Sports Turf Manager for safe, natural sports turf

Autumn 2007

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Field Day Coverage

See pages 11-13 for a photo gallery showcasing participants at STA's 20th Annual Field Day held September 13 at the Westoby Ice Surface/ Olympic Sports Park in Dundas. Pictured below is keynote speaker Pam Sherratt and Field Day Committee Member Dave Chapman.





You Can't Grow Grass on Concrete

PAMELA J. SHERRATT, OHIO STATE UNIVERSITY, 2007 STA FIELD DAY KEYNOTE SPEAKER

Years ago, a turf company ran a newspaper article where they showed a picture of grass growing on concrete to prove that growing turf was easy if you followed their plan. Growing grass on concrete is possible. Growing grass on concrete and playing football on it is not. This article looks at some of the issues we face in sports turf and how to improve the concrete soil conditions that develop.

here are several criteria that turfgrasses must have in order to be suitable for athletic sports: 1) adapted to the region's weather (i.e. "cool-season" zone); 2) tolerant of low mowing height; 3) wear resistant and good recovery; 4) tolerant of stresses and be able to compete with weeds; 5) fine textured and uniform leaf, to provide the athlete and ball with a smooth, firm and consistent playing surface; and 6) have good "quality" – color and density.

This list of criteria eliminates most grasses and leaves just a few that can be used in the northern United States and Canada. The most commonly used are perennial ryegrass (*Lol-*

ium perenne), Kentucky bluegrass (*Poa pratensis*) and tall fescue (*Festuca arundinacea*). Table 1 (see page 15) highlights the pros and cons of each of these grasses.

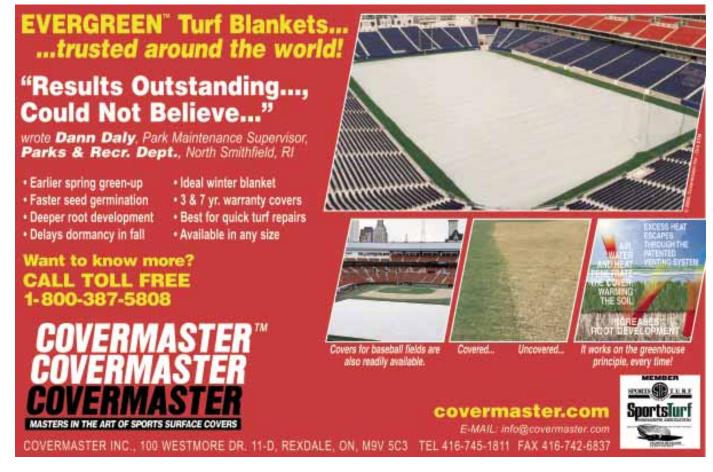
Very rarely are these three grasses seeded alone. They are usually mixed or blended together. A "mix" refers to a seed mix that contains more than one species of grass. For example, a Kentucky bluegrass:perennial ryegrass mix. A "blend" refers to a seed blend that contains more than one cultivar or variety of the same species. For example, a 3-way blend of perennial ryegrass. The purpose of mixing and blending is to increase diversity and maximize resistance to disease and insect attack.

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SPORTS TURF MANAGER

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STA OFFICE HOURS

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The President's Desk - Gord Dol

Wow! What a summer. We went from an extremely wet fall in 2006 to this year being one of the driest seasons on record.

e recently held our 20th Annual Field Day. Attendance was again at an all time high with a great program of speakers and a first class venue. Thanks to the Field Day Committee for a job well done and to the City of Hamilton for hosting this event. A special thanks to all the sponsors and exhibitors for their time and generosity in making this day possible. We will very shortly be planning for our 2008 event and as always, your ideas are most welcome.

Please note in this issue the press release for the new Parks and Open Spaces Authority. This collaboration by the Sports Turf Association, the Ontario Parks Association and the Ontario Recreation Facilities Association brings together three very professional organizations to better serve the needs of all members in the areas of certification and professional recognition and development.

This being our 20th anniversary year, we are continuing with profiles of past presidents. This issue will feature Paul Turner and Andrew Gaydon.



Our membership roster is now online. Lee sent out instructions a while ago on how our members can access all this information. If you have any questions, please call her at our office.

Nominations for the R.W. Sheard Scholarship are now being accepted. The deadline for applications is November 1st.

Winter is fast approaching. The grass will not be green for much longer! Enjoy the fall colours and temperatures. ◆

Above: STA past and present directors gathered at the recent Field Day. Back row, left to right: Don Bridgman, Andrew Gaydon, Dave Chapman, Gord Dol, Bob Kennedy and Dave Smith. Front row, left to right: Jane Arnett-Rivers, Paul Turner, Everett Nieuwkoop, Jim Galbraith, Bob Sheard and Mike Bladon.

EVENT CALENDAR

November 1

Sports Turf Association Robert W. Sheard Scholarship Application Deadline Info: (519) 763-9431 www.sportsturfassociation.com

February 19 & 20

Ontario Turfgrass Symposium Guelph, ON Info: (519) 767-5000 www.open.uoguelph.ca/OTS/



December 5 & 6

Ontario Recreation Facilities Association Facilities Operational Forum & Annual General Meetina Newmarket, ON Info: (416) 426-7062 www.orfa.com

January 8-10

Landscape Ontario Congress Toronto, ON Info: 1-800-265-5656 www.locongress.com

January 16-18

Ontario Golf Superintendents' Association Ontario Golf Course Management Conference & Trade Show Toronto, ON Info: 1-877-824-6472 www.golfsupers.on.ca

January 28 - February 22

University of Guelph Turf Managers' Short Course GUELPH, ON Info: (519) 767-5000 www.open.uoguelph.ca/turfmanager

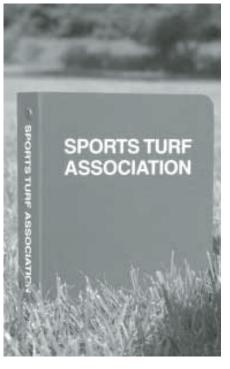
February 6 & 7

Ontario Parks Association 52nd Annual Educational Conference & Explorations Trade Show (Feb. 6) Hamilton, ON Info: 1-866-560-7783 www.opassoc.on.ca

We've Gone 21st Century in Our 20th Year! Membership Roster Online.

AS PART OF OUR 20th anniversary tuneup, the STA website is being revised and updated. You won't notice much of a change in our look however; the real improvement is in the approach, not the appearance. We've moved to a Content Management System which provides for easier design and maintenance, more frequent updates, and greater functionality.

In our first phase we introduced a 'Members Only' section. Until this year, the STA Membership Roster was brought up-to-to date by means of annual printed inserts. This has been replaced by a webbased version. The little green binder is now obsolete. The new adaptation offers personal updating, instant retrieval and information that is always current. If electronic isn't your preference, the roster is still available in the form of a print document, upon request. Follow the instructions emailed to you and register online today!



Above: The little green binder was first introduced to STA members in 1995.

WELCOME TO THE STA!

Alex McLeod

DryJect Ontario, St. Catharines, ON

Brian Macklin

Parc Downsview Park, Toronto, ON





STA Membership Plaques

Display membership plaques are available in executive engraved walnut for \$50 plus S&H. To order, contact Lee at the STA office.

Winter 2007 Submissions

If you have something you'd like to submit for the next issue, please forward it to the STA office by November 9, 2007.

Editorial Content

Opinions expressed in articles published in Sports Turf Manager are those of the author and not necessarily those of the STA, unless otherwise indicated.



ONTARIO TURF NEWS

GTI Open House

A public open house (see above photo) was held on August 16 at the Guelph Turfgrass Institute & Environmental Research Centre to celebrate the 20-year partnership between the Ontario turfgrass industry, Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph. The open house featured lawn care demonstrations, flower-arranging workshops, turfgrass and environmental research presentations, and tours of the Guelph Trial Garden, which showcases flowers and plants that grow best in southwestern Ontario. The event concluded with turfgrass researcher Dr. Eric Lyon's famous pulled pork on a bun followed by a performance by GTI Director Rob Witherspoon's bluegrass band, the Speed River Valley Mountain Boys.

Turf Managers' Short Course 2008

Turf managers and their staff having been attending the Turf Managers' Short Course (TMSC) as a source of training and credentials for over 30 years. This four week program makes use of an impressive combination of University faculty and industry professionals to facilitate discussion regarding the latest research and maintenance issues encountered by turf professionals. Turfgrass performance, resource planning and environmental stresses are some of the many areas covered.

Come to the University of Guelph and get the training you need to succeed. The TMSC runs from January 28 to February 22. Call 519.767.5000 or visit our website at www.open.uoguelph.ca/turfmanager for more information. This program fills up fast so please register early!

Get Ready for OTS 2008!

THE ONTARIO Turfgrass Symposium is returning to Rozanski Hall at the University of Guelph, Tuesday, February 19 and Wednesday,

February 20, 2008. Speakers from both industry and academia will provide valuable insight regarding many turf topics. This, the 17th annual Ontario Turfgrass Symposium, provides del-

egates the opportunity to participate in informative and engaging sessions reflecting the many important trends in turf management.

Golf course staff, sports turf/recreation and lawn care professionals and sod growers can all benefit from the variety of topics, including: new dandelion biocontrol, induced resistance to turfgrass diseases, grey-water recycling and managing sports field energy consumption.

OTS is a wonderful opportunity to network with colleagues in the turf industry – exchanging ideas and practices that promote premium turf health. Attend OTS and discover what is happening in turf in Ontario, across the country and internationally.

Please visit the conference website at www.open.uoguelph.ca/ots or call 519.767.5000 for more information as it becomes available. We'll have more details in our winter newsletter.



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The Ontario Turfgrass Research Foundation and the University of Guelph are conducting a study on:

The Economic Profile of the Ontario Turfgrass Industry

This study will raise awareness about the importance of the turfgrass industry to the economic livelihood of the province and the country.

Sometime in October, we will be sending a survey to you. Your participation will be crucial to this research. If you have any questions please contact:

Kate Tsiplova (519) 824-4120 x 58343, ktsiplov@uoguelph.ca or Katerina Jordan (519) 824-4120 x 56615, kjordan@uoguelph.ca

STA Scholarship Nov. 1 Deadline

THE STA ESTABLISHED a Scholarship Program in 1993 and has since awarded 26 scholarships. In the past, we provided scholarships in two specific programs of study: the University of Guelph's Turf Managers' Short Course and the Ontario Diploma in Horticulture. To continue to encourage, support and provide leadership to those considering a career in the sports turf industry, the STA restructured its Scholarship Program in 2006, expanding it to include additional programs of study. The Robert W. Sheard Scholarship in the amount of \$1,000 may be awarded annually.

The Scholarship Program is funded through STA membership fees. The award is intended to assist students with the cost of tuition, books and related expenses.

For those currently furthering their education, we encourage you to apply. More information and applications can be found online or obtained from the STA office.

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PARKS & OPEN SPACES AUTHORITY

PROVIDING NEEDED SERVICES TO PARKS AND SPORTS TURF PROFESSIONALS



he Ontario Parks Association, Ontario Recreation Facilities Association and Sports Turf Association announced recently that they have joined together to form the Parks and Open Spaces Authority. This group replaces a previous Parks and Public Spaces *Training and Development Authority.*

The Board of Directors of the Ontario Parks Association (OPA), Ontario Recreation Facilities Association (ORFA) and Sports Turf Association (STA) have given direction for the associations to jointly provide needed services to professionals in the parks and sports turf profession. It gives us great pride to announce the start of a joint venture between the STA, ORFA and the OPA. These three associations have developed a collaboration to better serve the needs of all memberships.

Areas of Focus

On July 12, 2007, selected representatives from all three associations met and developed strategies for meeting these needs. The committee will be known as the Parks and Open Spaces Authority (POSA) and have confirmed that the following areas of concentration will form the focus of immediate committee activities: issues/awareness and alert bulletins; resources and publications; certification and professional recognition; professional development; and other opportunities and partnerships

POSA presently consists of nine professionals, three members from each associa-

tion. Committee members will represent POSA and have been given the responsibility to develop strategies and to follow through on this project. POSA is bipartisan and its main objective is to serve all three memberships in professional development.

POSA's Mission

Coalition dedicated to strengthening practitioners through professional development, recognition and advocacy

Values

Professional Development: provides education and resources that meets industry needs.

Recognition: acknowledges professional competency.

Advocacy: supports and represents leadership within the profession.

We are excited about each POSA member's commitment and trust that all association members will support and assist them in this new adventure.

Members

- Jane Arnett-Rivers, Town of Oakville
- Bill Clausen, University of Guelph
- Tom Mathews, City of Toronto
- Stu Young, City of Mississauga
- Terry Piche, ORFA
- Mark Reinert, Town of Petawawa
- Marc Roy, City of Timmins
- Jeff Stewart, Town of Ajax
- Rob Field, Plant Science, Inc.

SUPPORTING ASSOCIATIONS

The Ontario Recreation Facilities Association Inc. (ORFA) is a not-for-profit provincial recreation organization with over 4,000 card bearing members. Membership within ORFA includes representatives from municipalities, educational institutions, government agencies, First Nations, community recreation boards, private recreation facilities and business and industry. The association provides a variety of services to its members including professional development activities, networking, regional information workshops, access to a recreation Facilities Library, formal recognition through professional designation and registration programs, trade shows and exhibits, a job search service, publications and resource information.

Ontario Parks Association (OPA) is committed to civic beautification, the advancement, protection and conservation of parks, open space and the environment as we practice Protecting Tomorrow Today® in the province of Ontario. OPA, a non-profit, charitable organization founded in 1936, offers services emphasizing quality and accessible education and professional development, networking, information, communication and advocacy for persons participating in the parks services.

The Sports Turf Association (STA) is a not-for-profit professional association celebrating its 20th anniversary in 2007. The association was conceived in 1987 when a broad segment of the turf industry endorsed its need. Of particular concern was the need to minimize and avoid injury to participants using athletic facilities where they relate to sports turf. Two decades later, the STA continues to promote safe, natural sports turf through education and professional development, encouraging and supporting research and the communication of research results and the interaction with allied organizations.



PAUL TURNER G.C. DUKE EQUIPMENT LTD.

1. You were president of the Sports Turf Association from 2002-2003. What was your role in the turfgrass industry at that time? Are you still involved in the industry? How?

I have been involved in the turf industry for over 20 years; the last 15 have been with G.C. Duke Equipment and I was with George Bannerman for three years prior to that. I have always been on the sales side of the industry and look forward to many more years of selling.

2. What is the biggest challenge in your job?

Selling is not the easiest game in town. We are constantly searching and travelling looking for new tools and products that will hopefully make the turfgrass professional's job easier and more productive

3. What is the most satisfying part, what made the job worthwhile for you?

I really enjoy the group of people who are involved in the industry. They are, in general, very easy to get along with and over the years I have developed some good friendships.

4. What is the biggest misconception about your job?

People think that the life of a salesman is easy. I think they might be surprised if they ever came over to this side; there are lots of headaches and stresses which come along with quotas and budgets, lots of long days and believe me trade shows are not what they think!!

5. What is your educational/employment background?

All my education is from the across the pond in the UK. After completing school, I attended a small college in the quaint Town of Evesham where I completed my apprenticeship in the horticultural engineering field.

7. What do you enjoy doing outside of the workplace? Hobbies, favourite past times?

I love to play golf but the number of rounds played seems to keep decreasing with each year. Sports are a favourite of mine and I keep close tabs on soccer and rugby in the UK. We are also kept busy in



6. Tell us about your family.

The Turner Clan are all back in the UK. We do try to meet up every year or two in a country that is convenient for all of us. I will be getting married in the later part of 2007 to a great lady (Amy Carter) and she has two children, Samantha (13) and Steven (11). We all currently live in Burlington, Ontario.

the hockey season with resident shuttle services to and from the arena for games and practices.

Above: Past Presidents Andrew Gaydon (left) and Paul Turner at the recent STA Field Day in Dundas. As part of our 20th anniversary coverage, we are profiling STA's past presidents.

8. How has the industry changed and in what direction(s) would you like to see the industry, as a whole, move towards?

The industry has gone through some serious changes over the last 20 years. The reduction of pesticides has probably most influenced my business. The increase in weed populations meant the death of the reel mower in parks systems, so the now common rotary mower has changed the way grass is cut. With less spraying, you now require more cultural practices so more seeders, aerators, top dressers, etc. are sold. As we move into the total ban phase, what will happen now? For all of us who remember the Ottawa debacle from many years ago and Waterloo not too long ago, what are our cities going to look like in the next 5-10 years? Are people going to accept or revolt against local politicians when their town or city is reduced to a giant weed and dandelion patch? Only time will tell!

9. What do you consider to be the biggest benefit of being a member of the STA?

Being a member opens you up to a great network of people from all across the province and other parts of Canada. As this networking grows, people not only share valid information but friendships are also made along the way.

10. What would your advice be for current and future presidents of the STA?

I think we need to stay focused on what our membership wants to see and hear. I believe we should continue to grow the profile of the association with some strategic alliances. I would also like to see us work closely with the University of Guelph to see if we can continue on with some of the great things that Dr. Bob Sheard has done and see if we can find another visionary like him who can help sustain the sports turf profession.

ANDREW GAYDON **VANDEN BUSSCHE IRRIGATION**

1. You were president of the Sports Turf Association from 2004-2005. What was your role in the turfgrass industry at that time? Are you still involved in the industry? How?

In 1993, Marc Vanden Bussche started the golf and turf divisions for his company, which his father had started 40 years earlier for the agricultural industry. Vanden Bussche Irrigation (VBI) is a well known name and I was proud to be invited to manage this exciting new opportunity. Having been a manager of a nursery supply company before that, I knew the potential for turf irrigation in the growing Ontario. VBI is a design, consult and supply company to all types of irrigation and watering systems. Turf grass, whether on golf courses or sports fields, is a very important part of the irrigation industry as in Canada today.

2. What is the biggest challenge in your iob?

The biggest challenge in our industry is finding qualified and experienced people to advise our customer base, who are usually experienced, qualified and demanding. Most of our customers are grass experts and rely on us to give good irrigation advice. VBI tries to employ the best people and guarantee them a full-

time professional career. We have a good reputation for "looking after" and therefore retaining our staff. Training is a very large part of an employer's responsibility and this helps to occupy and improve staff. Another challenge that we have in the turf irrigation industry is that there are so many good products available to assist the user and owner to improve efficiency, reduce water use, and improve the quality of turf, however, there is so much pressure on the installer to "go cheap" and "do it like we have always done it," that these innovative products are usually overlooked.

3. What is the most satisfying part, what made the job worthwhile for you?

Working with VBI allows me to be involved with and contribute to all aspects of the commercial, municipal and agricultural industries. The turf industry (as well as specializing in irrigation) is to me very satisfying because it's ever changing and improving. Sports turf has become a necessary part of our lives either to play sports on or just to enjoy sitting on the sidelines with a picnic. Membership in the STA has allowed me to rub shoulders with people who really know - and they say "knowledge is power."

4. What is your educational/employment background?

Before Vanden Bussche and Canada, I was educated in England with an Agricultural Engineer Degree and then went to Central Africa where I was farming sugar cane and citrus fruit for three years. While there, I did a great deal of travelling around this fascinating and marvelous continent. All irrigation was flood irrigation, which is







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Brampton, Ontario 905-793-7000 or 1-800-387-2449 Fax 905-793-9632 • plantprod.com extravagant and wasteful but in areas of the world that lack engineered products, this is the only option. On returning to England, I was involved with the marketing of combine harvesters, a big jump from sugar cane, however for 12 years I had the opportunity to travel all over Europe and experience and witness all types of farming. In 1985, I emigrated to Canada with my family to work for Massey Ferguson. I had quite a shock when within three months of my arrival, they announced that they were closing their operations in Canada.

5. Tell us about your family.

I have two children, a son (28) and a daughter (26) both married and living within two miles of me in the beautiful City of Burlington, so I am very lucky.

6. What do you enjoy doing outside of the workplace? Hobbies, favourite past times?

We are a family who all enjoy the game of rugby and my son, son-in-law and I all

play with enthusiasm, although I struggle to walk for 3-4 days after each game (the youngsters, on the other hand, can manage all levels of sports). We also enjoy casual cycling and southern Ontario has many excellent cycle paths to enjoy. When possible and when the Canadian season allows, I enjoy gardening.

7. How has the industry changed and in what direction(s) would you like to see the industry, as a whole, move towards? What do you consider to be the biggest benefit of being a member of the STA?

Membership in the STA has allowed me to keep abreast with the turf industry and pass this information onto my peers and customers. The turf and irrigation industry has dramatically changed over the last 10-20 years through education and innovation. We are much more aware and responsible about saving our precious water and therefore reduce the waste through better irrigation. Waste can happen through over watering or through poor

sprinkler choice and setting. We still have a long way to go as many property owners are motivated by green turf rather than healthy turf. The publishing of the *Athletic Field Construction Manual* will help to guide users to a better understanding of their fields and their corresponding maintenance. •

CONTRIBUTIONS WELCOME

Contact Lee Huether at the STA office if you are interested in contributing to the Sports Turf Manager. We appreciate feature-length articles, column ideas and newsworthy items. Updates on innovative research or equipment are also welcomed (as well as photographs). This is a great way to both support your professional association and enhance your resume! Note that annual advertisers are allowed to publish one news release per year.









20th ANNUAL STA FIELD DAY

September 13, Dundas, Ontario

The list of 'greats' arising from our 20th Annual Field Day at the Westoby Ice Surface/Olympic Sports Park is extensive: great host, great venue, great speakers, great sponsors and exhibitors, great food, great people and last but not least, great weather! All in all, the event was another huge success and we thank everyone who participated in this educational and networking opportunity. Thank you, as well, to all who completed the event evaluation form. We value your comments (criticisms or kudos!) to ensure our continued improvement. Your input is vital to the delivery of services which benefit you, the member. See you next year!



























































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COVER STORY: YOU CAN'T GROW GRASS ON CONCRETE

PAMELA J. SHERRATT, OHIO STATE UNIVERSITY, 2007 STA FIELD DAY KEYNOTE SPEAKER

Sports Turf Grasses: The Bottom Line

When establishing a new field from sod or seed, the grass of choice is Kentucky bluegrass because it produces a high quality playing surface that can regenerate from underground stems, or rhizomes. Two key problems with using Kentucky bluegrass on sports fields are the slow establishment speed from seed and the high level of care it needs once it has established. These two issues make it very difficult for turf managers to maintain a Kentucky bluegrass field, which leads to over-seeding with perennial ryegrass and ultimately, a perennial ryegrass field.

Renovating a field, particularly during the playing season, needs to be done quickly to ensure grass cover and player safety. With speed being the deciding factor, perennial ryegrass is the grass of choice for most athletic field situations. Perennial ryegrass produces a quality playing surface and it has excellent quality. Unfortunately, it is susceptible to a whole host of turfgrass diseases and it does not persist well in very hot, dry summers. One of the other "issues" with perennial ryegrass is the fact that it does not spread by stolons or rhizomes and therefore needs over-seeding regularly. Many textbooks will not advocate using perennial ryegrass for that exact reason. I think that issue is mute for two reasons: (1) from the last several years of my research on compacted native soils, Kentucky bluegrass has not recuperated any better than perennial ryegrass, and (2) on heavily trafficked turf, ALL grasses need over-seeding.

The most common athletic field seed mix in Canada is Kentucky bluegrass and perennial ryegrass. In theory, this mix should produce a mixture of these two grasses on the field. In practice, the perennial ryegrass dominates. Research has shown that if the perennial ryegrass exceeds 15% of the seed mix by weight, it will be the predominant grass. To sum this up, most sports fields in the northern US and Canada are dominated by perennial ryegrass, not necessarily through choice

Trait	Kent. Bluegrass	Peren. Ryegrass	Tall Fescue
Wear Tolerance	M-G*	G	G
Recuperative Potential	G	М	F
Quality	G	G	М
Establishment Speed	F	E	М
Drought Resistance	F-M	G	G
Drought Tolerance	G	F-M	F-M
Insect Avoidance	F-M	M-G	G
Disease Avoidance	М	F	F-M
Shade Tolerance	F	F	G
Fall & Spring Color	F-M	G	М

Table 1. Pros and cons of cool season turfgrasses for recreational areas. *KEY: Excellent (E), Good (G), Medium (M), Fair (F).

but because the grass is quick and wear tolerant.

Tall fescues are gaining popularity. Once established (usually after two seasons), they are very wear tolerant, drought tolerant and good in low-maintenance or shady situations. Their persistence during the winter months in Canada is something that may limit their use, as they are more prone to winter kill than Kentucky bluegrass or perennial ryegrass.

Field Longevity, Durability or Wear **Tolerance**

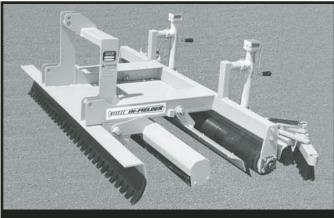
How long a field can last during a playing season depends upon many factors. The most important factors (in order) are: 1) soil infiltration rates; 2) turf management practices; and 3) selection of turfgrass cultivars

The majority of problems encountered on athletic fields are caused by poor soil conditions. Turfgrass plants will only grow in healthy soils that contain oxygen for drainage, gas exchange and root growth. The top 50-100 mm (2-4 inches) of soil can become so compacted that oxygen levels are reduced to near zero and water infiltration rates can be as low as

0.25 mm/hr (0.01 inches/hr). Using the 0.25 mm/hr infiltration rate as an example, if there was 25 mm (1 inch) rain during a game, the water would take 100 hours, or about a week, to drain into the soil, which is unacceptable and would probably lead to cancelled games.

Improving the water infiltration rate of a soil means improving the soils capability of draining. Native soil fields used for sports fields need to have a minimum water infiltration rate of 25 mm/hr. Improving the soil drainage is achieved by changing the soil texture (amounts of sand, silt and clay). Soils that contain less than 70% sand by weight do not drain very well. Options for improving the soil texture, and therefore the drainage rate include: 1) Amending the native soil with sand, either at the time of construction or by regular annual topdressing; 2) Installing a "by-pass" system, like sand slits (Figure 1, page 17), that by-pass the native soil and create channels from the field surface to underlying drains; and 3) Building a sand-based field (>85% sand).

The Sports Turf Research Institute (STRI) in England produced a suggested use rate for athletic fields based on their



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drainage capabilities (Table 2). Dr. Dave Minner from Iowa State University has suggested similar limits for native soil fields, i.e. 50-80 events a year. This is by no means set in concrete, as fields can be destroyed in just a few hours if there is inclement weather during the game.

An extremely important turf practice that also improves water infiltration rates is coring or tining (see cover photo). These practices should be undertaken as often as manpower allows, ideally 6-8 times per growing season, or 1 time per month. Hollow coring produces small soil cores on the surface that need to be dragged in or collected so doing this during the playing season is not feasible, but solid tining during the season and hollow coring outside of the season is a good approach. Native soil fields also benefit from annual deep tining or verti-draining.

Turf management practices that increase field longevity include watering, mowing and applications of fertilizer.

Removing soil creates large air spaces in the top 4". For this operation to offer soil benefits, there must be at least 120-150 holes per sq. metre (12-15 holes per sq. foot).

Turf Irrigation

Watering sports fields is an art-form and requires turf managers to balance the amounts of water and oxygen in the soil. Over-watering leads to low oxygen levels and subsequent poor turf growth. With too little water, turf growth slows down, which is disastrous for sports fields where growth and recovery is needed. As stated earlier, the rate at which a field drains depends upon its soil texture, as noted by Ohio State soil physicist Dr. Ed McCoy (Table 3). As a rule of thumb, grasses need around 1-inch water a week to grow and this is usually applied over two increments to avoid run-off.

Mowing

Mowing practices dictate turf health. Turf that is moved once every 10 days at 75-100 mm height (3-4 inches) with blunt mower blades will invariably look like a



Figure 1. A "by-pass" system being installed. Sand slits create drainage channels from the field surface to underlying drains. The slits must be topdressed annually with sand or they can cap off/seal over.

Type of Field	Hours/Week Adult Use	Games/Year	Notes
Native soil with basic pipe drain	1-2	50-80	Heavy clay soils at the lower end of the range
Sand slits/slit drained	6	95-125	Sand TD program must be in place
Sand-based field	8-9	400+	Very high maintenance

Table 2. Effect of field type on hours of adult use (STRI Bulletin, January 2004).

Field Type	Waterlogged (days)	Drought (days)
Native Soil, pipes at 20 ft	4	10+
4" sandy-loam cap, pipes at 20 ft.	2	7
4" sandy-loam cap, pipes at 10 ft.	1	6
10" sand-loam cap, pipes at 20 ft.	0	7

Table 3. The effect of field type on soil water conditions after 25 mm (1 inch) of rain.

pasture. Turf that is mowed once or twice a week during spring and fall with sharp mower blades and at the correct height will not only look better but will have better density and texture and overall health (Figure 2).

Mowing height depends upon the sport in question (Table 4). Mowing at the higher end of the recommended range means a deeper root system and some

improved drought tolerance. However, mowing at the lower end of the recommended range increases turf density and that's very important for "bunch-type" grasses like perennial ryegrass and tall fescue.

Fertilizing

Athletic fields need around 225 kg nitrogen per hectare per year (4-5 lbs N/



Figure 2. What a difference a mower makes! Same field, same problems (weeds, undulations) just mowed more frequently with better equipment.

1,000 sq.ft.). The majority of that nitrogen should be applied in late summer and fall. Generally, a balanced fertilizer of nitrogen (N), phosphorus (P) and potassium (K) is applied, with at least 50% of the content slow-release. Phosphorus and potassium applications are usually only made if they are deficient in the soil, so a soil test is recommended – every year on sandy soils and every 3-5 years on native soil. The uptake of nutrients into the turf plant is reliant on a growing root system, so healthy soil conditions are paramount.

Some Renovation Tips

Fields under heavy traffic are constantly evolving. They are not perennial crops, but are in a constant state of renovation. As such, sports turf managers look for ways to produce ground cover in a very short period of time.

One way is to lay sod. Using sod offers the opportunity to have a 100% Kentucky bluegrass playing surface. It also requires only 2-3 months of grow-in before play. During the grow-in period, sod needs watering and feeding. Fertilizer that contains a sizeable amount of phosphorus in the analysis encourages root growth.

Most, if not all sod, is grown on native soils, which is okay if the sod is being used on a native soil, but can cause some is-



Sports Field Use	Grass Species	Mowing Height
Baseball infields, field hockey & high quality soccer fields	Kentucky bluegrass &/or perennial ryegrass	1.0-2.5 in.
Baseball outfields, soccer, football, lacrosse, polo & rugby fields	Kentucky bluegrass &/or perennial ryegrass	1.5-2.5 in.
Intramural & multiple-use fields	Kent. bluegrass &/or per. ryegrass, or tall fescue	2.0-3.0 in.

Table 4. Optimum range of mowing heights for sports fields.

Situation	Seeding Rate (lb/M)	Seeding Rate (gm/M2)
New field or major renovation (close season)	5-8	25-40
Overseeding during the playing season	10 per week	50 per week

Table 5. Perennial ryegrass seeding rates.

sues if it is being used on sand. Capping off a sandy field with a native soil sod significantly reduces the water infiltration rate. The sod layer must be diluted by coring and sand topdressing to improve its drainage capabilities and this practice can take several years to see a marked improvement in infiltration rates. Unfortunately, buying sod grown on sand usually involves buying sod from a grower many miles away, which means high transport costs. Many pro stadiums in the northern and midwestern US are sodded with sand-based sod from New Jersey!

The other way to establish grasses quickly under high traffic is with peren-

nial ryegrass. Because time is of the essence, higher seeding rates are recommended during the playing season (Table 5). Outside of the playing season, rates are lower to encourage healthier plants that reach maturity and have better wear tolerance. High seeding rates mean that the plants remain juvenile and not as wear tolerant, but if green cover is needed, particularly if the field is constantly under heavy use, then these high rates are needed. I have found that 50 gms/M² per week on bare soil areas, applied with a drop seeder prior to games, has produced the best results. Slit-seeders cause too much surface damage on heavily trafficked areas like goal mouths.

Higher seeding rates are also used to out-compete weeds. Establishing turf on bare soil can be difficult as broadleaf and weedy grasses fill in bare areas quickly. Crabgrass and Poa annua are two of the main culprits and they will infest areas quickly if there is bare soil for any length of time. Fast establishing turf like perennial ryegrass is much better at competing with these weeds than slower species like Kentucky bluegrass.

Recent additions to the overseeding market for sports turf managers are a turftype annual ryegrass and several cultivars of transitional ryegrasses. Both of these are quick to establish and produce green cover during the playing season. The annual dies the following spring/early summer. The transitional ryes last longer.

The critical factor in seeding success or failure is seed moisture. The bottom line is this – seed will not germinate if it is not kept in a constant state of moisture. In reallife terms, that means someone has to commit to lightly wetting down or "sy-

ringing" the seed several times a day for as long as it takes for the seed to germinate. For perennial ryegrass that means 5-7 days, for Kentucky bluegrass that means 14-21 days. A typical syringing program might be to lightly wet the seed with a hose at 9 am, noon, 2 pm and 4 pm. Using pop-up sprinklers to syringe the seed typically results in too much water being applied and saturated soils, so hosepipes work best.

Another key to successful seeding is the application of a starter fertilizer (with phosphorus). Fertilizer has a tremendous effect on establishing new grasses.

In conclusion, the single most important factor that affects turf growth and recovery and the performance and safety of a sports field is the immediate, underlying soil. Turf managers must be proficient at managing the soil so that it has the right balance of water and oxygen. When the soil is in poor condition, all other factors are affected. No amount of seed and fertilizer will help if soil conditions are not conducive to turf growth.

Under heavy traffic conditions, higher rates of perennial ryegrass are needed to ensure field safety and performance. Coupled with fertilizer applications and regular mowing, these turf practices can make a huge difference to the quality of a field. Last but not least, choosing the right grass for the situation is important. If there is a strong desire to have a Kentucky bluegrass field, sod offers that option. In most other cases, mixes of Kentucky bluegrass with perennial ryegrass are used, with an understanding that over time the field will be dominated by perennial ryegrass, particularly once over-seeding starts during the playing season. ♦

Pamela Sherratt is the Sports Turf Extension Specialist at The Ohio State University and was the feature speaker at the STA's 20th Annual Field Day. Pam disseminates sports turf research to the industry in a variety of ways, including the development and implementation of the Buckeye Sports Turf Program to keep sports field managers abreast of current topics important in the management of athletic fields (http:// buckeyeturf.osu.edu/).



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id you know that two billion people worldwide watched the 2007 Cricket World Cup final? Did you know that when Canada became a Dominion in 1867, the first Governor-General set aside land at the Vice-Regal Lodge (now Rideau Hall) for cricket practice and the Prime Minister declared cricket the national sport (Birley 1999)? However, what you may not know is that in the tiny Hamlet of Inverhaugh, located on the Grand River between Elora and Kitchener, there is a group of individuals known as the Inverhaugh Cricket Club who play the way the game should be played, on a turf wicket. Here Mr. Bart Singh and his wife Jan and associates have created, on their property, a cricket ground that arguably has one of the best grass wickets in Canada. They also have a tennis court which looks as if it was transplanted from Wimbledon! Bart's passion and commitment to the game and its playing surface is amply illustrated both daily

and in the 40 hours per week necessary to maintain this first class facility and in the money spent on the maintenance of his four acre 'field of dreams.'

History & Member Duties

The Inverhaugh Cricket Club was formed some 12 years ago. One of the rules of membership is that each member must contribute in some way to the maintenance, which ensures not all the work is left to the owners. Of the approximately 45 members, all have first been interviewed by Bart and Jan to determine the skills they bring, their interest in the game and to ensure that they are aware of what membership in the club means. Junior members must supply physical fitness details to ensure their safety at practices and matches. Furthermore, all members must respect that the playing surface is on the Singh's family property. Most members, including the juniors, work on the field on the various operations necessary

to keep it in top condition. The rest may have expertise in other areas such as pest control, landscaping, administration or painting.

Maintenance

Climate has a large bearing on the maintenance of cricket fields in Canada where the soil is frozen for at least four months of the year - particularly at Inverhaugh. Snow leaves about mid-April and maintenance begins. The entire field is dethatched, swept and aerated. Next the outfield and square are rolled using a selfpropelled 2 tonne roller and a smaller one weighing anywhere from 350-700 pounds depending on the amount of water added. This operation takes about three hours.

The area known as the cricket square is the most highly maintained. The square at Inverhaugh is divided into 10 pitches or wickets, each three yards wide and 22 yards long. Three pitches are started within the square in spring, one for practice and two for games which begin some time in May. They are rolled length wise, diagonally, and then across, over several days or about 10 hours, to create the firm type of surface so necessary for good ball bounce. The same practice is used as each wicket within the square is readied for a game. Each wicket has about five games played on it over the season. Following rolling, a 16-8-8 fertilizer is applied. At Inverhaugh, the square is fertilized once a month and the outfield three times a year.



Mowing is a critical part of the maintenance of a grass wicket. At Inverhaugh, the outfield is kept at 3/4 of an inch, the square at 1/2 an inch and over several days the game wicket is brought down to 1/4 inch cutting height on game day using a greensmower. The wicket is mown three times a week, the square twice a week plus the outfield. The entire field to beyond the boundary stakes and square takes about two hours to mow. Herbicides are rarely used as most weeds are pulled by hand. The outfield measured at its widest is 420 feet and 180 feet in the other direction.

The club plays about 26 'friendly' matches each year plus practices, so there is a considerable amount of wear by sea-

son's end in September. A 'friendly' is a non-league contest (with tea provided by Jan) and a social time after the match. Work begins five days before match day rolling with a heavy roller, up to 15 hours, and watering tapering off toward game day. The square consists of a blend of three types of perennial rye, varieties Manhattan, Paragon and Pizazz, which largely due to their high lignin content, stand up well to the constant wear from rolling and play. In the first week of September, work parties are organized and the field is watered for several days to soften the soil which has become compacted from watering and rolling. This allows for aeration to begin, more thatch removal and sweeping. After aeration in two directions, worn areas are overseeded using the blend of ryes mentioned earlier. Topdressing is also applied using a clay material from a secret location (this is quite the operation!).

The club has about 45 members, including 19 juniors, so can field three teams. The first team is able to recruit top players using Bart's contacts, depending on the level of competition for that match. Then a social team and finally a junior team are formed. There are three high school teams in the Guelph area. They play each other, including a tournament at a city park cricket ground before summer break. They also practice at Inverhaugh and play an additional four games there.

Without the foresight of Bart Singh and his wife Jan, the field that they and club members spend so much of their summer maintaining would never have reached the status it now enjoys. Why do they do it? Perhaps their motto 'propter ludi amorem' says it best, which translated means, 'for the love of the game.'

References & Photo Credit

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- 3. Cricket Heaven in His Backyard, Guelph Mercury, Greg Mercer, July 29, 2006.
- 4. Photos courtesy of John Metcalf.

Industry News

GORD DOL, president of Dol Turf Restoration Ltd., is pleased to announce that Ken Pavely has joined the company as sales consultant for golf and sports turf. Ken has over 35 years of experience in the turf industry covering golf, professional lawn care, landscape maintenance and construction and parks. Most recently, he was the IPM specialist for Landscape Ontario, developing the IPM Accreditation program now in use here in Ontario and in five other provinces.

Ken also worked with his local municipality on sports turf maintenance and construction, maintaining and rebuilding several pitches over the last two years using emerging products such as mycorrizhae, drought/heat resistant turf cultivars and biostimulants.

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