules restricting the distribution and use of pesticides that may have potential to contaminate ground water.

The new rules, effective April 2, list 18 active ingredients which have been identified as having potential to move through soil into ground water either in their original form or as breakdown products. Pesticides containing these active ingredients may only be used by people certified by the department.

The products restricted by the proposal include several commonly used pesticides such as atrazine and metribuzin. Ten additional pesticides, including 2,4-D and methyl bromide, were included in the original rule proposal but were dropped from the final list due to information received at the hearing on January 24.

Under the new rules, pesticide dealers are required to keep records of sales of these pesticides for five years. All applicators, including growers, are required to keep records of all applications of these pesticides for five years. Dealers and applicators are required to furnish these records to the Department of Agriculture upon request.

"These records can help us determine local use patterns of pesticides that potentially could move into ground water," says Mary Toohey, Ag Chemical Registrar with the Department of Agriculture. "If any of these pesticides is found in ground water, we'll have the information we need to help interpret those findings and to develop ways to prevent future contamination."

A cooperative effort has been initiated by the state departments of Social and Health Services, Ecology and Agriculture to monitor and assess the impact of pesticide use on Washington ground water. As results become available from ground water mapping and monitoring by the cooperators and several federal agencies, adjustments in the list of active ingredients or other, more specific regulations may be necessary.

Recordkeeping by private applicators is a significant new requirement in Washington State. Up until now, private applicators were not required to keep application records when they applied most pesticides. The new rules institute a records requirement for all private applicators when using the pesticides on the list.

Pesticide dealers, commercial applicator firms and public agencies have for many years been required to keep and retain records. Commercial firms and public agencies are required to keep application records on all other pesticide products for three years. Pesticide dealers are required to keep records for most pesticide products for one year.

Other provisions of the new rules clarify existing rules and repeal obsolete requirements, remove obsolete products from the state restricted use list, and continue existing requirements governing phenoxy herbicides in eastern Washington.

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

Job Descriptions Guide

PGMS is pleased to announce that the newly revised edition of the GROUNDS MAINTENANCE FORMS & JOB DESCRIPTIONS GUIDE is now available.

This manual is an expanded 48-page edition. Eight additional pages include two more job descriptions, a detailed employee evaluation sheet, and a truck maintenance and load schedule. The manual is free to PGMS members upon request, and $12.00 for non-members ($15.00 if billed).

There are now three educational manuals available from PGMS. These include the GROUNDS MAINTENANCE MANAGEMENT GUIDELINES, free to members and $12.00 for non-members ($15.00 if billed), and the GROUNDS MAINTENANCE MANAGEMENT GUIDELINES, free to members and $12.00 for non-members ($15.00 if billed). To receive any of these publications, send your order (checks in U.S. dollars) to PGMS National Headquarters at 12 Galloway Ave., Ste. 1E, Cockeysville, Maryland 21030.

Controlling Moss in Lawns

by T. W. Cook and J. Whisler

The mild, wet winters in western Oregon encourage the growth of lawn mosses. Although these mosses are a significant lawn pest, surprisingly little is known about them. Only about a dozen species have been identified worldwide. In Oregon, *Rhytidiaedelpus sp.* and *Brachythecium albicans* are the species most frequently found.

Moss growth normally starts with fall rains and reaches a peak in early spring. Because most grasses grow poorly in winter, mosses are able to invade and often dominate lawns in only a few months. Moss growth declines in summer as conditions become drier and turfgrass growth increases, but under shady, irrigated conditions moss may grow through summer. Moss can tolerate long periods of drought in a dehydrated condition and rehydrate and grow with the onset of fall rains.

Cultural control

Although moss will invade well-maintained lawns, it usually occurs extensively in neglected lawns where cultural conditions enable it to outcompete turf. Moss encroachment is generally associated with thin turf, low fertility, highly acidic soils, shade, wet soils, and turf injury from insects, diseases, chemicals, or cultural practices. Long-term moss control is impossible unless these conditions are corrected.

Often turf is thin because it lacks fertilizer. Properly timed nitrogen fertilizer applications will increase turf density, vigor, and competitiveness. Late fall and spring are important times to fertilize to minimize moss growth. Liming soil to raise the pH to between 6.0 and 6.5 will benefit some grasses in the long run but will have no direct effect on moss.

Grasses grow poorly in dense shade because of lack of light and increased disease activity; therefore shady lawns usually have more moss than lawns in full sun. Thinning out trees by selective pruning or removing trees completely may reduce moss encroachment. In some cases, it is easier to redesign the area and eliminate turf than it is to improve lighting. When planting new lawns in shady sites, be careful to select shade-tolerant species. In relatively dry shade, the fine fescues will perform well. In wet, shady sites, roughstalk bluegrass will persist better than other grasses.

Wet soils, caused by poor drainage or excessive irrigation, provide a perfect environment for germination and growth of moss spores or plant fragments. Poor drainage can sometimes be improved by promoting water infiltration via core cultivation, slicing, or thatch removal. These practices also improve turfgrass vigor and competitiveness. Often drainage can be improved only by changing grading or installing subsurface drain tubing to lower the water table. Often wet soils are due to excess irrigation. Avoid nightly watering, particularly in fall or early spring when moss growth is vigorous.

Thin turf, caused by injury, is a common contributor to moss encroachment. Unirrigated lawns turn brown and thin out during summer, and when fall rains come, these lawns may not recover fast enough to compete with moss. Lawns injured by chinch bugs in summer are often slow to recover in fall and are easily overrun by moss. Severe dethatching in fall may also predispose the lawn to moss because turf is thin when fall rains come. Proper culture which promotes healthy, dense turf during the moss season will reduce moss encroachment in most situations.

(Continued on page 10)

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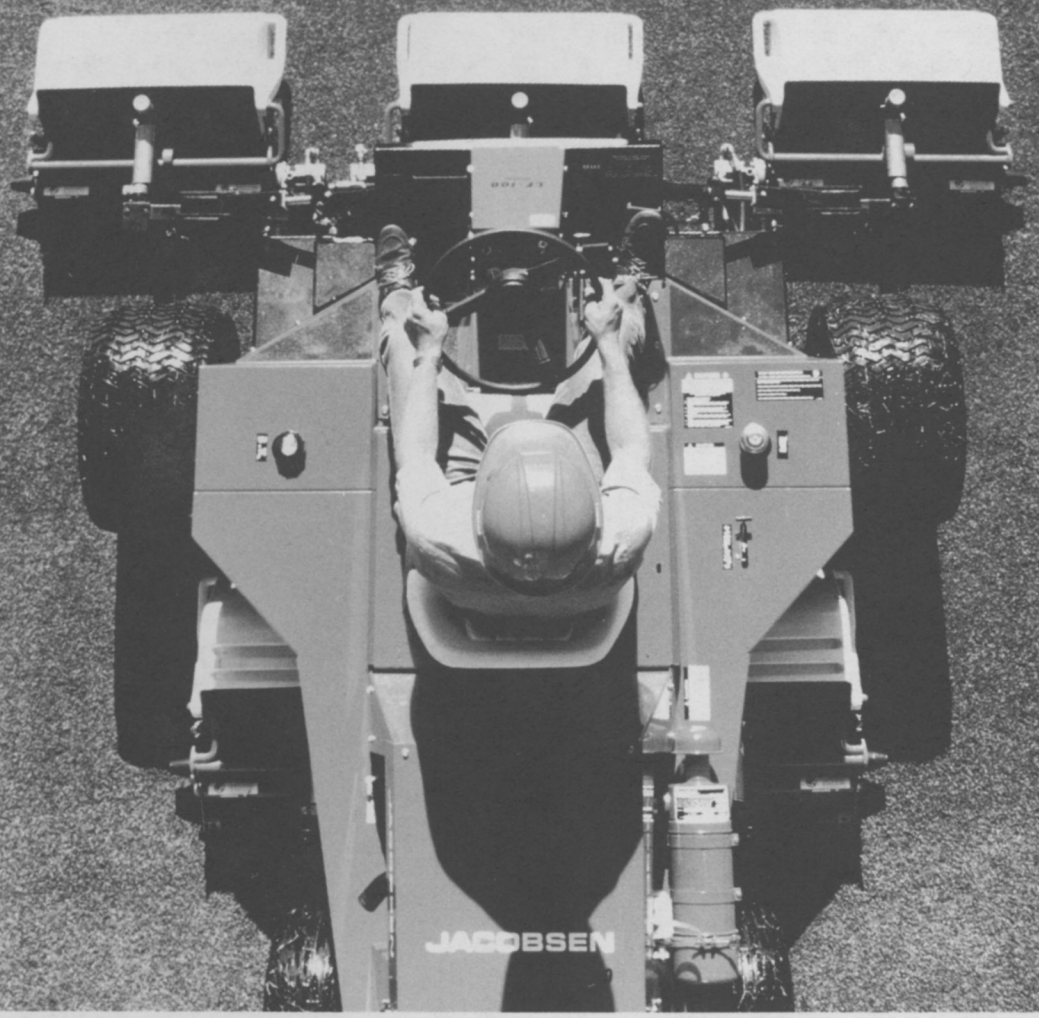

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Moss *(Continued from page 8)*

Mechanical control

Moss can be removed by dethatching in early spring. Optimum timing is mid-March through April when moss is still healthy and vigorous. With a flail type dethatcher (available at rental agencies), as much as 75 percent of the moss can be removed. Follow dethatching with nitrogen fertilization to stimulate turf growth and increase density. Where moss has invaded extensively, apply chemical sprays after dethatching to increase control.

Chemical control

Many chemical materials will effectively kill moss in lawns. Most commercial formulations contain metals such as iron (Fe), copper (Cu), or zinc (Zn) as the active ingredient. Cryptocidal (moss-killing) soaps are also available. All of these materials can kill moss but some are more effective than others.

Iron compounds are highly effective moss killers in turf. These compounds work quickly and the iron in them also stimulates a "green-up" of turf. Complete fertilizers with iron efficiently remove moss and stimulate grass growth, which improves turf appearance. Iron stains concrete and many other surfaces, so it must be applied carefully. Salts and chelated iron products applied as liquids work well on moss when used at rates of ½ to 1 pound of iron per 1,000 square feet. Dry formulations or fertilizer-plus-iron products are generally effective at rates of 8/10 to 1½ pounds of iron per 1,000 square feet. The key to effective control with iron compounds is thorough coverage of moss foliage. Liquid materials are extremely effective and give almost instant results. Dusty fertilizer-plus-iron products are more effective than clean granular products because they provide better coverage of the moss.

Cryptocidal soaps are relatively new chemicals for moss control. Soaps act as contact killers and tend to bleach the moss to a whitish yellow, in contrast to the dark brown of moss treated with iron. Soaps are safe on sidewalks and other structures. Typical application rates for cryptocidal soaps are 2½ quarts of product per 1,000 square feet. Limited testing at Oregon State University indicates these rates are effective.

Copper and zinc will remove moss on roofs and walks and will not stain structures. Unfortunately, compounds containing these elements act slowly as moss killers and may injure desirable turf grasses in lawns.

Some publications include ammonium sulfate as a moss control material.

Extensive tests at Oregon State University indicate it has little impact on moss but does stimulate turf growth, which often masks the appearance of moss.

Necrotic Ring Spot Turf Resodding

A commonly asked question regarding Necrotic Ring Spot is "If I resod a turf that has a history of Necrotic Ring Spot, will the disease develop on the new turf?" For a disease to develop there must be a pathogen present, a susceptible host and favorable environmental conditions. Resodding a turf with a history of Necrotic Ring Spot would not eliminate the pathogen from the roots left after removal of the diseased turf nor would it be likely to change the environmental conditions.

Thus, for resodding to be effective in controlling Necrotic Ring Spot, the new sod would have to utilize bluegrass cultivars or mixtures of grasses which have some resistance to Necrotic Ring Spot. In 1986, a trial was established to determine if resodding with a locally available mixed bluegrass sod would provide effective control of Necrotic Ring Spot.

On May 22, 1986, a plot was established at Cavanaugh's Motor Landing in Kennewick, Washington, by marking off five 400 foot sections of turf that had a history of Necrotic Ring Spot. Half of the turf in each section was removed using a sod cutter and new sod was laid down without any additional site preparation. The new sod consisted of an equal mixture of Brown, Bristol and Merit Kentucky bluegrass. The development of Necrotic Ring Spot on this new sod is being compared to the disease activity in the adjacent turf.

Necrotic Ring Spot symptoms have continued to appear in the unrenovated turf each fall, but have not developed on the resodded turf. It is too early to draw any firm conclusions from this test. Previous work in eastern and western Washington have shown that initial symptoms appeared on turf (established by seed or sod) two years after inoculation with **Leptosphaeria korrae.** Data will continue to be collected from this plot during the next several years to determine if disease development increases with time.

Source: Turf Line News/April 1989 and WSU/Puyallup R & EC

Managing Turfgrasses During Drought

by Ali Harivandi

Turfgrasses, like all green plants, require water for survival. Many California turfgrass and landscape facilities are facing, or will face, a serious water deficit this summer. Several California water districts have already enacted mandatory water rationing and many others are strongly encouraging water conservation. It is therefore essential for turfgrass managers and lawn owners to take preventive drought measures, especially in areas where turfgrass irrigation has been severely reduced or entirely eliminated.

It is important to remember that a brown-dormant turf possessing a healthy lateral stem system is not dead; such a turf often has the recuperative potential to initiate new growth with a few days after the first significant fall rain. This said, several cultural practices help turf plants survive drought.

Irrigation

Irrigate when first signs of wilt occur: spots in the lawn that turn a bluish-gray color, footprints that remain in the grass long after being made, and many leaf blades folded in half lengthwise; are all signs of wilt.

Irrigate frequently and deeply.

Avoid runoff by matching water application rates to soil infiltration rates. Apply water in several short repeat cycles, instead of one single long irrigation, to prevent runoff.

Stretch the time interval between irrigations.

Irrigate late at night or in the early morning when wind and evaporation losses are lowest.

Reduce irrigation of shaded areas relative to unshaded ones.

Immediately repair leaky pipes, heads, valves, etc.

Investigate the possible availability of effluent water, if state and local regulations permit its use.

Fertilization

Do not apply nitrogen during late spring, summer and early fall. If nitrogen must be applied because of play or other special use, then very light infrequent applications should be considered. Moderate or heavy spring and summer nitrogen applications lead to higher water use due to stimulated top growth. Certainly, lush growth is to be avoided where drought tolerance is desired.

Apply potassium if a deficiency is suspected. Potassium promotes increased root growth and thicker cell walls, thus enhancing drought tolerance.

Mowing

Increase mowing height to the highest allowable height for the turfgrass species grown. Following are the recommended mowing height ranges:

CUTTING HEIGHT RANGE

Turfgrass Species	Inches
Creeping bentgrass	0.2-0.5
Colonial bentgrass	0.5-1.0
Bermudagrass	0.5-1.0
Zoysiagrass	0.5-1.0
Red fescue	1.0-2.0
Kentucky bluegrass	1.5-2.5
Perennial ryegrass	1.5-2.5
Tall fescue	1.5-3.0

By increasing the cutting height, the turfgrass leaf area and thus photosynthesis are also increased. This results in more carbohydrates for plant growth, especially root growth. In general, the higher the height of cut on turf, the deeper and more extensive will be the root system. Although transpiration (and therefore water loss through the plant) will also be slightly greater with higher mown turf, the advantages of a more expensive root system outweighs this drawback.

Do not allow grass to grow more than twice its mowing height (e.g., if the mower is set for a 2-inch cut, mow before the turfgrass reaches an overall height of 4 inches).

Keep mower blades sharp and properly balanced. A leaf blade cut by a sharp blade will heal more quickly, losing less water than a leaf shredded by a dull mower.

Aerification

Aerify (by coring or slicing) slopes and compacted heavy clay soils to permit efficient water penetration into the soil. Compaction can reduce water entry into the soil, resulting in water wasted by runoff or evaporation.

Water Use Priorities

Make a list of priorities for water use. For example, on a golf course greens are usually at the top and rough areas at the bottom of such a list. Under 30-40% water restrictions, it may be possible to shut off irrigation on rough areas and fairway approaches and still provide normal amounts of water to the rest of the course. A similar approach may be employed in many other turf areas. Allowing the lawn in front of a home to turn brown from no irrigation may not be a bad trade off for a green back yard!

If several turfgrasses are separately incorporated in a turf and landscape scheme, shut off water to a specific species according to the following ranking: kikuyugrass, bermudagrass, zoysiagrass, tall fescue, red fescue, Kentucky bluegrass, perennial ryegrass, highland bentgrss, creeping bentgrass, dichondra. This ranking is based on drought tolerance, root depth, and recuperative potential. More drought tolerant and deeper-rooted turfgrasses can withstand a longer drought period by going dormant and resuming growth tolerant species may actually die in a prolonged drought period.

Dormant Turf

In some cases, a brown, dormant turf resulting from lack of irrigation may not be objectionable. There is always, however, the option of turning a brown lawn "green" by applying turf colorant (synthetic turf dyes) to dead or dormant grass. Some colorants may provide an acceptable appearance for up to 10 weeks. Turf colorants are available from turfgrass suppliers or garden centers. If using colorants, be sure to follow the manufacturer's label instructions for rates and volume.

In summary, each turfgrass manager or lawn owner has special, specific problems, and opportunities for his/her facility. To deal with a drought condition effectively, the user must know local water availability, be aware of turf-grass management practices that lead to water conservation, and be willing to implement the latter.

1989 Seed Forecast

by Dr. A. Douglas Brede

Winter 1988/89 has been a wet season in the Northwest, replenishing the soil moisture after several years of drought. If Spring goes well, we should be looking at a good crop of grass seed for 1989 harvest.

Supplies of turf-type perennial ryegrasses should be sufficient to meet consumer needs this summer. In fact, there's been some question of whether perennial ryegrasses are going to be overproduced this year. Turf-type tall fescues should be in good supply, with the exception of limited availability on some of the newer varieties. Results from the latest NTEP Tall Fescue trial are expected out this spring, which should create heavy demand for new turf and dwarf varieties of tall fescue.

Kentucky bluegrass yields are a little harder to predict than ryegrass and tall fescue, because they're highly dependent on weather during filling. But present indications are good for an adequate crop. Availability of common Kentucky bluegrass should be up, owing to increased acreage planted by farmers. Availability of proprietaries should generally be good, with spotty shortages of specific varieties due to farmers plowing out fields (because of high grain prices).

Debut of new creeping bentgrasses and turf-type seeded bermudagrasses is expected in 1989, from Jacklin and several other companies. Availability will be limited on all new varieties.

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Tips on Renovation of Sports Turf

by Dr. Gilbert Landry, Jr.

At some point in time, most recreational turf managers are confronted with the challenge of turfgrass renovation. Even the best turfgrass management programs cannot escape this "experience". Renovation is usually needed because of field over-use, or because of the combination of high use and poor weather.

Renovation is necessary when maintenance and cultural practices are not enough to revive the turf, but reestablishment is not needed. Renovation usually involves controlling weeds, cultivation, and replanting into the existing turf. Specifically, renovation is needed when: (1) sufficient turf is not present for recovery, (2) deep cultivation is not needed, and (3) drainage is good. Before making a decision, be sure that the turf cannot recover through proper fertilization, irrigation, weed control, mowing, and cultivation. For example, although the turf may be worn to the soil surface, a vigorous turfgrass like bermudagrass may totally recover from rhizomes.

Reestablishment involves removal of existing turf, deep cultivation; and possibly soil modification, surface and subsurface drainage improvements, and replanting. Soil physical properties can often be improved by incorporating sand and/or organic matter into the soil. Poor surface and/or subsurface drainage is another reason for reestablishment. In some cases, the presence of a weedy perennial grass that can only be controlled with a nonselective herbicide or fumigant requires chemical renovation and/or reestablishment.

The first step in the renovation process is to determine and correct the cause or causes of turf decline. Factors that may contribute to decline are: (1) use of an unadapted species; (2) improper maintenance such as mowing height and/or frequency, fertilization, and/or cultivation, (3) problem pests such as diseases, nematodes or insects, (4) chemical injury resulting from improper use of fertilizers or pesticides, (5) excess thatch, and (6) over-use.

Renovation timing varies with location and somewhat with expected turf use. If possible, renovation should be done at the beginning of the growing season for the particular species. The cool season turfgrasses should be renovated in the fall while the warm season turfgrasses should be renovated in the spring. However, sometimes playing schedules dictate otherwise. In any case, it is essential to withhold traffic until the grass becomes completely established.

Effective renovation is dependent on good contact between the planting material (seed, sprigs or sod) and the soil. The steps in renovation include: (1) Removal of weeds to reduce competition with the newly established species. This requires that all weeds be identified for proper herbicide selection. Read the herbicide label carefully. Some herbicides such as glyphosate, 2,4-D and other phenoxy-type chemicals require up to 14 days between herbicide application and planting. (2) Removal of excessive thatch which restricts air, water, fertilizer and pesticide movement into the soil. Generally, more than 1/2 inch of thatch is excessive and leads to reduced turf vigor.

Vertical mowing, power raking or severe sweeping are commonly used to provide good seed/plant-soil contact. The number of passes required to remove enough thatch depends of course, on equipment effectiveness and thatch level. Some thatch can be left to serve as a mulch during establishment. Seeds or plant material planted in a thatch layer may germinate, but frequently die during establishment, during initial use, or later from moisture and/or temperature stress. (3) Cultivating the turf by coring, grooving, slicing or spiking enhances soil contact. Coring and grooving are preferred because soil is brought to the surface and becomes a topdressing. These practices also should relieve soil compaction.

It may be necessary to make two to five passes over an area to obtain proper cultivation. This generally depends on the degree of soil compaction, soil moisture and equipment. Vertical mowing or drag matting the area following coring helps break up and redistribute soil over the area. (4) Adjusting soil pH and fertility can be initiated as soon as a decision to renovate is made. Submit a representative soil sample to a reputable laboratory for testing and recommendations for renovating or establishing a turf. Allow three-four weeks for recommendations, obtaining fertilizer and/or lime, and application.

Applying materials after cultivation, particularly coring, will enhance penetration of nutrients into the soil. Most recommendations suggest a minimum of one pound of readily available nitrogen per 1,000 square feet initially. (5) Planting to insure seed/plant-soil contact is extremely important whether seeding, sprigging, or sodding.

There are two types of machinery very suitable to a renovation process. One combines vertical mowing and grooving with colters that insert seeds into slits in the existing sod. The other which some sod growers-contractors have, plants bermudagrass sprigs in rows 6-12 inches apart. The machines opens a slit into which the sprigs are placed and rolled firm into the existing sode. (6) Rolling after planting, if not done during planting, enhances seed/plant-soil contact. (7) Irrigation immediately following planting, especially when sprigging, enhances plant survival. The surface one-half to one inch of soil should be kept moist with frequent light applications of water (up to six times per day) for the first few weeks. Care should be taken not to over-water or allow the surface to become too dry. Once established, normal irrigation practices should be followed. (8) Fertilizer should be applied regularly beginning after about one inch of new plant growth is seen.

A soluble source of nitrogen should be used for rapid response. Nitrogen should be kept in balance with other nutrients, otherwise there will be excessive leaf growth and little root, rhizome, and/or stolon growth. Excessive nitrogen often leads to more rapid soil cover but less sod tensile strength, and results in rapid turf injury, wear, and destruction. (9) Mowing practices should be continued once the renovated turf has reached the proper height. Mow often enough to remove no more than one third of the leaf area per mowing.

The key to successful renovation often involves good post-planting management to allow for establishment. The second key to successful renovation is proper agronomic and recreational management to avoid the renovation "experience."

Source: Park/Grounds Management

What Good is a Golf Course!

by Lee A. Webb, C.G.C.S.

As a recent attendee of the Golf Course Superintendents Association of America's seminar on *Environmental Considerations in Golf Management,* I would like to share some of the topics of discussion.

"What good is a golf course anyway? Only the rich are able to use it." This is part of the image problem we in the golf business face when dealing with the general public who do not play golf. Well, here is a list of some of the things that a golf course does for the community.

Recharge the ground water
Filter that water through turfgrass
Rain-water run-off slowed in turf
Provides a Green-belt
Provides a wild-life habitat
Enhances the Oxygen-Carbon Dioxide exchange
Provides a heat-sink to moderate the temperature in the area
Aids in soil conservation
Uses less water than a subdivision
Pays more taxes in relation to services used
Raises property values
Provides employment for a number of people

This is just a partial listing but it is important for those of us in this business to think of all the good that a golf course does for the whole community, for non-golfers and golfers alike.

We must not fail to acknowledge that, yes, we do apply pesticides and fertilizers, but only as needed and in the correct rates. Turfgrass is an excellent filter and biodegrader thus the products that we use are confined to the surface and are consumed on site. They do not pose a leaching problem when applied properly.

Each of us in the golf business have an obligation to see that we do apply all of the materials that we use in the proper manner. One of the best ways to demonstrate our training is to become a certified applicator.

In the water use area we are responsible consumers. What water we use either aids the turf growth, cools the climate, or recharges the ground-water.

Do not forget that a golf course is an asset to the community.

How Do We Spend Our Time

The Average Person Spends in Their Lifetime:

- 7 Years in the Bathroom
- 5 Years Waiting in Lines
- 3 Years Sitting in Meetings
- 2 Years Playing Telephone Tag
- 1 Year Searching Through Clutter
- 6 Months Waiting at Red Lights

The Average Husband and Wife Only Spend Per Day:

- 4 Minutes Meaningful Conversation with Each Other
- 30 Seconds Meaningful Conversation with Their Children

Source: Fortino & Associates

Pesticide Use and Disposal

by Diane Kaufman, OSU
Clackamas County Extension Horticulturist/floriculture crops and bedding plants

Concerns about pesticides and their impact on human health and the environment are becoming increasingly wide spread among the general public.

The following information on pesticide use and disposal is based on a presentation by Les Stevens, president of the Oregon Agricultural Chemicals Association (OACA) at the October 1988 meeting of the Oregon Greenhouse Grower's Association with additional information from OSU Extension Circular 1159 entitled, *Agricultural and Silvicultural Pest-Control Operations.*

It is the responsibility of everyone involved in agriculture to insure proper use and disposal of pesticides.

What are some of the steps involved in proper pesticide use and disposal? The first step is to use pesticides wisely, selectively and to time their use properly. The second step is to minimize the amount of pesticide wasted. The key to minimizing waste lies in careful measurement and mixing of only the amount required to do a particular job. If leftover pesticide remains after the application, this leftover material should be collected in a properly labeled container and kept for use in the next application. After pesticide containers are empty, they should be rinsed 3 times (with the rinse water poured into the sprayer and used) to dissolve the pesticide.

• DISPOSAL OF EMPTY PESTICIDE CONTAINERS:

After pesticide containers have been triple rinsed the following steps should be taken to prepare them for collection by the Oregon Agricultural Chemicals Association (OACA):

1. Plastic containers should be cut in half horizontally leaving a top and bottom half.

2. Metal containers should be punctured at the top and bottom and then crushed.

When holding pesticide containers for pick up by the OACA, store them in such a way to keep them clean, out of sight and inaccessible to curious passers-by or children.

The OACA will pick up spent pesticide containers free of charge once a year, provided the containers are properly prepared and cleaned. Their next pick up in the North Willamette Valley will probably be in June. An announcement of the collection date will be printed in the *Capital Press, Farm Bureau Newsletter* and the *Oregon Farmer.* Your local pesticide dealer should also be informed of the collection date.

The instructions given above apply only to plastic and metal containers. According to Les Stevens, paper containers may be burned immediately after use. The metal and plastic are melted down and recycled into such materials as rebar used in construction and plastic materials.

• DISPOSAL OF PESTICIDES:

Unfortunately the Oregon Agricultural Chemicals Association (OACA) cannot pick up containers with material that is no longer legal to use. The only way to dispose of such materials is through the Arlington Hazardous Waste Program. The only other option is to secure them away safely on the site. The following are some notes on the proper cleaning of spray equipment.

• CLEANING EQUIPMENT:

1. Spray equipment should also be triple rinsed. Pesticide-contaminated water produced from cleaning the inside of sprayers can be sprayed on non-cropped, forested or fallow land or along fence rows on property belonging to the greenhouse/nursery owner as long as the following conditions are all met: A) The wastes are evenly applied; B) the soil does not become saturated; C) the wastes do not enter lakes, river, streams, wells, drainage ditches or storm drains; D) the waste application will not result in illegal residues or unwanted effects on subsequent agricultural or silvicultural crops; E) the waste will not pose a hazard to humans, pets, domestic animals or wildlife.

2. Small quantities (up to 1 gallon or 10 pounds) of waste pesticides can also be disposed of by dilute spraying on selected areas of land as long as the conditions stated above are all met.

3. Should a grower choose to dispose of waste water and small quantities of waste pesticides by applying them to vacant areas of his land, it is suggested that he alternate disposal areas each year and lightly cultivate the soil in the treated area, if possible, to speed up biological breakdown of the material.

4. Exterior surfaces of spray equipment should be washed at the site of use or on the grower's own property in such a way that waste water will not enter wells, storm drains, drainage ditches, creeks, streams, lakes or rivers.

Source: Ornamentals Northwest

Underground Storage Tanks: Ensuring Financial Responsibility

Operating an underground storage tank (UST) at a golf facility is just not as simple as it used to be.

In addition to stringent new rules that make safety systems mandatory for all buried petroleum tanks, the federal government now requires that operators ensure that there will be money to help pay the costs of damages caused by a leaking tank.

These damages could include the costs of cleanup, correcting harm to the environment, supplying drinking water and compensating for personal injuries or property damage. The potential expenses, in short, could be enormous.

Under the financial responsibility regulations published late last year, the U.S. Environmental Protection Agency now requires that operators of USTs containing petroleum products maintain insurance or other forms of "guarantee" so that they can pay all or part of these costs. According to EPA, this requirement not only helps protect the environment and injured parties, but also insulates UST owner/operators from the potentially disastrous financial effects of a significant leak or spill.

Meeting The Standard

When? The vast majority of golf course superintendents operating USTs will have until Oct. 26, 1990, to meet the financial responsibility standard. (This includes municipal operators.) For others (where the net worth of the owner exceeds an EPA-established threshold of $20 million), the requirement came into force in January 1989. New tanks installed before Oct. 26, 1990, don't have to comply until that date, but new tanks installed after then will have to meet the standard at the time of installation.

How much? The amount of insurance or other form of guarantee needed depends on:

- The type of business.
- The monthly "throughput" (usage in gallons).
- The number of tanks in operation.

Golf courses — because they are not involved in petroleum marketing, rarely exceed 10,000 gallons per month "throughput" and don't operate 100 or more tanks — are generally required to maintain:

- $500,000 "per occurrence" coverage (to cover the costs of each release).
- $1 million annual "aggregate" coverage (the total amount needed to cover all leaks in a single year).

In other words, you must certify that you can pay up to $500,000 to cover the costs of one major leak *and* up to $1 million to cover all incidents that might occur in one year. Thus, your insurance (or other form of guarantee) could cover a total of two $500,000 incidents or, theoretically, 500 $2,000 incidents.

All of this, of course, depends on *finding* insurance and, consequently, each insurance company's assessment of the potential risks at your facility.

How do you show financial responsibility? There are a number of ways an operator can meet the standard. To certify financial responsibility, a UST operator can:

- Prove that the owner can meet the cost of potential releases — self-insure, in other words. This is only an option for owners with a net worth greater than an EPA-established threshold of $10 million who qualify under one of two financial tests. This is not a likely aternative for the majority of golf operations affected by the new rule.
- Demonstrate that someone else will be financially responsible. This is the likely course of action for most golf course UST operators. The options are:

1. Insurance or "risk retention group" (RRG) coverage. (An RRG is a privately run insurance organization operated by businesses that share similar risks.)
2. A guarantee from a corporate parent or "substantial business partner" that either passes the tests noted previously or can obtain a surety bond or letter of credit for the amount required.

According to the EPA's Office of Underground Storage Tanks, insurance and RRG coverage of USTs is not yet widely available to tank operators outside the highly regulated confines of the petroleum industry. Thus, little is known about premium structures or coverage limits available.

The EPA also says that insurers may require special testing or improvements to meet the new UST safety standards. These could include liners, cathodic corrosion protection or leak detection. And, according to EPA:

"Some insurers simply will not provide coverage for certain types of tanks, like tanks that are more than 20 years old."

- State UST funds. A growing number of states operate UST cleanup funds that will help defray the costs of releases. However, these funds can *only* be applied to cleanup costs — and that is just a portion of the expense usually associated with significant releases. Call your fire marshal, state environmental agency or health department to find out whether funds exist and whether you are qualified to apply them to your proof of financial responsibility.

(Continued on page 18)

UST's *(Continued from page 17)*

• State-approved methods. State-level UST laws vary in stringency and regulatory structure. Some states offer alternative methods of certifying financial responsibility. Again, contact state authorities to find out more about UST regulations and financial responsibility requirements.

• Fully funded trusts. Operators can establish a trust in the necessary amount to pay for the consequences of release.

• A combination of methods. This is a realistic alternative when state funding and insurance are both available, but neither will cover the full amount. Obviously, this kind of "risk sharing" would help contain premium costs. Operators may also be eligible to supplement insurance with other approved state methods.

What records must be kept? Operators must maintain records documenting the type of coverage and a state-issued certification of financial responsibility. Operators must file a notice, including copies of these records, whenever:

• A new tank is installed.
• A leak is confirmed.
• There is a cancellation or shortfall in insurance coverage.
• Requested by regulatory authorities.

To be prepared for the October 1990 deadline, superintendents may want to begin checking with state authorities and then with their regular insurer to find out what types of financial responsibility coverage are available.

For a copy of *Dollars and Sense,* an EPA publication that explains the financial standards in-depth and lists state UST contacts and other sources of information, write:

U.S. Environmental Protection Agency
Office of Underground Storage Tanks
P.O. Box 6044
Rockville, MD 20850

For additional information on the new safety requirements for UST management, see "An Update For Managers: Understanding EPA's New Underground Storage Tank Regulations," November 1988 *GCM,* page 44).

Source: Golf Course Management/April 1989

NOTE: The Washington Legislature has taken action on this issue this recent legislative session.

1988-89
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Calendar of Events

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 15	**Turf-Seed, Inc. Pure Seed Testing Field Day** Contact Norm Whitworth (503) 659-3114/Bill Meyer (503) 981-9571
June 19-20	**1989 Summer Turfgrass-Fest** Contact Blair Patrick (206) 754-0825
June 20	**Washington State University (WSU) Field Day –** Contact Stan Brauen (206) 593-8540
June 22	**WSU/Vancouver Research and Extension Unit Open House** Contact J. Scott Cameron (206) 696-6736
August 14	**NTA Board of Directors Meeting –** Contact Blair Patrick (206) 754-0825
August 14	**BEST (J. R. Simplot) Golf Tournament** Contact Norm Whitworth (503) 659-3114/Mike Vandecoevering (503) 227-3525
August 26-27	**4th Annual Seattle Flower Show –** Contact Phil Traff (206) 863-0542
September 18-21	**43rd NTA Northwest Turfgrass Confernce and Exhibition –** Contact Blair Patrick (206) 754-0825

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