NORTHWEST TURFGRASS TOPICS

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1991 Turfgrass Summerfest Set For June 24 and 25

Arrangements for the two-day **1991 Turfgrass Summerfest** sponsored by the Northwest Turfgrass Association, in cooperation with the WSU Puyallup Research and Extension Center, the High Cedars Golf Club, and the Tumwater Valley Golf Club, have been finalized.

Summerfest events will kick off with an 8:00 a.m. check-in and 9:00 a.m. shotgun start for the annual **NTA R. (Roy) L. Goss Golf Tournament for Research** Monday, June 24th, at the **Tumwater Valley Golf Club** in Tumwater, Washington. The Tumwater Valley Golf Club, owned by **Pabst Brewing Co.,** is donating their course and waiving their green fees in support of this annual research fund raising event. The tournament entry fee is $50.00 per player which includes a tee-packet, lunch and a research fund donation.

Day two of Summerfest, June 25th, is a full day of activities, too. Beginning at 9:30 a.m. the **WSU Puyallup Research and Extension Center** will conduct its annual **WSU Turfgrass Field Day** at Farm 5. At the conclusion of the field day, the group will move just down the road to the **High Cedars Golf Club** for the annual **Turf Grounds Maintenance and Irrigation Equipment Display and Demonstration** along with the traditional no-host hamburgers and beans cookout. Events at High Cedars are scheduled there from 12:30 p.m. to 4:00 p.m. Many thanks again go out to the High Cedars Golf Club owner/manager **Wally Staatz** for donating his driving range, hosting the display and demonstration and providing the cook-out.

Summerfest registration materials were mailed during the third week of April. If you haven't received them yet and are interested in golfing, displaying equipment or just attending the events, contact the NTA office for information.

Tumwater Valley Golf Club Hosts Summerfest R.L. Goss Golf Tournament

18 holes. 7,110 yards. Par 72. Grass Tees. Course ratings: championship 73.6, men 70.5, women 73.7; slope-121, 116, 123.

Tumwater Valley Golf Club in Tumwater, Washngton will be this year's host course for the annual Summerfest R.L. Goss Golf Tournament for Research scheduled for Monday, June 24, 1991. Tumwater Valley Golf Club is one of the most enjoyable courses in the Pacific Northwest. This tough track, rated among the nation's top-50 public courses by **GOLF DIGEST**, offers a full range of amenities, including a restaurant that serves international cuisine. Tumwater Valley's staff, including longtime head PGA pro Gary Parker and superintendent Jeff Mason, is a friendly, conscientious group. The course's locale in a scenic valley allows regular visits from deer and Canada geese, and affords vistas of Mount Rainier. It's also the site of the famous artesian wells of the old Olympia Brewing Company now owned by Pabst Brewing Company. Tumwater Valley was built by the Olympia Brewery in 1968 as a recreational facility on the site where their beer's key ingredient—"it's the water"—was obtained. Though Olympia was purchased by Pabst in the early 1980's, the brewery and golf course have continued their amiable partnership.

GOLF DIGEST's high ranking of Tumwater Valley is well deserved. In summer, its undulating greens are very fast and difficult to negotiate. Sand traps lurk alongside fairways and greens, and the Deschutes River (no relations to the like-named Oregon waterway) winds through the course to cause additional trouble. Other water hazards, presumably of the artesian variety, enter play as creeks and ponds. A listing of top holes would always include the 4th, a 456-yard par-4 that features a creek 50 yards off the tee, a lengthy fairway, and a speedy, contoured green. Also worthy of note are the 2nd and the 17th holes, both par-3s with two greens. Each Tumwater Valley hole is an adventure, and after a round, players don't know whether to mutter "it's the water," "it's the sand," or "it's the putter."

Source: Golf Courses of the PNW

45th NTA Northwest Turfgrass Conference and Exhibition Taking Shape

Enclosed in this newsletter is an announcement and invitation pertaining to the Northwest Turfgrass Association sponsored **45th Northwest Turfgrass Conference & Exhibition** scheduled for The Coeur d'Alene Resort and Conference Center in Coeur d'Alene, Idaho September 16-19, 1991. This year's program will kick-off Monday with two choices for registrants—the tour of turfgrass related facilities in the area or the traditional conference golf tournament. That evening the day's activities will culminate with a repeat of last year's immensely popular get-acquainted reception and table-top supplier exhibition.

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President's Message

Bill Griffith

Spring has finally sprung for most of us and that means a start to putting the harsh realities of winter behind us. Most of us view winter as a time to regroup, recharge the batteries, or plan for the coming growing season. Many of our members have had to face yet another winter that has meant loss of turf and plant materials. Areas along the Columbia River by Portland and Vancouver, Easter Washington (especially Spokane), and I'm sure there are others, have been hard hit for the second year in a row. This can cause extreme pressure on the turf and grounds managers especially when their "consumers" think that they can control Mother Nature. It is my desire to have a good panel discussion on the "Prevention and Recovery from Winter Desiccation" at the fall NTA conference. If you have experience and/or knowledge in this area, please call me and be willing to share your experiences and ideas with the rest of us. For those of you faced with many more weeks of recovery, my prayer is for much better than normal growing conditions.

P.S. Don't forget this year's Summerfest (Golf Tournament to be held at the beautiful Tumwater Valley Golf Course) on June 24 and 25.

Turfgrass Conference

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Tuesday morning will be the first of two and a half days of a wide variety of professional development training and information sessions. Pesticide recertification credits (Washington and Oregon) and GCSAA Continuing Education Units (CEUs) will be available for those sessions of the program qualifying. The program will again include a mix of general sessions and two-track sessions. The two-track sessions will consist of one track designed for **golf course personnel** and the second track for **parks, grounds and athletic field personnel.**

Wednesday night's traditional annual banquet has been shelved for this conference and will be replaced by an evening cruise on Lake Coeur d'Alene. Other social activities will be available for registrants, members of the family and guests.

Look for your conference registration information in the mail beginning in May and June. If you need information before that, call the NTA office for information.

Coeur d'Alene Golf Course Features First Floating Green

Coeur d'Alene is underscoring its reputation as "Playground of the Pacific Northwest" with the opening of the Coeur d'Alene Resort's new waterfront golf course.

Imagine yourself at the 45th Northwest Turfgrass Conference and Exhibition golf tournament standing on the fourteenth tee looking across the sparkling waters of Lake Coeur d'Alene to the fourteenth green floating some 130 yards from the shore. Your tee shot hits the heart of the green, avoiding the sandtraps and flower beds that rim the green. A quick chauffeured boat trip whisks you and your group to the green to finish the hole, then back to the shore and the fifteenth tee. You've mastered one of the top golf holes in the world on what promises to be one of America's most spectacular courses.

The Coeur d'Alene Resort Golf Course was designed by Scott Miller, president of Scott Miller Design and a 10 year veteran of the Jack Nicklaus organization. Miller's credentials include design work on Castle Pines Golf Club, Agusta National Golf Club (renovation), two new courses for Westin Hotels in Hawaii and two courses in Japan.

According to Miller, "The Coeur d'Alene course is designed to be challenging yet fair to all skill levels, from professional to amateur, and playable for both men and women, affording each player the opportunity to create his or her own challenge."

1991/92 Board Director Position Nominations

This year's NTA Nominations Committee, chaired by William Johnston, is soliciting names of individuals interested in serving as board directors on the NTA Board of Directors.

The terms of two board directors end this year. Both are eligible for nomination and re-election to a second term but neither has expressed his intentions regarding running for a second term, as yet. In addition to openings created by expiring board director terms, the association of officers quite often come from the board director ranks thus opening director positions.

Nominations of directors candidates may either come from the Nominations Committee or via a written nomination endorsed by not less than fifteen (15) active members of the association. Such written nominations must be received in the NTA office at least twenty-five (25) days before the date of the annual membership meeting (September 18, 1991). Nominations cannot be accepted from the floor at the annual membership meeting, so anyone interested in running for a director position should either contact the nominations committee chair or prepare to submit a written nomination as prescribed above.

Vacancies on the board of directors are filled by vote of the members present at the annual membership meeting conducted during the annual conference. Board directors are elected for three year terms.

NTA Members To Get BACK NINE Magazine

As a result of recent discussions between NTA and BACK NINE magazine publisher/editor Alan Wentzel, all NTA members are to be added to the BACK NINE magazine circulation list free of charge. Some superintendents are already getting the magazine; however, steps have now been taken to include members on the magazine's circulation list.

BACK NINE is a subscription supported magazine aimed at golfers in the Pacific Northwest. It is published six times a year by Back Nine Publishing Co., Inc. based in

Seattle, Washngton. Publisher/editor Wentzel says superintendents are essential personnel to the success and quality of the golf course industry in the Pacific Northwest and he wants those folks to be receiving his publication.

Annual Dues Deadline For 1991

The deadline for members to pay their dues for the year is **MAY 15, 1991**. If you are one of those folks who may have allowed your membership to lapse, now is the time to get those dues in. This newsletter will be the final edition mailed to those who have allowed their membership to lapse and only those who have paid their dues for the year appear in and receive the year's annual directory.

1991/92 Annual Membership Director

The Directory of the Northwest Turfgrass Association for 1991/92 is being put together now and should be ready for distribution during the summer. The directory includes an alphabetical listing of active members by name with a cross reference by company. Also included is a listing of NTA Research and Scholarship Fund contributors; officers and committee chairs for the association; a listing of cooperative extension offices in the region; a listing of greens industry publications; a listing of greens industry associations; a list of sources for technical assistance with turfgrass related concerns; et al.

The directory is one of the membership services that comes with the payment of member dues. Any member who has not received a director by the end of July should contact the NTA office.

1991/92 Annual Directory Advertising Space

The deadline for ordering advertising space in the **Directory of the Northwest Turfgrass Association for 1991/92** is on top of us. Anyone who has not already ordered advertising space and wants to have an ad in the next membership directory needs to contact the NTA office no later than May 15, 1991.

NTA Research and Scholarship Fund Committee Undergoes Reorganization

For some time now, an extensive amount of work has been done by a group of representatives of the golf course superintendent associations in the region and NTA to devise a system whereby allocations by these organizations for research and scholarships would be as representative as possible of the views of the contributors and contributors would get the biggest bang for their buck.

One recommendation of the group was that the NTA committee considering allocations of NTA collected funds for research activities and scholarships should be representative of the key organizations in the region now giving out grants and scholarships. When establishing its committees for 1990/91, the NTA board responded to the group's recommendation by revising the NTA Research and Scholarship Committee composition to the following: two (2) members from the Inland Empire Golf Course Superintendents Association (IEGCSA); two (2) members from the Northwest Turfgrass Association; two (2) members from the Oregon Golf Course Superintendents Association (OGCSA); and, two (2) members from the Western Washngton Golf Course Superintendents Association. Each organization selects its own representatives and the chair of the committee is appointed by the NTA President and approved by the NTA board. Current members serving on the committee are: IEGCSA-Larry Farwell and Mike Kingsley; NTA-Jon Hooper and Tom Wolff; OGCSA-John Alexander and Robert Senseman; and, WWGCSA-Jeff Mason and John Monson.

NTA Approves $35,160 For Turfgrass Research

The NTA Research and Scholarship Committee recently submitted its recommendations to the NTA Board of Directors concerning research funds for the 1991/92 fiscal year. The committee, composed of representatives of the golf course superintendent associations in the region and

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Research Grants

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NTA, reported that over $53,000 in grant fund requests were received this year from the research universities in the region. After reviewing each of the proposals in depth and considering the funds available in the NTA Research Fund, the committee recommended to the NTA board that grants totaling $35,160 be approved for the coming fiscal year. The grant funds will be going to the following programs: OSU-$5,000; WSU/Pullman-$16,000; and, WSU/Puyallup-$13,560. The grant funds will be disbursed beginning July 1, 1991 for the fiscal year July 1, 1991-June 30, 1992.

Research project and activity proposals received by the committee this year included the following:

- Improved Turfgrass Establishment and Quality Utilizing Solid Matrix Seed Priming
- Evaluation of Bentgrass Germplasm for Turf Quality and Water Use Efficiency
- Protective Covers and PGRs on Bentgrass Putting Greens
- Necrotic Ring Spot Disease Research
- Bentgrass, Bluegrass, and Fescue Cultivar Evaluation
- Snow Mold Fungicide Trials
- Poa annua Biotype Characterization and Biological Control
- Management of Necrotic Ring Spot
- Turfgrass Water Use/Deficit Irrigation and Wear Tolerant Turf Management
- Quantification of Fate of Nitrogen From Amended and Trafficked Sand Putting Green/Tee Profiles
- Continued Maintenance and Development of the Lewis Brown Horticulture Research Farm

Research and Scholarship Fund Raising Campaign

Tom Wolff, chairperson of the NTA Research and Scholarship Fund Committee, urges everyone to remember the 1990/91 Research and Scholarship Fund fund raising campaign currently 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 give 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 will be mailed to members and industry supporters in the very near future. 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.

'91 Sod Summer Convention Moves To Portland, Oregon

In a sudden move, caused by existing and potential problems associated with the 5-year-old California drought, the American Sod Producers Association (ASPA) 1991 Summer Convention has been relocated from Santa Barbara to Portland, Oregon. The Convention and Field Days will be July 31-August 2, one week later than originally scheduled.

JB Instant Lawn and Turf-Seed, Inc., readily agreed to host the Portland Convention that will include a welcoming banquet on the JB turfgrass sod farm, equipment displays and demonstrations and a comprehensive tour of Turf-Seed's 110-acre research facility, as well as a tour of another sod farm in the area, Oregon Tree and Turf. The Red Lion Lloyd Center in downtown Portland will serve as the group's headquarters hotel. ASPA's annual business meeting, educational sessions and committee meetings will be held at the hotel.

The decision to relocate the convention was made by ASPA officials at the recommendation of the California Sod Producers Association. The group cited unpredictable water supplies, and questionable field conditions that would have diminished the meeting's success.

Complete details and registration materials for the Summer Convention and Field Day can be obtained by calling the ASPA offices at 708/705-9898, or by writing ASPA at 1855-A Hicks Road, Rolling Meadows, IL 60008. Fax requests should be sent to 708/705-8347.

Product Warning

We have learned that DuPont has issued an immediate recall of all *Benlate 50DF, Benlate 1991 DF* and *Tersan 1991 DF* brand fungicides. These products should *not* be used or sold. Superintendents with any of these products should return them to the place of purchase for full credit.

DuPont believes the products may have been contaminated with low levels of atrazine and could therefore injure turfgrass or other plants. The company plans to keep the products off the market until they can verify their purity. Superintendents can contact DuPont at 800/441-7515 if they have questions.

The company is making plans to notify all customers. However, I urge you to take immediate steps to communicate this important information to superintendents in your area so that we may prevent potential damage. Thank you in advance for your assistance.

Good Herbicide Management

by Chuck Buffett
Portland Community College

There is a need to learn how to manage herbicides properly for maximum profit, says Dr. Bert T. Swanson, Department of Horticulture, University of Minnesota. Swanson lectured at the 1990 Ornamental Northwest Seminars.

Swanson began by asking, "Why are we interested in weed control for our landscape plants?"

Weeds can retard the growth of landscape plants and can cause their death, he says. Weeds often harbor insects and diseases along with hungry rabbits, voles and other animals. Weeds also compete with landscape plants for light, water and nutrients retarding their growth.

Weed control methods

There are several weed control methods available, Swanson explains. The use of mulches, hand weeding and other cultivation practices have been used for centuries, and while they have their place there are also high labor or material expenses to consider. The use of large cultivating equipment has its own hazards and can damage bark and roots of landscape plants, what Swanson refers to as "tractor blight." Some success has been demonstrated with biological control of weeds, using a virus on Canada thistle for example, but this method of control is still in the future.

For cost and effectiveness, chemical control of weeds is a technology that is here today, Swanson says. "Unfortunately, this is pretty scary (herbicides) to nurserymen yet today," he adds.

The challenge for nurserymen and landscapers of using herbicides effectively is great. The biggest obstacle is the very nature of the job and the diversity of the landscape plants that need to be kept weed free. Herbicide tolerance will vary with plant age, type of soil and rooting depth. Also, chemical companies would rather develop herbicides for large acreage monoculture crops like wheat than develop a chemical that can be used on a wide variety of landscape plants.

Read the label

Swanson stresses the importance of reading the herbicide label before application. Taking the time and effort to understand the label can avoid costly mistakes. For example, applying a herbicide at half the recommended rate will result in no weed control, a waste of time and material.

It also pays to find out what landscape plants cannot tolerate the herbicide. A landscape plant not listed on the label may have its growth rate adversely influenced if the chemical is applied.

Swanson gives this example of the basic mistake of not reading the label: A person always fertilized his lawn and yard with Ureaform, a nitrogen fertilizer, before going on vacation. The product was hastily grabbed from the store shelf and applied. After returning from vacation, this person found all of the plants in the yard were dead. Instead of applying Ureaform fertilizer, Ureabor had been purchased, a herbicide used as a soil sterilant. After removing a foot of contaminated soil, the yard was replanted.

"It does pay to read the label," Swanson says. "We owe it to our plants to make sure we are not spritzing (spraying) them with herbicides that might kill them."

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Herbicide Management

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Herbicide basics

Swanson says the key to good herbicide management is to have a good thorough knowledge of the basics of the different types of weed control chemicals, formulations and their application.

He explains that there are four classifications of herbicides commonly used by nurserymen and landscapers: postemergent, pre-emergent, soil fumigants and soil sterilants.

Post emergent herbicides are used to kill vegetation already growing. A specific product is chosen to control the target plants. The rate of chemical use can vary depending on the weed to be killed, Swanson says.

Postemergent herbicides have four types: contact selective, contact non-selective, systemic selective and systemic non-selective.

Contact herbicides kill foliage. Plant tissues die when they come into direct contact with the chemical. This process usually takes just a few days. Systemic herbicides work differently by killing the entire plant. When the chemical comes in contact with the plant, it is absorbed and moves to other parts of the plant. However, the process of plant death will take longer.

Contact selective herbicides kill specific groups of plants, for example, broadleaf weeds. Swanson says that 2, 4-D is a frequently used example of this type of chemical.

Herbicides that kill all plant tissues sprayed are contact non-selective herbicides, such as herbicidal oils and Paraquat.

Systemic selective herbicides control specific groups of weeds, such as grasses or broadleafs. Poast and Fusilade are examples.

The most widely used of the four is a systemic non-selective herbicide such as Roundup. With the non-selective chemicals, it is important to direct the spray to the weed to be killed to avoid injury to non-target plants, Swanson says.

Pre-emergent herbicides are the largest group of chemicals—Surflan, for example—used by nurserymen and landscapers. These products are applied before weeds germinate and do not kill weeds, with some exceptions, once they have started to grow. Pre-emergents are applied at a specific rate to give a broad spectrum of control. They work by forming a chemical film. Once a seed germinates in this herbicide environment, it dies, Swanson explains.

Soil fumigants kill everything in the soil including growing plants, weed seeds and other organisms. Examples of these chemicals are Methyl Bromide and Vapam. Swanson stresses the importance of adequately aerating the soil once the soil fumigant has done its job so that landscape plants placed in the treated soil do not die.

Swanson feels that there is little place in the nursery situation for **soil sterilants** These chemicals have long residual time in the soil and may be used on roadways, for example, for weed control as long as it is away from plant production areas.

Herbicides come in a variety of formulations, both dry and wet, to better match the chemical to the weed control job. Wettable powders (WP) are a dry product that ends up being a spray. This powder becomes suspended in the liquid. It is added to an emulsifiable concentrate (EC) is a product in a liquid form. It is an emulsion or a suspension of product in minute globules in another liquid. Both of these formulations need to be agitated, continuously mixed, to keep the active products suspended.

A formulation applied dry is granulars. Some granulars are water dispersible. These can be put in a liquid without dissolving and can be sprayed.

Spray adjuvants are products added to herbicides to enhance the performance of the chemical. They could be wetting agents and penetrants that allow the herbicide easier access into the plant or drift control agents.

Swanson sees a big future for slow-release herbicides. They can be a potential money saver by providing longer-term control of weeds with less injury to landscape plants and fewer numbers of herbicide applications.

Sprayer calibration

Calibration of spraying equipment is most important, Swanson says. The following quote illustrates this:

"An hour spent calibrating your equipment before the first day in the field and a few minutes each day to recheck performance can pay your wage to the envy of a corporate executive."

Despite the potential money savings of properly calibrated spray equipment, statistically applicators are not taking the time to calibrate, Swanson says. A 1986 surveyindicated that 67 percent of private and commercial applicators had an error rate greater than five percent from the recommended application rate. Five percent or less is considered an acceptable error rate when applying a pesticide. The average error rate was 26 percent. This means one-quarter more or one-quarter less of the recommended rate of the chemical was applied.

An underapplication of an herbicide would mean an ineffectual control of weeds. An additional application would be needed, which means more expense for fuel, product and labor. Also, the critical time for weed control is lost.

An overapplication of the chemical incurs additional expense due to waste of product. And, herbicide residues may injure the landscape plants.

Furthermore, there are calibration decisions that need to be made:

- How much of the formulation to use
- What application rates are for the product
- What speed over the ground
- How much of an area to apply
- What the application pressure will be for liquids.

Equipment needed for making calibration calculations are: a stop watch, graduated collection container, tape measure, flags and stakes and a small calculator, Swanson says.

When applying liquids the spray nozzle needs special attention. The most important calibration, Swanson says, is the nozzle flow rate. Nozzles also determine the pattern of spray. The spray pattern should not overlap.

Nozzle size and tip pattern should be the same on the sprayer to ensure uniformity. Additionally, the nozzles need to be tested to determine if each nozzle is delivering the same amount of product. Do not rely on the manufacturer-stated nozzle output, he says.

Test the nozzles on the sprayer by setting pressure with a collection container under each nozzle to measure output for a given time period. Add up the volumes discharged from each nozzle and divide by the number of nozzles. This will give the average volume from each nozzle. If the actual nozzle delivery is greater than five

percent from the average delivery, clean or replace the nozzle.

To increase the output of the nozzle do not increase the pressure. To double the output of a nozzle it would be necessary to increase the pressure by a factor of four. This puts the pressure level far above the optimum operating range. The resulting high pressure creates very small drops, increasing the chance for chemical drift and wears out the nozzles. Put on a larger size nozzle or increase the number of nozzles on the sprayer.

Another part of the calibration is the ground speed of the sprayer. The speed of the sprayer is inversely proportional to the application rate. When the speed increases the amount applied decreases. If more chemical is to be applied, for example, decrease the speed.

Swanson gives the following list of suggestions for apply herbicides:

- Apply when trees and shrubs are dormant
- Apply when weeds are small and actively growing with good soil moisture conditions
- Apply granular herbicides on dry foliage and irrigate to wash off chemicals from landscape plants and activate the chemicals
- Do not apply in windy conditions; early morning is best.
- Apply in optimum temperature and humidity conditions for the chemical being used.

The only way to manage herbicides and profit from their use is to know all we can about them.

Minors in Agriculture

In Washington State, agricultural workers under age 18 will be covered under the same kinds of employment standards as non-agricultural workers when new rules become effective Nov. 1.

The regulations cover age of employment, hours of work, types of employment, and parental and school authorization for children working in agriculture.

Meal and rest break requirements for all agricultural workers took effect Aug. 1.

The new rules were designed to:

- Protect children from workplace hazards and abuse.
- Encourage school attendance.
- Provide flexible hours of employment to meet the unique requirements of agricultural employers.

The rules were developed at the direction of the 1989 Legislature and in conjunction with a 14-member Advisory Committee on Agricultural Labor, consisting of agricultural employers, farm worker representatives, department officials and legislators.

Public testimony was heard at seven informal and seven formal public hearings statewide last fall and spring.

A summary of the facts is as follows:

Age of employment

In general, the minimum age to work will be 14. Children 12 and 13 can work during non-school weeks hand-harvesting or hand-cultivating berries, bulbs, cucumbers and spinach.

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Minors in Agriculture

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Hours of work

Age 12 and 13: Can work up to eight hours a day and 40 hours a week during non-school weeks.

Age 14 and 15: When school is in session, 14- and 15-year-olds can work up to three hours a day before or after school and up to 21 hours a week. This includes up to eight hours per day on weekends. When school is not in session, they can work up to eight hours a day and 40 hours a week.

Age 16 and 17: When school is in session, 16- and 17-year-olds can work up to four hours a day before or after school and up to 28 hours during school weeks. When school is not in session, they can work up to 10 hours per day and 50 hours a week. For the wheat, hay and pea harvests, up to 10 hours a day and 60 hours per week is permitted.

Start and finish times

Age 12 and 13: 5 a.m. to 9 p.m., when school is not in session.

Age 14 and 15: On school days, 7 a.m. to 8 p.m., except for work in dairy, livestock and irrigation, which can begin at 6 a.m. On non-school days, 5 a.m. to 9 p.m.

Age 16 and 17: 5 a.m. to 10 p.m., but not later than 9 p.m. on consecutive school nights preceding a school day.

Days per week

All minor workers can work a maximum of six days per week. Those who work in dairy, livestock, hay and irrigation may work seven days per week, with one day off every two weeks.

Prohibited/hazardous employment

Minors under age 16 are prohibited from certain dangerous work as prescribed by federal standards. Federal work prohibitions include operating corn pickers and grain combines.

The following prohibitions apply to all minors:

- Handling, mixing, loading or apply dangerous pesticides.
- Transporting, transferring or applying anhydrous ammonia.
- Handling or using blasting agents, such as dynamite or blasting caps.
- Harvesting crops prior to the expiration of the pre-harvest interval. The pre-harvest interval is the time required between the last pesticide application and harvest of the crop, according to Environmental Protection Agency labeling requirements.

Some work prohibitions that currently apply to non-agricultural workers will be extended to agricultural workers. Examples include operating power-driven wood and metal working machines, meat packing or processing, and roofing, among others.

Meal and rest breaks

A paid 10-minute rest break must be provided for every four hours worked. Employees working more than five hours shall receive a meal period of at least 30 minutes.

Minor work permits

Employers will be required to obtain a minor work permit from the department within three days after hiring a minor. These permits must be posted in a conspicuous place at the work site.

One permit is required for each employer hiring minor workers. The permit must be renewed annually.

Parental/school authorization

Before employing minors, employers must obtain written permission from the minor's parent and from the school. School authorization is required only during the school year, and the school must specify the number of hours (up to the maximum) the student can work.

Penalties

The department can suspend the employer's minor work permit if conditions exist that can cause death or serious harm. The permit will be suspended until the danger is removed. In addition, the employer can be fined up to $250 per violation.

Variances

Variances will be allowed for weather emergencies. In addition, other variances to hours of work and type of employment also may be granted when they will not:

- Harm the minor's health, safety or welfare, and
- Harm the minor's school performance.

Variances will not be granted for age of employment, meal and rest breaks, minor work permits, and parent and school authorization.

For more information, or copies of the rules, please contact the Department of Labor and Industries at 1-800-547-8367 or (206) 753-6311.

Sunlight and Your Skin

by Stephen E. Chiarello, M.D., P.A.
Dermatology & Dermatological Surgery

Why Avoid the Sun?

Sunlight permanently damages the skin. Ordinary sun exposure during tanning and outdoor sports causes permanent skin changes. These changes build up over the years, so that even moderate repeated sun exposure causes visible skin damage. Most of the wrinkling, roughening, freckling that appears on the face, hands and arms of white adults come from sun damage, not age. You can see this if you compare less sun exposed areas, such as your abdomen or the undersides of your arms, with sun-exposed areas such as your face, neck, or upper surfaces of your arms. The natural coloration of your skin, pigment, protects you from the damaging effects of sunlight. Persons with fair skin, who have little pigment, are more prone to sun damage than dark-skinned individuals.

The Skin-Damaging Effects of Sunlight

The skin-damaging effects of sunlight gradually lead to roughening, freckling, and wrinkling. Many people in their 30's and 40's are unhappy because their wrinkled, roughened, sundamaged skin makes them appear 10 or 15 years older. Unfortunately, there's no way to undo these changes. Young people should realize that they'll ultimately pay a steep price for the temporary glamour of a deep tan.

A more serious effect of sun damage is skin cancer. Sun damage is the chief cause of skin cancer. Sun damage is the chief cause of skin cancer. Here again, fair skinned individuals are much more susceptible. Skin cancer rarely occurs in blacks. As you might expect, skin cancer tends to occur on overexposed areas such as the face, back, shoulders and arms. While skin cancers can usually be removed by minor surgery in a doctor's office, it's better to prevent them.

Sun-Protective Measures

There are two basic ways of protecting your skin from the damaging effects of ultraviolet rays: (1) blocking out all light with an opaque material such as clothing and (2) using a chemical sunscreen that selectively absorbs ultraviolet rays. Blocking out all light with clothing is most effective. Certain sun protectives depend on the same principle. They coat the skin with a paintlike pigment that mechanically blocks light. They work well, but they're messy and rather unsightly.

There are also many clear sunscreens that absorb ultraviolet light. These "clean" sunscreens contain either PABA (para-aminobenzoic acid) or benzophenone compound. Some of the PABA-containing sunscreens are taken up by the skin and will provide some protection in the water, provided they are applied one or two hours before swimming. An occasional person is allergic to PABA or its derivative. So please try PABA-type sunscreens on a small area of skin before spreading it all over your body. The other chemical class of sun protectives, the benzophenones,

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Sunlight and Your Skin

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rarely cause skin allergy. Benzophenones wash off, however, and therefore do not protect swimmers. Some benzophenones have a bitter taste that can be annoying when applied near the mouth.

There are many sun protectives on the market. If they're designed and act as "sunlight blockers" and contain a PABA derivative or benzophenone, they're probably adequate. Water removes most sunscreens. Remember to put on another coat of sunscreen after swimming or bathing. If you're sweating, heavily, use some more sunscreen every hour or two. If you're in very bright sunlight, it's wise to protect your skin as much as possible with clothing (long sleeves, gloves, wide brimmed hats) and use one of the "clean" chemical sunscreens on the parts of the skin exposed to the sun.

Protect your lips from sun damage. The darker lipstick shades are effective for women. Men—and women who don't wear lipstick—should use ultraviolet-absorbing lip pomade. Women can use makeup with a sun protective. The sun protective should be applied first, then the makeup itself—especially if heavily colored—provides some sun protection.

You should aim to minimize sun exposure, not avoid it. Being outdoors is fun and healthy; don't let fear of sun damage keep you inside during sunny weather. Do use sun protectives when enjoying sports or a walk in the sun.

Specific Sun Protection Instructions

1. Avoid the 10 a.m. to 2 p.m. sun whenever possible as 70% of the earth's harmful radiation reaches us at that time.

2. Wear protective clothing: a broad brimmed hat and long sleeved, tightly woven white cotton shirt.

3. Apply a sunscreen containing both PABA and Benzophenone to dry skin at least one (1) hour before sun exposure for maximum protection. Wipe or wash residue from palms. Let dry before putting on clothes.

Hydration of Skin: (Bath or Shower) Immediately before application, provides an increased "protection reservoir". Daily application maintains this "protective reservoir". Always re-apply after swimming or excessive sweating.

Exposed areas of the skin most likely to suffer sun damage are the face (especially the ears and nose, the scalp if you are bald), the back of the neck, arms, tops of the hands and exposed parts of the chest.

Source: North Ohio Turf

The Turfgrass Industry

Turfgrass has a direct effect on the way many people live. It provides the medium for play on many recreational facilities; it modifies our environment to make life easier and more pleasant; it provides opportunity for a pleasing and functional home landscape; and, in turn, the turfgrass industry has a significant direct economic impact on our economy and huge indirect impact on our tourist economy.

Many recreational facilities depend on a uniform, vigorously growing and recuperating, well-maintained turf sward for many activities. Common examples include soccer, baseball and football fields, general use and specialty parks, and school grounds. Turfgrasses provide uses and also provide a safety cushion that is especially beneficial in contact and intensely physical sports.

Because many people now live in urban and suburban centers where glass, steel, concrete, asphalt, buildings and cars prevail, turfgrasses directly influence our immediate environment in many positive ways. As examples, actively growing turfgrasses have been shown to reduce high summer surface temperatures because of transpirational cooling. Turfgrasses, often with trees, shrubs and groundcovers, reduce discomforting glare and traffic noise. Soil erosion is reduced from surfaces covered with turfgrass, dust is stabilized, and fire opportunity is reduced or eliminated. Turfgrasses increase infiltration of water into the soil profile and also increases the water quality when this water moves below the turfgrass system.

Turfgrasses are used extensively in most home landscapes. In many settings, they provide the functional cover for child and adult activities and household pets. A well-landscaped home adds to the economic value of the property with the recovery value at, or exceeding, 100%.

Lastly, the turfgrass industry has a sizable direct economic activity for individuals and organizations involved in the design, installation, maintenance and support services for the industry.

Home Mechanics, It Isn't Slick to Dump Oil

by Matthew L. Wald, NEW YORK TIMES

Only the biggest spills get much attention, but the smallest ones add up. The amount of oil dumped by do-it-yourself auto mechanics every two and a half weeks is roughly equivalent to the amount spilled by the Exxon Valdez, experts say.

The environmental damage from lubricating oil is not nearly as dramatic as the results of the Valdez accident, in which the tanker dumped 11 million gallons of crude oil off Alaska, but it is still damage. Used engine oil contains lead and other toxic materials and has caused cancer in laboratory animals.

When the oil is dumped into sewers, it can reach lakes, streams and harbors and leave slicks, which interfere with photosynthesis and the water's oxygen level and can introduce oil into the food chain.

If oil goes through a sewage plant, it can disrupt bacteria that break down organic wastes, resulting in the release of improperly treated sewage. A quart of oil can foul the taste of a quarter-million gallons of drinking water.

It's the thousand cuts kind of thing, rather than bleeding from the jugular," said Dr. Roberta E. Weisbrod, special assistant to the commissioner of the New York State Department of Environmental Conservation.

Statistics from the American Petroleum Institute, the industry's main trade association, tell their own story of the hazard of pollution: Each year 1.2 billion gallons of lubricating oil are used in vehicles; 600 million gallons are burned up in engines, and 600 million are removed at oil-change time. Drivers who change their own oil account for 350 million of the removed gallons, and they improperly discard 240 million gallons of used oil.

Pollution from motor oil is an example of the democratization of pollution, with the damage coming from individual consumers, not big industry. It joins harmful products like the chlorofluorocarbons from air-conditioners that deplete the earth's protective ozone layer, the lawn-care products that kill wildlife or pollute streams and the carbon dioxide from home heating systems and cars that add to the greenhouse effect.

But experts say the failure to recycle oil is more than a hazard to the environment; each quart dumped also represents a lost opportunity to reduce dependence on imported oil. The petroleum institute estimates the oil dumped could, if burned, meet the annual electricity needs of 360,000 houses. The institute says it takes 42 gallons of crude oil—but only a single gallon of used oil—to make 2.5 quarts of virgin lubricating oil.

The principle is enshrined in federal law. "Used oil is a valuable source of increasingly scarce energy and materials," says the Resource Conservation and Recovery Act, the main federal statute to control pollution of water in the ground.

Drivers who change their own motor oil should collect it in a plastic contained with a top that fastens securely. Disposing of it safely will require some effort.

They should check with the local service stations. Stations are required to recycle their oil, and in some state they must accept small quantities from people who change their own oil; in New York, for example, they must take up to five gallons, free. But in most places there is no such requirement. In Indianapolis, Sue Kleinke, public information office with the Department of Public Works, says—for the moment, at least—residents who want to dispose of crude oil should contact recycling companies or businesses that specialize in oil changes.

Otherwise, the oil can be stored in a secure container and taken to a collection site on the next Tox-Away Day, which probably will be this fall. She says she knows of no requirement in Indiana for service stations to accept used oil.

By law, corner gas stations and 10-minute oil change shops must send used oil for re-refining into new lubricating oil, or for burning as fuel.

But consumers, about two-thirds of whom change their own oil, generally do not read laws and may not even know they are doing something illegal. The institute estimates that 61 percent of do-it-yourself mechanics dump their used oil or put it in the garbage to be taken to a landfill, where it will leak into the soil. The Environmental Protection Agency things the figure could be 90 percent.

Whichever number is correct, it appears to be rising, even though some places offer curbside pickup.

In Oregon, cities with populations of 4,000 or more and with garbage pickup, must recycle oil.

Just how much gets dumped improperly each year is uncertain. Although the petroleum institute puts it at 240 million gallons in a study a year ago, other estimates run higher. Almost all experts say that of the amount drained by do-it-yourselfers, more than half is disposed of improperly. To Peter H. Spendelow, a recycling specialist at the Department of Environmental Quality, in Oregon, one clue is that empty cans or bottles of new oil that motorist leave at the curb. If they did not take away those containers, he said, they probably did not take away the old oil either.

In some places, however, consumers who want to recycle their oil may find it hard to do. Many service stations will not accept the oil unless state law requires them to. The stations fear that consumers will give them anti-freeze or degreasing agents that they have poured into the same container as the oil.

More station owners accepted oil when it was worth something, environmental officials say. They could sell the used oil for 30 cents a gallon when crude oil sold for $30.00 a barrel. When oil fell below $10 per barrel in 1986, some service stations had to pay to have their oil hauled away. Now it brings a few cents a gallon, hardly an incentive to gather it.

Much of the oil that consumers buy comes from discount stores and auto supply stores, but few of those places take used oil back.

At the University of Alabama in Birmingham, Janet Graham, director of a program that coordinates recycling in 12 communities, said that in rural areas, people use oil to keep down road dust or spread it on animals to kill insects. Neither is a good idea. "There are several uses," she said, "none of them sound."

1990-91
NTA Board of Directors

Calendar of Events

June 23	**NTA Board of Directors Meeting** Contact: NTA Office (206) 754-0825
June 24-25	**NTA 3rd Annual Turfgrass Summerfest** Contact: NTA (206) 754-0825
July 31-August 2	**ASPA 1991 Summer Convention** Contact: ASPA (708) 705-9898
September 16-19	**NTA 4tth Annual Northwest Turfgrass Conference and Exhibition** Contact: NTA (206) 754-0825
September 18	**NTA Annual Membership Meeting** Contact: NTA (206) 754-0825

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