

Editorial

ARTIFICIAL VS. NATURAL TURF

Isn't it interesting that yet another CFL team has opted to renew their artificial surface rather than listen to athletes and sports field managers. We are told that athletes as a whole would prefer to play on natural grass. They practice on natural grass! There are some excellent turfgrass managers out there who would be very pleased to have the opportunity to maintain a professional football/baseball field in Canada. Only recently, Darren Flutie of the Hamilton Tiger Cats, on arrival at Commonwealth Stadium in Edmonton, said how nice it is to be able to play on real turf. Meanwhile, just down the road, the Calgary Stampeders redid McMahon Stadium with artificial turf at a cost of \$1.7 million.

In the U.S.A., more and more artificial fields are being removed and replaced with natural turf. For approximately one-third the cost of McMahon Stadium, owners could build a state-of-the-art natural grass field. Are owners afraid the field will not be playable at game time? While it may be true that more games can be scheduled on artificial fields, false economy will prevail as overuse will only shorten the field life and result in early replacement of the material!

Synthetic surfaces have drawn increasing criticism from players and coaches. A recent survey of NFL players listed the 10 best and the five worst playing surfaces in the NFL. All of the ten best were natural turf—all of the five worst were synthetic, says Jim Pulhalla, president of Sportscape International, Inc.

How do we get the message of better, safer sports turf across to owners? Whether it is for a university, college, school, or professional facility, when will we start using more of the expertise of the many professionals who are available across this country? I'm talking about those who have graduated from turf-related courses and/or those who have many years of turf-related experience. As individuals or as groups, we can make things happen. Look at what the Rotary, Optimists, Lions, and Kinsmen have done in small communities to promote, build, and maintain ballfields where otherwise there might not be any. This is only one of the

many good works that these volunteer clubs do to improve our communities. Gamaliel Bailey said "Amid life's quests there seems but one worthy one, to do men good." That could well be our focus as we go about our sports turf business. To conclude, I leave you with another quote from Jim Puhalla and Associates from their new book *Sports Fields - a Manual for Design, Construction, and Maintenance*. "Predicting the future is a chancy thing—one that makes me as nervous as anyone. But tomorrow's developments grow out of today's trends. A wise manager makes plans for the future based on a hard look at what's happening each day." ♦

— Michael Bladon

Gavel Presentation



Jane Arnett-Rivers, STA Vice President, presents the President's gavel to Chris Mark at the May 18 board meeting.

"I believe a leaf of grass is no less than the journey-work of
★ ★ the stars." ★
Walt Whitman (1819-1892)



"Whoever could make ... two blades of grass where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together."
Johnathan Swift (1667-1745)

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At other times, a message may be left on the voice mail system. Please include the vital information of name, telephone number with area code, and time of calling. The office may be reached at any time by faxing (519) 766-1704 or via e-mail.

Letters via E-Mail

Field Day Comments

I arrived home on Wednesday only to find your evaluation form in my back pocket. Sorry for being so tardy. After having a very entertaining and informative day, the least I can do is pass on my comments.



I thought the day was put together very well, right from the morning reception to Mike Bladon's closing comments and jokes on the returning bus ride. The speakers were very interesting and informative. I would have appreciated it if Dr. Chris Hall had stayed around as we didn't get a chance to ask him any questions.

Chris Mark and Paul Turner did an excellent job of hosting. They came across as being professional and not too formal. The lunch was a pleasant surprise—simple but good. I will certainly try to attend

in future years and I have a few suggestions for future topics:

I would like to see something on how to incorporate soil and tissue sampling into my turf program. How do I take such samples? Who do I send them to and how do I interpret the results and effectively implement them into my maintenance program?

Since I'm guessing that most of the field day participants are from municipalities and colleges, I think it would be beneficial to have a talk on liability. Are there some recent court cases regarding the use of sports fields? What can we do to ensure due diligence? How bad can it get before we close our fields?

How about something on how to manage in a unionized environment. How do you motivate employees in the new millennium?

Thanks again for a great day!

— John Wilson, Grounds and Vehicles
Supervisor, York University

Thanks, John, for taking the time to write!

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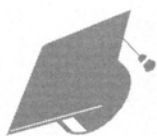
If you are looking for a specific market for your products, advertise in *Sports Turf Manager*. Published four times a year, this newsletter has a national and international distribution with the majority of its membership residing in Ontario. 1999 advertising rates (per issue) are as follows:

- business card size \$40.00
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For more information, contact Lee Huether at the STA office. Tel. (519) 763-9431, E-mail sta@gti.uoguelph.ca.

December issue content deadline:

OCTOBER 15, 1999



Congratulations

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PLEASE NOTE

The opinions expressed in articles published in *Sports Turf Manager* are those of the author and not necessarily those of the Sports Turf Association, unless otherwise indicated.

Meet New Board Member Rick Lane

Rick has been employed by the Town of Dundas as Director of Parks and Recreation since 1992. Prior to his employment with Dundas, he served as Director of Parks and Recreation for the municipality of Mount Forest and was previously employed in the same capacity for the municipalities of Swan River and Rossburn in the province of Manitoba. In total, Rick has 19 years experience in the parks field.

Rick has many outdoor leisure interests, such as fishing and hunting, but would consider golf his favourite recreation activity. He is honoured to be selected as a Director and is looking forward to the challenge of serving on the Board of Directors of the Sports Turf Association. ♦

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CHRISTOPHER MARK The President's Desk



Fall greetings to all members. I hope everyone enjoyed a safe and happy summer both at work and on vacation. I am sure with the extreme drought conditions faced by many of our members, it was a busy June, July, and August.

The STA Field Day held at the GTI on August 17 was a huge success. My thanks to all members and potential members who came out and shared the terrific day. An extra big thanks and appreciation to our suppliers and corporate members who greatly assisted by sponsoring so many of the day's associated costs. Everyone who attended was rewarded with an exceptional list of speakers, a great lunch, and loot bags filled with give-aways. I appreciate the efforts undertaken by Jane Arnett-Rivers, Paul Turner, Michael Bladon, and Lee Huether in planning and co-ordinating the entire day.

We have thorough coverage of the Field Day in this issue, so I'll add only a few comments. It was wonderful to hear keynote speaker Dan Ferrone, President of the Canadian Football

Players' Association, speak so eloquently and forcefully on the importance of promoting natural grass surfaces as opposed to artificial turf to reduce injuries and extend careers of athletes. Ken Mrock, Head Groundskeeper of the Chicago Bears, gave an excellent presentation on the new practice field and facilities he has developed for the NFL club just outside of Chicago. It was great to hear that in the near future Soldier Field will be replaced with a natural turf surface complete with an underground heating system. While we all would drool over Ken's annual maintenance budget, he highlighted many low cost and innovative techniques to improve sports turf. Special thanks to one of our Directors, Harold van Gool, and Plant Products Ltd., who were instrumental in assisting with bringing Ken up from Chicago for the Field Day.

As summer rolls into fall, thoughts turn to finalizing plans for the Ontario Turfgrass Symposium that will be held on January 4-6, 2000. All indications are that it will be another memorable event with yet another great effort by Pam Charbonneau to bring it altogether. Please remember that it is critical that you iden-

tify yourself as an STA member when registering for the OTS. Our Association derives a major portion of our annual revenue from the OTS, hence it is important to tick the box that identifies you as an STA member.

Over the last few months, the OGSA has been requesting a revenue sharing formula change that could adversely affect the STA and other partners of the OTS. I assure you that our voice at the Executive Committee (Dr. Bob Sheard) has clearly articulated our Association's concerns with any changes that will negatively impact the STA. In fact, the STA, through Bob Sheard, has proposed alternative solutions that we feel are fair and equitable for *all* OTS partners. However, we are only one vote around a table of many. Please do your part to assist us and identify yourself as an STA member when you register for the conference. Watch for the brochure coming in the next while and take advantage of the early bird special.

Have a great fall! Best of luck with fall renovation programs. Wishing you better, safer sports turf. ♦

— Christopher Mark



Are You Interested? Soccer Event Raises Thousands

The Owen Sound Minor Soccer Association's Fields of Dreams Walk-a-thon raised more than \$15,000 Saturday at Victoria Park. The money will go toward expanding Owen Sound's newest soccer complex, opened in 1995, from two fields to 11. The five year total is now more than \$60,000. Other activities at the event included a barbecue, a hardest shot contest, and a representative soccer game. ♦

— The Sun Times, Owen Sound, ON, June 28, 1999

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SPORTS TURF SPECIALISTS

Western Turf Industry Profile

ROY FORFAR, SPORTS TURF ASSOCIATION DIRECTOR

Identifying a need to heighten public awareness and develop a profile of its membership, the Western Canada Turfgrass Association (WCTA) responded by conducting a detailed industry survey and publishing a summary of its findings. The *British Columbia Turfgrass Industry Profile* is a detailed summary of their research study, intended to strengthen WCTA's public profile, provide a vehicle for sharing best practices, and assist turfgrass managers with strategic planning and decision-making initiatives.

Four focus groups and a cross-section of WCTA members were surveyed capturing responses from a variety of sectors including school districts, parks and recreation, sod producers, and industry-related suppliers.

One key finding that became apparent was the diversity of the industry, from farming to services to private and public sector recreation, all with one common denominator—the production and maintenance of turfgrass.

There also appeared to be a general consensus that there is little public aware-

ness of the industry itself and its challenges.

Although the published results focus on the British Columbia industry, there are ample opportunities to draw comparisons to the turfgrass profile here in Ontario. Specific topics such as management, stewardship, future trends, and community relations are typical to both provinces. The survey findings are a worthwhile read, if only for an understanding of the many components related to successful turfgrass management.

A brief summary and overview of the main survey categories includes:

Management: Over 90% of the respondents agreed that those connected with the industry are better qualified in turf management.

Stewardship: Findings indicate that there is considerable diversity with regards to operational practices and policies.

Membership: Members of the WCTA appear to be well perceived in the industry.

Benefits: There are many positive spin-offs provided by WCTA members includ-

ing a growing number of recreation/fitness facilities, the amount of green space being maintained and preserved for public and urban areas, and a number of natural areas being preserved for wildlife habitat.

The *British Columbia Turfgrass Industry Profile* is an easy read, full of beneficial and informative results, perceptions, issues, and challenges that currently affect our industry. Broken down into well-defined subheadings, the book allows readers to quickly identify their area of choice or to engage in findings from the "bigger picture," including member comments and focus group feedback. The book is a stable framework from which one can establish future directions and identify key components to improving and promoting a positive turfgrass management profile within the industry and beyond. ♦

Editor's note: The British Columbia Turfgrass Industry Profile is available from the Western Canada Turfgrass Association, telephone (604) 467-2564, E-mail wcta@dowco.com, for the purchase price of \$12 which includes taxes and shipping.



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J. Robert Dippel

SEEDS

Water, Roots, and Turfgrass

DR. BOB SHEARD, PHD, P. AG., CONSULTING AGRONOMIST, GUELPH TURFGRASS INSTITUTE

Research at the Guelph Turfgrass Institute with regard to water use by turfgrass suggests some new ideas about effective turfgrass rooting.

In the classic study "The Underground Organs of Herbage Grasses" by Arthur Troughton of the Welsh Plant Breeding Station, it is reported that the roots of bluegrass or bentgrass mowed at five cm seldom are found below 45 to 60 cm. Any reduction in the mowing height or increase in the frequency of irrigation tends to reduce the depth of rooting. Furthermore, he reports many studies have shown that the root system of grasses is concentrated in the 0 to 10 cm depth. Therefore it would be expected that after a heavy rain or irrigation, the soil would dry out more rapidly at the surface where the concentration of roots are than at lower depths.

This was not found to be the case in studies conducted on the U.S.G.A. designed research green at the GTI. Special moisture measuring devices were inserted at several depths in the sand root zone of the green to allow the moisture content to be measured at hourly and daily periods for 10 days following an irrigation which saturated the sand to the degree the tile lines were flowing. Laboratory measurements had indicated that the sand would stop draining when the retention tension on the water reached 20 mbars and moisture stress would be observed at a tension of 40 mbars.

An example of results obtained in 1996 and 1997 is illustrated in the adjacent figure. The first point to observe is that the free drainage of water had approached the 20 mbar point within 1.5 hours of turning off the irrigation system. Thus air return into the pore space is rapid in this sand system. Wilting was observed at Day 7 when the moisture content fell below the 40 mbar point.

The more significant point is that the water was withdrawn uniformly over the full 30 cm depth of the root zone from the first day onward. The uniformity of withdrawal continued for a 10 day period during which there was no rain or further irrigation. No significant drying of the surface 10 cm before the lower depths oc-

curred as would be expected due to the greater concentration of roots in that zone.

Examination of the root zone indicated that there were roots over the full 30 cm of the root zone. It could be argued that the fewer roots were very efficient in water withdrawal, but this is highly unlikely. The more plausible explanation is that the capillary flow of water in the sand is rapid enough to transmit water to the zone where the majority of roots are located to satisfy the daily water requirements of the grass.

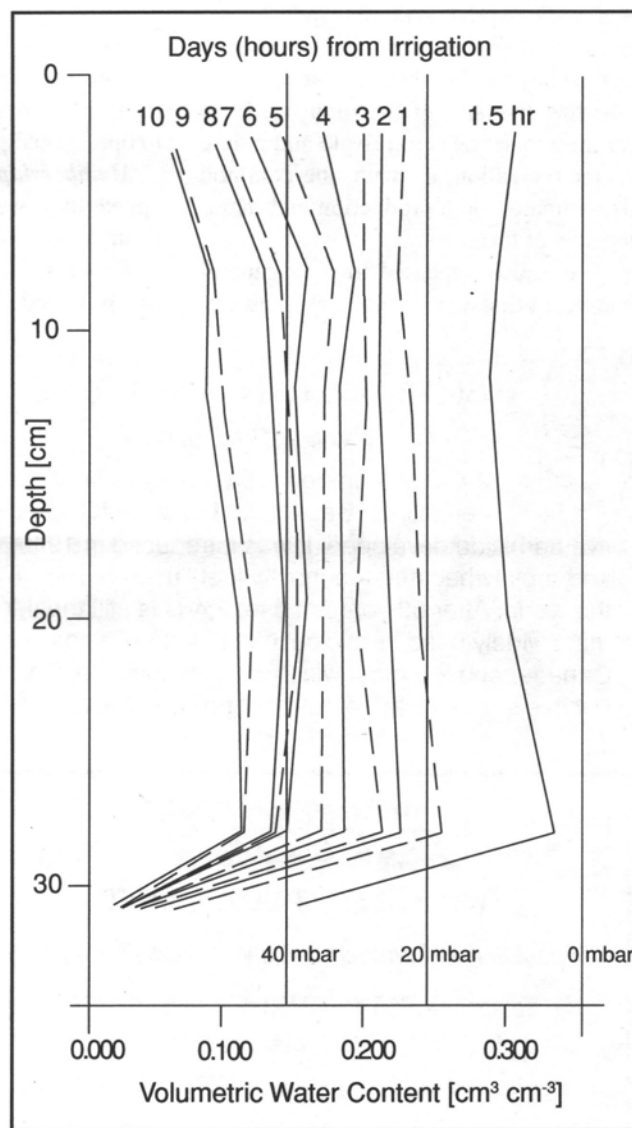
It is known that the nutrients required by the grass—nitrogen, phosphorus, potassium, etc.—must be dissolved in water prior to uptake by the grass. It therefore follows that the nutrients will also be moving upward with capillary flow of water from the lower depths where there are few roots to satisfy the requirements of the grass. Nitrate nitrogen, which can become an environmental hazard if it leaches to the ground water, must, therefore, also be extracted from the root zone in a uniform fashion.

Irrigation at frequent periods may be an erroneous practice. Allowing the profile to dry down to the level of incipient moisture stress may enhance the withdrawal, not only of water stored in the soil, but also of nitrates which may have been leached by frequent irrigation.

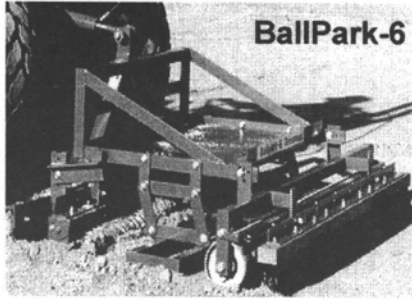
More recent studies on construction site soils (that is sites where the bulldozer has destroyed the normal soil profile) have indicated that water is being withdrawn from depths greater than expected on the basis of where the concentration

of roots are located. Irrigation scheduling based on a water budget procedure indicated moisture stress was not observed when 100% of the available water stored in the upper 15 cm had been consumed. It was only when the water storage in 30 cm of soil was considered that moisture stress was observable when the available water was used.

These studies indicate water movement by capillary flow to roots is an important part of water use by grass. While the root system may be relatively shallow, the zone of water withdrawal is much greater. Irrigation scheduling procedures which recognize this fact are needed to make water and nutrient use more efficient. ♦



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12th Annual Field Day

MICHAEL BLADON

Cultural Practices for Weed Control

Dr. Chris Hall, a professor at the University of Guelph's Department of Environmental Biology and past Director of the Turfgrass Institute, was the next speaker on the program. Dr. Hall spoke on "Cultural Practices for Weed Control," and talked at length about changes in government thinking and philosophies as they relate to pesticides. Dr. Hall said that while there is not the same pressures for non-chemical weed control there were a few years ago, those same pressures will surface again. He suggested that we have to be pro-active in our dealings with pesticide issues.

First, Dr. Hall pointed out that maintenance is not a trivial task and it differs according to the sport or location. Soccer players want good footing, good ball bounce, and ball roll. Golf, on the other hand, is different. While golfers still require a good ball roll and playability, the course is very much a park-like setting. On highways—a completely different situation—grass performs functions such as cutting down on glare, and along with trees and shrubs, provides some noise reduction. It also helps prevent soil and wind erosion as well as slows runoff, has heat absorption qualities, and provides an area off the main thoroughfare for vehicles. No matter its use, grass recharges the ground water system and contributes to O₂ fixation and O₂ generation.

The key to good weed control is a dense healthy turf which is able to compete for light and temperature and suppress weed germination so they are slow to develop.



Dr. Hall indicated that the key to good weed control is a dense healthy turf which is able to compete for light and temperature and suppress weed germination so they are slow to develop. Negative effects of weeds include poor turf—too much



competition—and increased labour and equipment costs. Furthermore, poor quality turf affords a place for insect and disease organisms to flourish and a haven for weeds which affect allergy sufferers.

Switching to non-chemical weed control, Dr. Hall talked about factors such as competition, the type of weed, turfgrass susceptibility, and cultural methods. For example: Is the area wet? and Does it suffer from salt damage? Some preventatives are proper seed bed preparation and elimination of seed production—many weeds are annuals and one mowing will remove the problem of seed production. Another venue is to exhaust the propagation organs. In the case of quack grass, stolons must be removed in their entirety by raking out or constant cultivation practices of bringing rhizomes to the surface to die. As for proper seeding with the correct species, consult with a turf specialist in your area. (The seeding rate and clean seed are discussed in the June 1999 issue of *Sports Turf Manager*, "The Seed Label," page 12.) The time of seeding is also important, particularly if you do not have irrigation—mid-August to mid-September is best. Dr. Hall then mentioned the advantages and disadvantages of species of Kentucky blue and perennial rye (see the table on the opposite page).

Dr. Hall ended with some final pointers on weed control:

- 1) Sod management—fertilizing, mowing, and watering. It is important that you survey for weeds and avoid scalping.
- 2) Mechanical weed control can be ac-

complished by mowing, tillage, and physical removal.

3) Non-chemical weed control begins with careful selection of species and cultivars. For example, Kentucky Bluegrass is less susceptible to weed invasion. Remember that cultivars of the same species will respond the same. Lastly, improving nitrogen reduces weed invasion in all species.

ORFA Training Opportunities and Partnerships

Next on the program was Jay Kivell. Jay is presently Manager of Parks and Facilities for the City of Guelph. His subject was Ontario Recreational Facilities Association (ORFA) training opportunities and partnerships. Jay heads up the annual professional development program for them. Member services consist of district meetings and the *Facility Forum*, a bi-monthly magazine (soon to be changing to quarterly). They have a facilities library located in Toronto where you may go to do research for newsletter articles, reports, etc. There is also a job search service in place. Regional training in aquatics programs is available for those who maintain pools. Safety training in propane management is also offered. Even if you operate a propane barbecue at work, a certificate is required. An ice making manual is available, plus log books and other texts. If you have a minimum of 30 people, ORFA will hold a propane course at your place of work at a cost of \$60 per person.

ORFA has formed 34 partnerships with organizations such as Algonquin College, Seneca College, the NHL, and several provincial government departments. Each year, training is run at the University of Guelph, in partnership with the Office of Open Learning, in Parks Operations, Parks



Management, and Sports Turf Management and Operations. A new course offering is for Certified Park Technicians. Algonquin College is currently providing a Trainers and Adults Certificate for anyone who is interested in teaching the above courses. Jay invited the Sports Turf Association to be both a partner of the OFRA and to supply some instructors.

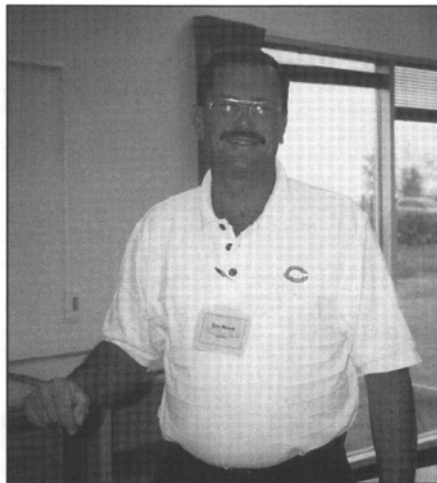
The Bear Facts

Ken Mrock, head groundskeeper for the Chicago Bears, gave both a humorous and informative talk on the difficulties of maintaining fields for football players. He has to contend with all kinds of weather while keeping in mind that many players weigh 300+ pounds and are worth US \$60,000,000 together as a team. Players today are bigger, faster, and stronger. Training camp begins with 90 players and is finally cut to 52. Ken looks forward to this because it means 38 less pairs of cleats chewing up his turf! His first slide showed the NFL logo which he said stands for "not for long" if you don't get the job done! In this business, a top job is expected, but appreciation is hard to come by.

Players today are bigger, faster, and stronger. Training camp begins with 90 players and is finally cut to 52.



Ken then talked about a farm the Bear ownership bought to make a practice facility and to house their headquarters and training facilities. Five acres were zoned for a practice facility. The first step was to remove the topsoil. Then 4" drainage tile was laid 15' apart and filled with



pea gravel to keep out the clay. Next, a well 450-500' deep was drilled into the lake aquifer to make sure they always had water. They used a greens mix of 80% sand, 10% PROFILE, and 10% peat moss (this was mixed off site). He had used this same mix when involved with golf course work and it withstood a terrific amount of wear—they would play 60,000 rounds a year! He also found this type of mix had less disease, greater water holding capacity, and fostered a dense turf. Then, they blended 14,000 yards of the mix and spread it on 6" of pea gravel. Ken felt afterwards that they could have used less growing medium. They also installed a polypropylene pipe to check on O₂ emissions. Results of the tests indicated zero. Following this, on two of the five acres, they installed tubing to heat the soil. Initially, he had set up a small test area suggested by the manufacturer from which he learned a great deal. Ken used this information to avoid what could have been costly mistakes.

They used 14 miles of rubber tubing which was laid on 1' reinforcing rods tied every 15" for stabilization. There were six

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Disadvantages

Perennial Rye

- Variable winter hardiness
- Needs good drainage
- Requires higher seeding rates
- No stolons or rhizomes
- Difficult to mow.
- Susceptible to snow mould and dollar spot

Kentucky Blue

- Poor drought tolerance
- Thatch



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ing, and when tested, there was only one break, which they replaced. Tubing was filled with propylene/glycol and water to prevent freezing when the system was shut down. (After use in January, the temperature is lowered gradually.) Next, the medium was bridged out over the tubing to prevent damage and laser leveled. Ken then fine graded using a sand rake. He used a piece of Smithco equipment to dimple in the seed. Ken chose all Kentucky Bluegrass blends sown at 6 lbs per 1,000 square feet. The tubing was 8" down in the growing medium, so no problems arose with maintenance such as aeration.

Ken employs several ideas to reduce or change wear. He uses movable goal posts for kickers and puts in grid lines off the field for the linemen. Team practices are three hours, so he marks the fields enabling play to run in two different directions. Further, he talks to the coach to reduce potential communication problems. At Soldier Field, he pre-germinates seed in drums three days before a game, drains the drums on asphalt to let dry, and then spreads on the field prior to the game. Players' cleats then work the seed into the soil for good contact. After the game, he irrigates.

They also have an indoor practice field, erected at a cost of \$7 million, that has only been used four times. Cost of the entire facility to date is \$33 million. Finally, Ken mentioned that Soldier Field will be gutted and a new facility built. Everything will go except for the historical columns. The field itself will also be redone, with completion scheduled for September 2000. The new field will use big rolls of sod already ordered from the sod farm and will be grown on the growing medium mentioned earlier. Play, they hope, will be at either Notre Dame or Northwestern until completion.

Ken then fielded questions from the floor and also on the bus trip to the sod farm, so many more tips and ideas surfaced for the participants. It certainly was worthwhile to bring Ken to Canada again to share his considerable knowledge!

Trip to Compact Sod Farm

Prior to lunch, all suppliers were given a chance to introduce themselves and say something about the products they distribute. Following lunch, all delegates boarded



Top: George Bannerman (centre) explaining a new slicer/aerator his company has available.

Above: Ed Robertson of Toro (left) and Gord Dol, Dol Turf Restoration Services (right), displaying turf products:

Left: Keynote speaker Dan Ferrone, former captain of the Toronto Argonauts and current President of the CFL Players' Association.

Opposite page: Ron Schiedel, President of the Green Horizon's Group, welcomes participants to the Compact Sod Farm.

