Sports Turf Manager

for safe, natural sports turf

1987-2007
CELEBRATING
★ 20 YEARS ★

Spring 2007
VOLUME 20, NUMBER 1

Ontario Turf Seeds

We've done your homework for you! See pages 11-12 for a comprehensive list of turf seed available from Ontario suppliers. STA publishes this valuable information every 2 years.

Sports Field Assessment

DR. ERIC LYONS, ASSISTANT PROFESSOR, TURFGRASS SCIENCE, UNIVERSITY OF GUELPH

An OTS Highlight Article. Assessment is an important part of any management plan, whether talking about managing businesses, facilities or sports fields. It provides information about what is being done correctly and what needs to be improved upon. In many cases, sports field assessment is not done regularly or it is not performed with the correct intent. This article will explore some of the types of sports fields assessment, help determine the goals of sports field assessment and will explore some common oversights in blending assessment with expectations.

Often the only assessment of a sports field occurs at the beginning of a game as the referee quickly peruses the field to assure that it will be safe for play. This is necessary and will identify irrigation heads that are stuck or possibly identify large holes in the field caused by concerts and other alternative uses. However, this assessment will not help the sport field manager fulfill the goals of identifying management problems and moving towards improving overall quality.

One of the most important steps of sports field assessment is to determine and explicitly state the goals of the assessment. There are many things that can be assessed. Generally we think of assessing the playing field but other things need to be addressed concurrently, such as construction, the management plan, the implementation of the management plan and possibly even the classification system that many municipalities and athletic facilities are implementing. The goals for identifying problems... ➟ page 6

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The President's Desk

Spring is here, and it's time to get back to the business of sports turf management. After an extremely wet fall and a winter with very little snow cover, I'm sure you all have your work cut out for you over the next few months.

The Sports Turf Association is 20 years old in 2007. We celebrated at the Ontario Turfgrass Symposium with a retrospective presentation and the publication of *20 Years of Service* by Mike Bladon which is included as an insert in this edition. During the OTS, the Guelph Turfgrass Institute also celebrated its 20th anniversary.

This year's OTS was again a great success with high attendance, a great venue and a first class slate of speakers. The OTS is, and continues to be, the premier turf education forum in Ontario. Many thanks to the OTS Committee for a job well done.

During the symposium, we also held our annual general meeting. As you may recall, over the past year we changed our scholarship program and revamped the scoring matrix. At the AGM, we also announced its renaming to the "Robert W. Sheard Scholarship" and Bob was presented with a plaque recognizing his contributions to our association and the sports turf industry. We did a good job of keeping this under wraps prior to the conference, however when Bob's lovely wife Gladys entered the room, he knew that we were up to something!

During the AGM, elections for board positions were also held. Many thanks for a job well done to Roy Forfar, Brian Adriaans and Greg Snaith – all three have stepped down from our board. I would like to welcome Murray Cameron, Bill Clausen, Paul Cooper and Rob Field as directors. I look forward with great enthusiasm to the next year of my chair.

The STA currently has 262 members. The more members we have, the stronger our voice will be. I challenge each of you to encourage just one new person to join. It should be an easy sell as the benefits of a professional membership are multiple.

Finally, part of our mandate set out in our strategic plan is to encourage and support education and research. During the OTS, we made a donation to the Ontario Turfgrass Research Foundation. We have a great team of Ontario turf researchers (including many at the University of Guelph) and they need and deserve our support. Donations to the OTRF are appreciated. For more information on becoming an OTRF member or to donate to the future of turf research in Ontario, contact the OTRF office at 519-824-4120 (x56149) or email otrf@gti.uoguelph.ca.

— Gordon Dol, STA President

Above: STA President Gord Dol (left) presents Ron Schiedel, President of the Ontario Turfgrass Research Foundation, with a donation in support of turfgrass research.

EVENT CALENDAR

April/May (various dates)
Guelph Turfgrass Institute
Pesticide Certification Preparatory Courses for MOE Exams
Guelph, ON
Info: (519) 824-4120 x 52501
www.uoguelph.ca/GTI

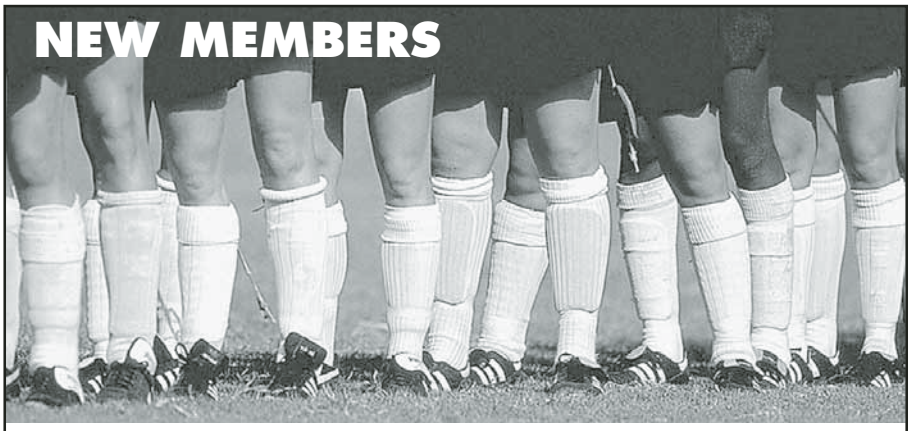
April 29 – May 3
Ontario Recreation Facilities Association Professional Development Program & Expo
Guelph, ON
Info: (416) 426-7062
www.orfa.com

September 2007
Sports Turf Association
20th Annual Field Day
Watch for details!
Info: (519) 763-9431
www.sportsturfassociation.com

November 1, 2007
Sports Turf Association
Robert W. Sheard Scholarship Application Deadline
Info: (519) 763-9431
www.sportsturfassociation.com

EMPLOYMENT ONLINE

Are you advertising a position or job searching? Visit us online at www.sportsturfassociation.com and click on "Turf Trades" for info. Cost to post an ad is only $75 for STA members (2-month listing).



WELCOME TO THE STA!

Herman Krecker, Town of East Gwillimbury. Sharon, ON

Steve Jemmett, NewRoads National Leasing, Richmond Hill, ON

Tom Mulvale, Town of Oakville, ON

Janis Olbina, Town of Oakville, ON

Frank Cain, University of Guelph, Department of Athletics, Guelph, ON

Harry Hakim, City of Windsor, 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.

Summer 2007 Submissions
If you have something you'd like to submit for the next issue, please forward it to the STA office by May 18, 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.

Turf Industry Press Releases

ZANDER CELEBRATES FIVE DECADES & DUKE RELEASES THE TRIWAVE 60 OVERSEEDER

Zander Sod Co. Limited Celebrates 50th Anniversary in 2007

In 1957, Fred Zander purchased his first truck and started Zander Sod Co. Limited as a sod delivery service. At that time, the sod was rolled and carried to the truck, loaded and unloaded, all by hand. How things have changed! We now grow over 3,000 acres. With many varieties of bluegrass, bentgrass and fescue, we are proud to be the choice for Ontario's top-rated golf courses and construction projects.

Right from the beginning, Zander Sod has been dedicated to their customers and the sod industry. Our company is based on the foundation of supplying a quality product and great service at a competitive price. As much as technology has changed our business, our values have remained the same.

Just how much sod have we sold? By our estimates, Zander Sod has sold enough sod to cover over 13,000 average-sized soccer fields!

Our sod not only looks greener, it's healthier. Zander Sod prides itself on supplying the best turf and ensuring that the soil and environment stays healthy for generations to come. With the assistance of an agronomist, Zander Sod utilizes a complete soil management program that addresses the micro nutrient levels in both the soil and the plants. From seed bed preparation right through to harvest, we continuously monitor and adjust to produce only the highest quality grasses.

For many years, Zander Sod has been active members of a number of local and international associations which work to promote and better the turfgrass, landscape and golf industries, as well as protect the environment.

Three Generations of Zander's Continue the Tradition

Fred's two sons pride themselves with continuing the family business and maintaining Zander Sod's industry reputation for excellent products and service. Claus Zander oversees operations as Vice-President and Mike Zander is the Manager of Bentgrass Production. For the last few years, the third generation, Mike's sons, have helped out in many departments. With over 70 employees during the busy season, Zander Sod has grown to be one of the largest sod-producers in Ontario and can be contacted at 905-727-2100, 1-877-727-2100, or www.zandersod.com.

New Overseeder from Duke

The TriWave 60 Overseeder is the latest innovation from Turfco set to revolutionize turf overseeding and interseeding practices. Each of the three independent floating heads have down pressure adjustment that adjust to varying turf conditions increasing germination by following the ground contours and creating more consistent slits. The combination of WaveBlade design and counter-rotating movement creates a clean, optimal square slit while minimizing turf disruption. A patent-pending seed delivery system places the seed directly into the slit reducing waste and creating increased seed-to-soil contact. For more information on this revolutionary new product, please contact:

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Toronto Area: 905-338-2404
All other Ontario Areas: 800-883-0761
Fax: 905-637-2009

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. This is a great way to both support your professional association and enhance your resume!

COVER STORY CONTINUED... FIELD ASSESSMENT

DR. ERIC LYONS, ASSISTANT PROFESSOR, TURFGRASS SCIENCE, UNIVERSITY OF GUELPH

... should be realistic and it is crucial to keep an open mind and try to use the information in a positive way.

Another procedural question that needs to be asked is who should perform the assessment? Should it be done internally or externally, through a consultant or a colleague from a neighbouring facility or municipality? Both options have their merits and downfalls. Internal assessment should be done continually by turfgrass managers but an overall assessment with specific goals can also be achieved internally. Internal assessments have the advantage of a greater historical knowledge of management and the construction of the fields, often allowing assessments to be more accurate. That knowledge is accompanied by preconceived ideas about what the problems may be. In order for assessment to be as valuable as possible, blinders must be taken off and everything must be looked at with an open mind. Alternatively an outside person could be brought in who is in a position to see more athletic fields and will come in with new ideas. This is also accompanied by a lack of knowledge of the history of construction and legacy of the fields. While generally this is viewed as a downside, the outside assessor is not clouded by "we tried that before," or "the politics won't allow that." This independence can be crucial in "telling it how it is" so that improvements can be made.

When assessing athletic fields the first thing that is done is a general safety assessment, looking for grass cover, potential tripping hazards or collision hazards. After that is completed, the general construction of the field can be assessed. Does the field have a proper crown, are there low lying areas where water can accumulate and is there a place for the water to go once it exits the field? One of the most important tools in a turfgrass managers kit is her/his soil probe. The probe will let you know the thatch accumulation of a field, it can identify areas of compaction, and probably most importantly it can tell you about the soils used in the field's construction. One of the most common mistakes is to expect fields constructed very differently to perform the same under identical management regimes. For example, sand-based fields have greatly different moisture and fertility requirements than soil-based fields.

The management program can be assessed on paper for best management practices but it is essential to get out to the fields to see their condition and assess whether or not the management plan is realistic and implemented properly. Following are a few of the primary cultural practices and some of the common problems that can be uncovered through assessment.

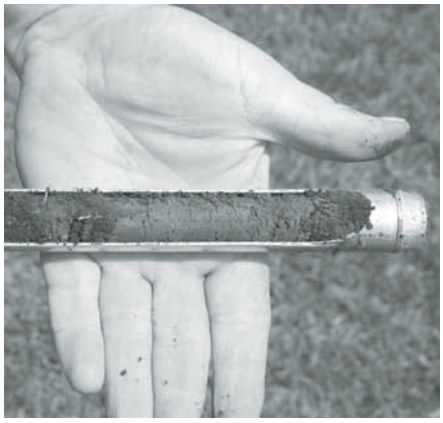
Mowing

The management practice that is most crucial to providing safe athletic fields is also the one that can be the root of the

most problems. Mowing needs to be done often and with good equipment. One of the most common problems with the implementation of a management plan occurs with targeted mowing frequencies that are not possible with the equipment or staff available. Another problem with mowing that may be uncovered is problems with proper maintenance of the mowers. Are the mowers cutting cleanly? Is there a consistent cut with no "mo-hawking"? Other problems that are commonly found during assessment are wear patterns being caused by mowers turning too tightly, or compacted areas along mowing patterns.

Fertility

The most common problem with fertility that can be uncovered is a lack of consistency of application, or evidence that fields are just not being fertilized due to inconvenient locality or other mitigating factors. Many fields have areas that consistently do not get fertilized. The only way to tell if a field or area is fertile or has poor soil conditions is to get out the soil probe and test that soil. Another common problem that a program assessment can uncover is that the type of fertilizer is incorrect. Are the proper fertilizers being applied and are they being applied at the proper nitrogen rate for the prescribed mowing frequencies? As fertility increases, the need for mowing also increases. Many municipalities have responded by lowering their application of nitrogen throughout the season. The result is less growth and less expense for mowing, but this comes at the price of a lack of recovery and overall poor field quality, leading to unsafe playing conditions.



Adjacent Page: Severe compaction on corner of an athletic field caused by nearby construction. **Right:** Understanding the soil is crucial in determining management plans. A soil probe is an invaluable tool and can uncover many underlying causes of problems.

Aeration, Topdressing, Overseeding

Aeration is a crucial aspect of any management program. It helps control thatch and organic matter build-up at the soil surface by mixing the soil in with the thatch allowing the microbes in the soil to break down the organic matter. Often aeration is not done aggressively resulting in thatch accumulation and layering if organic topdressing is being used. If topdressing with compost or other organic material, it is essential that an aggressive aeration program is in place. This is essential to prevent a layer of organic matter from accumulating at the surface of the playing field, inhibiting healthy turfgrass growth. Assessment can help coordinate different management practices to maximize the effectiveness. Overseeding, a crucial part of any athletic field management plan, should be timed with aeration to maximize soil to seed contact and assure maximum benefit.

Comprehensive sports field assessment goes beyond looking at the end product and analyzes how the entire management program including use management impacts field quality.

Classification Systems

Finally, assessments of the overall classification systems are essential. Often the classification systems are based on inputs and have implied quality for those added inputs with little to no regard for use patterns. Often the fields that are higher on the classification system are expected to be the premier fields yet they are scheduled for the most hours of use. Use patterns must be part of an overall athletic field management plan. While there are always unscheduled uses from schools and kids playing in parks, it should be remembered that field quality and safety are often most correlated with use patterns.

It is essential that we continue to try to improve how we manage athletic fields and one way to see where we are and decide how to move forward is through comprehensive sports field assessment. This process goes beyond looking at the end product and analyzes how the entire management program including use management impacts field quality. This broad based assessment can lead to new ideas and continuation of successful practices and allows the turfgrass manager to move forward in an effective manner. ♦

Top Left: Special events can cause excessive wear and need to be accounted for in assessing use. **Top Right:** Field failure due to overuse and wet weather.

THE IMPORTANCE OF PROPER FIELD MANAGEMENT

IAN FERGUSON, 2007 STA ROBERT W. SHEARD SCHOLARSHIP RECIPIENT

Proper field management today goes beyond the traditional "mow and blow" concept of the past. The increased study of turf grass has lead to many new concepts on plant physiology and the advancement of technology has created a fleet of equipment which is greatly superior in terms of accuracy, consistency and quality.

With these advancements in turf management, we are now able to provide fields of unsurpassed quality which has lead to the progression of athlete's skills and the sports played on our fields. This has led to greater demands and expectations for our fields, which means that we, as educated turf managers, need to implement the skills and knowledge that we have acquired in order to meet the needs of the games.

These skills go beyond merely implementing an irrigation schedule, which is without a doubt a vital asset to turf managers, but rather to the more mechanical side of proper field management, such as fertility regimes, aerification, over-seeding and topdressing, spraying, and field renovations. Without the proper use and timing of these skills, turf managers may struggle to keep their fields performing at the same level as the sports being played on them, resulting in weakened and diseased fields, which are uneven and unsafe for play.

Fertilization

Perhaps the most utilized skill by turf managers today is the use of fertilizers. Whether they be organic or synthetic, fast or slow release, granular or liquid, the addition of essential nutrients into the soil profile is critical to turf health. Implementing a regime that best suits the needs of your turf will be crucial in maintaining a healthy stand of grass. There are several factors to consider when planning a fertility program: climate, turf type, irrigation scheduling, budget, and field use are five of the more common ones. By taking all factors into consideration, a program can be built to best supply the turf with nutrients. The most recent concept is called "spoon-feeding" and in southern Ontario typically consists of a late fall nitrogen slow release and a late spring all-purpose slow release fertilizer to provide a base level of fertility throughout the year. Once base fertility is established, the "spoon-feeding" method is applied by using fast release liquid fertilizers bi-weekly to control growth rates, colour and disease pressures. This concept has thus far proven to be an effective fertility tool, and should be considered by all turf managers to implement on their fields.

Aerification

Aerification of fields may be the most important management practice for sports fields in terms of type and timing. The frequency of aeration is entirely dependant on the type of field and the amount of play it receives (thus the intensity of compaction). By using this theory of the relation between wear and aeration, a sports turf manager can decide when to aerate their fields. Clearly a football pitch would receive more wear and compaction than a baseball diamond, and the frequency of aeration practices should reflect that. A general recommendation for the aeration of high wear fields in the southwestern Ontario region is once per month, which works out to roughly six times per season. Some of this aeration should be solid tine, and some should be cored. When a turf manager chooses to do one or the other it is usually based on timing, budget and labour restrictions Coring usually requires more time and money, as the cores need to be crumbled or collected afterwards. Without aeration practices, fields become compacted, which affects the turf by preventing gas exchange, reducing drainage and inhibiting root growth. This creates weak turf with high probabilities of contracting disease, such as several types of fungal species. In addition, compaction also creates a hazardous playing surface by making the surface soft and squishy, which is difficult to play on and increases risk of injury.

Topdressing & Overseeding

In conjunction with core aerating is a practice known as topdressing and overseeding. Typically, prior to core aerating, a sand-seed mixture is spread over the playing surface approximately 1/8" to 1/4" thick. The sand is used as a soil amendment to increase the drainage capacity of the field and the seed is mixed in to speed up recovery time from the damage of coring, to avoid weeds and disease from interrupting turf growth. The entire process will cause some stress to the field, but with proper practices, a turf manager will end up with a thicker, lusher field, which drains better and performs well even with high wear. This is typically done in the spring while fields are kept moist with frequent rainfall and as the temperature is increasing to aid with seed germination. Fields in southwestern Ontario are typically a blend of Kentucky bluegrass and perennial ryegrass, and so a seed blend which matches the content of the field is suggested. It should be noted that perennial ryegrass germinates faster than Kentucky bluegrass, but also that Kentucky bluegrass is more resilient to wear than perennial ryegrass.

Pesticides, Fungicides & IPM

On high end fields, having consistent uniform turf is an absolute necessity. To achieve such perfection usually requires the use of herbicides and fungicides to keep pests from growing in the fields where they are not wanted. Many municipalities are currently banning the use of most pesticides, but there is a need for them in certain circumstances which should be brought to the council's attention to appeal the bylaws to exempt high quality turf, such as sports fields, lawn bowling clubs and golf courses. Spraying sports turf with preventative herbicides, fungicides and pesticides is not entirely necessary. Post emergent treatments for

most pests are usually effective at alleviating the problem. A turf manager should be able to argue their point to a council by making the argument that only post-emergent spraying will be done, and it will be done by an IPM licensed professional in areas only where the disease, insects or weeds are seen. The application of chemicals to ensure uniformity in the playing fields is a cost effective way to maintain field quality and is vital to the maintenance of a field.

General Maintenance

There are other practices which also affect the quality of the game which are not directly related to the turf itself. Field repairs, such as back-stop patching, fence capping, goal net repairs and bleacher refinishing are other maintenance practices which affect the game and reflect the quality of the fields. Back-stops and fences and nets with holes in them allow balls to pass through, which is an issue both for safety and for consistency in the rules of the game. Fence capping and re-finished bleachers are also crucial in keeping both players and spectators safe. It would be very unfortunate for a player to injure themselves on the top of a chain link fence or for a spectator to be seated on an unsafe bleacher stand and have an accident. Other repairs that occur directly on the field, such as the removal of lips, edging warning tracks and sodding goal creases are also vital in ensuring a safe playing surface. Fields need to be as smooth and consistent as possible, and all transition areas (such as clay to grass) need to be clean, smooth and level to avoid injuries from occurring. This type of maintenance practice is usually forgotten about on slightly lower quality fields, which at some times may be acceptable by the standards of the games being played on them, but for high quality fields with professional level sports being played on them, ignoring these repairs is intolerable.

Going beyond the management practices of the past is vital in providing fields for the future of sports. With the large increase in player skill comes a large demand for an increase in field quality. Today's new technology and knowledge of turf now allows us to meet and raise the standards for sports fields and sports facilities. By using these new resources, turf managers are now able to provide thicker, smoother, tougher fields to stand up to the increased level of play. These new practices don't come without their costs, but the benefits of properly implementing them on fields doesn't compare to the fields which don't receive them. It is becoming a struggle for turf managers today to keep up with player and game expectations; many facilities have already chosen to change their fields to synthetic turf to be rid of the complications of compaction, drainage and fertility, but the value and experience of having natural turf fields is an immeasurable quality which turf managers should strive to preserve.♦

Information gathered from: 1. Personal Knowledge 2. The Ohio State University: http://ohioline.osu.edu/srt-fact/0002.html (Oct. 25th, 2006).

Grass Seeds

AVAILABLE FROM MAJOR SEED COMPANIES IN ONTARIO

The Sports Turf Association strongly recommends to athletic field managers that they use only improved cultivars that have been tested and found superior under local conditions.

SPECIES	SUPPLIER									
	Bishop		Ontario		Pickseed		Quality		Speare	
Kentucky Blue	A34 Able I Boutique Brooklawn Chicago II Everest Everglade Freedom Liberator Midnight Minnfine	NuBlue NuDestiny NuGlade Odyssey Rambo Rugby II Rythmn Shamrock SR2284 Total Eclipse Tsunami	Award Beyond Chicago II Liberator NuBlue NuDestiny NuGlade		Alpine America Blue Velvet Cannon Crest Excursion	Explorer Langara Mercury Moon Shadow Quantum Leap Touchdown	Abbey Alene Avalanche Awesome Barrister Blacksburg II Blue Sapphire Bluemax Bluestone Brilliant Cadet Courtyard	Denim Midnight Midnight II Midnight Star Moonbeam Moonlight North Star Perfection Princeton 105 Prosperity Raven Rugby II Voyager II	A34 Able I Boutique Brooklawn Chicago II Everest Everglade Freedom Liberator Midnight Minnfine	NuBlue NuDestiny NuGlade Odyssey Rambo Rugby II Rythmn Shamrock SR2284 Total Eclipse Tsunami
Texas/ Kentucky Blue Hybrid					Bandera		Longhorn	Thermal Blue		
Poa trivialis	Cypress	Pro Am	Laser	Sabre	Darkhorse	Racehorse	Sabre II	Winterplay	Cypress	Pro Am
Poa supina					Supernova		Supranova			
Poa compressa	Canada Blue		Canada Blue	Reubens	Reptans		Canada Blue	Reubens	Canada Blue	
Ryegrass	Accent Barclay Goalkeeper	Passport Pizzazz Player	ASAP Caddieshack Evolution Extreme Top Gun		Blazer 4 Cutter Edge Fiesta3 Fiesta4	Futura 3000 Quebec Transist 2200/ intermediate ryegrass	All*Star 3 Grand Slam HomeRun	Inspire Primary Stellar	Accent Barclay Goalkeeper	Passport Pizzazz Player

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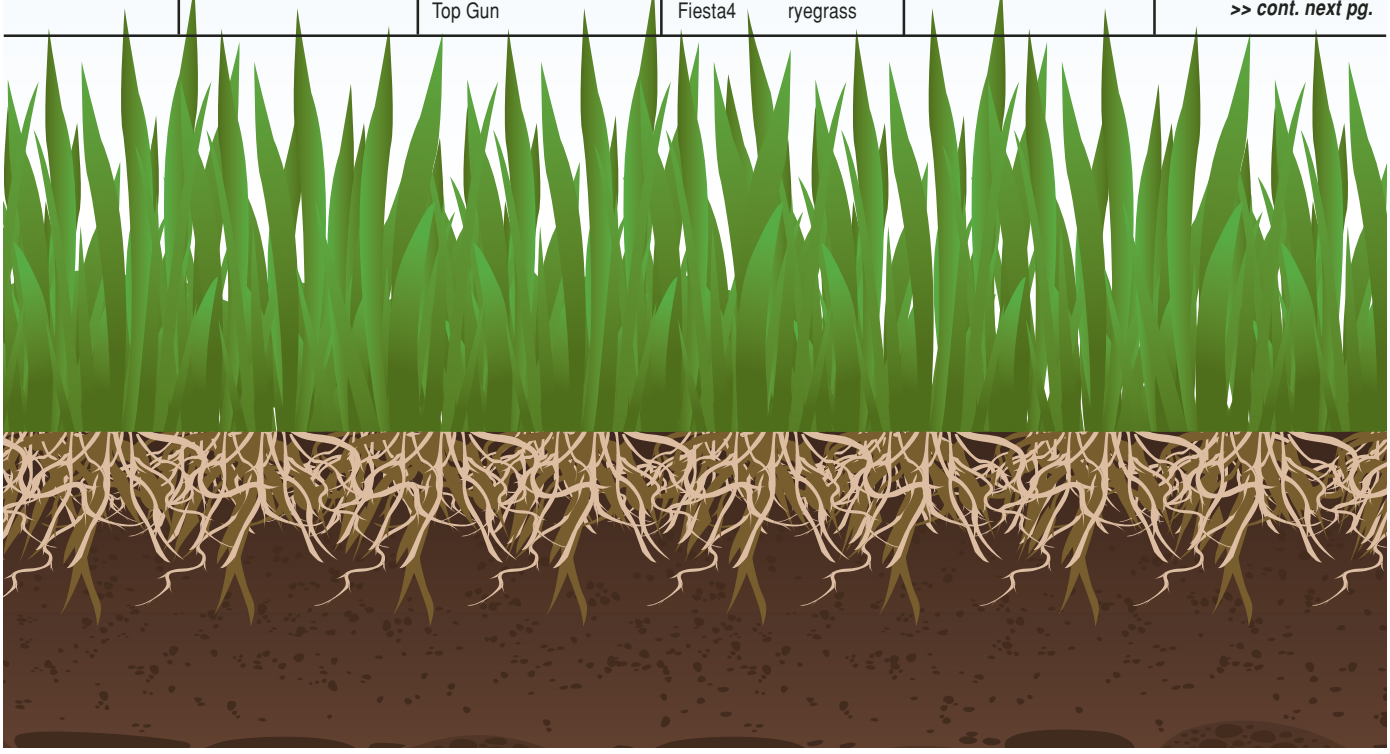

SPECIES	SUPPLIER				
	Bishop	Ontario	Pickseed	Quality	Speare
Fescue: Blue			Azay Blue Fescue	MX 86	
Fescue: Creeping Red	Aberdeen Boreal Salsa	Aruba Audubon Fenway	Boreal Jasper Sea Link	Boreal Florentine Florentine GT Navigator Rose Shademaster II	Aberdeen Boreal Salsa
Fescue: Chewings	Intrigue	J-5 Jamestown II Southport	Victory II Windward	Cascade Longfellow II Shadow II Tiffany Wrigley	Intrigue
Fescue: Hard	Brigade Heron	Ecostar Rescue 911	Bonita Spartan	Aurora Gold Chariot Discovery Heron Ridu Serra	Brigade Heron
Fescue: Sheeps	Azure MX86	Azure MX86AE	Azay Sheeps	Bighorn LIttle Bighorn	Azure MX86
Fescue: Tall	Arid III Coronodo Gold Millenium Regiment Tomcat	Arid III Inferno Jaguar II	Crossfire II Mustang 3 Team Jr.	Avenger Coyote II Dominion Tahoe Raptor	Arid III Coronado Gold Millennium Regiment Tomcat
Bentgrass: Creeping	18th Green A-4 Bengal G-5 L-93 OEB G6 Pen G2 Pen TI Penn A2 Penncross Penneagle Penneagle II Pennlinks Pennlinks II Pennway Providence SR119 SR1020	Dominant Plus L-93 Penn A-4 Penn G-6 Penn Trio Penncross Coated Penncross Penneagle Pennlinks Pennway Providence T-1	Brighton Cato MacKenzie Mariner Penn A-4 Penn G-1 Penncross Pennlinks II Sandhill	Penn A-1 Penn A-2 Penn A-4 Penn G-2 Penncross Penneagle Penneagle II Pennlinks Pennlinks II Seaside II Shark	18th Green A-4 Bengal G-5 L-93 OEB G6 Pen G2 Pen TI Penn A2 Penncross Penneagle Penneagle II Pennlinks Pennlinks II Pennway Providence SR119 SR1020
Bentgrass: Colonial	Highland	Highland	Exeter Highland	Glory Highland	Highland
Bentgrass: Velvet	Legendary		Greenwich Vesper	Greenwich	Legendary
Weeping alkali	Fults	Fults	Fults Salty	Fults Salty	Fults

TURF SEEDING RATES

The following are seeding rates per 100m² for specific species of grass seeds: creeping bentgrass, 0.5-1.0 kg; Kentucky bluegrass, 1.0-2.0 kg; perennial ryegrass, 2.0-4.0 kg; fine fescue, 1.0-3.0 kg; tall fescue, 2.0-3.0 kg; and velvet bentgrass 0.5-0.8 kg.

Source: *Turfgrass Management Recommendations*, Publication 384, OMAFRA, 2005

Celebrating 20 Years

The Sports Turf Association was conceived in 1987, when, at a "brain storming" session held at the University of Guelph, a broad segment of the turf industry endorsed its need. Of particular concern at that meeting was the need to minimize and avoid injury to participants using athletic facilities where they relate to sports turf. Two decades later we continue to promote safe, natural sports turf through education and professional development.

Above: Sports Turf Association President Gord Dol; Rob Witherspoon, Director of the Guelph Turfgrass Institute; and Chris Mark, Chair of the OTS Executive Committee at the 2007 Ontario Turfgrass Symposium. Both the STA and GTI celebrate 20 years in 2007.

1987-2007
CELEBRATING
★20 YEARS★

What's Inside

TWO DECADES STRONG!

Browse through the following six pages for a look at STA yesterday and today. Along with an assortment of photos and tidbits, we also publish a profile of STA founding member Michael Bladon and announce the renaming of the STA Scholarship. Enjoy the journey!

INCLUDED WITH THIS ISSUE
"20 YEARS OF SERVICE"
CHRONICLING STA'S HISTORY

STA Board: Then & Now...

Above: Board of Directors 1987. Michael Bladon, President; Annette Anderson, Conference Chairperson; John Watson, Director; and Ron Dubyk, Secretary. Absent: Bruce Calhoun, Vice President and Robert Allen, Treasurer.

**Sports Turf Newsletter*, Volume 1, Issue 1, October 1987

Top: Board of Directors 2007. Paul Cooper; Bob Sheard, Secretary; Rick Lane, Treasurer; Grant Mckeich; Bill Clausen; Murray Cameron; Jane Arnett-Rivers; Dave Chapman; Cam Beneteau; Bob Kennedy; Lee Huether, Executive Manager; Gord Dol, President; and Andrew Gaydon, Past President. Absent: Rob Field, Paul Gillen and Paul Turner.

Ontario's Premier Turf Educational Event

The 16th annual Ontario Turfgrass Symposium was held February 19 and 20th at Rozanski Hall at the University of Guelph. Turf managers from across the province gathered to participate in educational sessions reflecting the many critical maintenance and environmental issues influencing the care of turf. Speakers from both industry and research offered insight relating to turf care, government legislation and the environment. As with every Ontario Turfgrass Symposium, attendees had a chance to update skills and network with colleagues in the turf industry. Participants at OTS also had the chance to mark and celebrate the 20th anniversaries of both the Sports Turf Association and The Guelph Turfgrass Institute. Planning has already started for the 2008 Ontario Turfgrass symposium. We look forward to seeing you there!

2006 Field Day

STA Fast Facts

02/87 Inaugural meeting of the STA

06/87 1st annual Field Day, University of Guelph

09/87 Volume 1, Issue 1, *Sports Turf Newsletter*

03/88 1st annual conference, Toronto, ON

01/92 1st annual Ontario Turfgrass Symposium, University of Guelph

10/93 Scholarship program launched

01/94 STA office established at the new Guelph Turfgrass Institute

By January of 1989 we had enrolled 76 members. Since then membership has grown to 262 at the beginning of our 20th year.

GTI Celebrates 20 Years!

This year marks the 20th anniversary of the founding of the Guelph Turfgrass Institute (GTI). The institute was established by the University of Guelph in 1987 to "promote an interdisciplinary approach to research, education and extension programs in turfgrass science at the University of Guelph, and to facilitate greater interaction between the university, industry and provincial government." A subsequent industry fundraising drive resulted in the 1993 opening of the G.M. Frost Research & Information Centre building, an impressive structure located on research lands provided by the Province of Ontario. The Guelph Turfgrass Institute continues to be actively engaged in turf and related environmental research and teaching as well as providing a meeting place for the Ontario turfgrass industry.

STA Donates to GTI (1992)

As part of the mandate of the Sports Turf Association to support turf research, Peter Kleschnitzki (left), President of the Sports Turf Association, presented Chris Hall, Director of the Guelph Turfgrass Institute, with a cheque for $1,000. The funds will be used to complete the construction of the institute building. Construction is well underway and completion is expected in late August. The formal opening will occur sometime in October. A machinery storage and service building has already been erected by OMAF. Plans are now being formulated for the development of the research plots. The first seeding of turf plots may occur as early as the spring of 1993.

**Sports Turf Newsletter* Volume 5, Issue 2, July 1992

Artificial Intelligence

A new range of professional artificial turf care machines have been developed by Redexim Charterhouse. Known worldwide for their reliable and effective range of natural turf care equipment such as the Verti-Drain®, Redexim Charterhouse has produced a complete range of equipment to meet the challenging needs of the artificial turf market.

Verti-Brush

The Verti-Brush quickly and effectively levels and distributes applied or existing infill with powerful hydraulic brushes.

Verti-Top

The Verti-Top employs a highly effective synthetic rotary brush to remove debris and top layer infill from the turf, then sifts the debris out in a unique vibratory shaker which redistributes the clean infill back on the field.

Verti-Broom

For brushing and striping of artificial turf, nothing beats the proven Verti-Broom. The highly effective triangular arrangement of the brushes will straighten and groom each grass blade for an attractive and realistic finish.

Verti-Groom

To brush, loosen and decompact the hardest infill, the Verti-Groom is equipped with a variety of interchangeable tools.

Verti-Air

The Verti-Air utilizes a rotary brush and turbine compressed air to lift all material out of the turf, dry and filter the material, sift out the debris and return the clean, dry and decompacted infill back into the turf.

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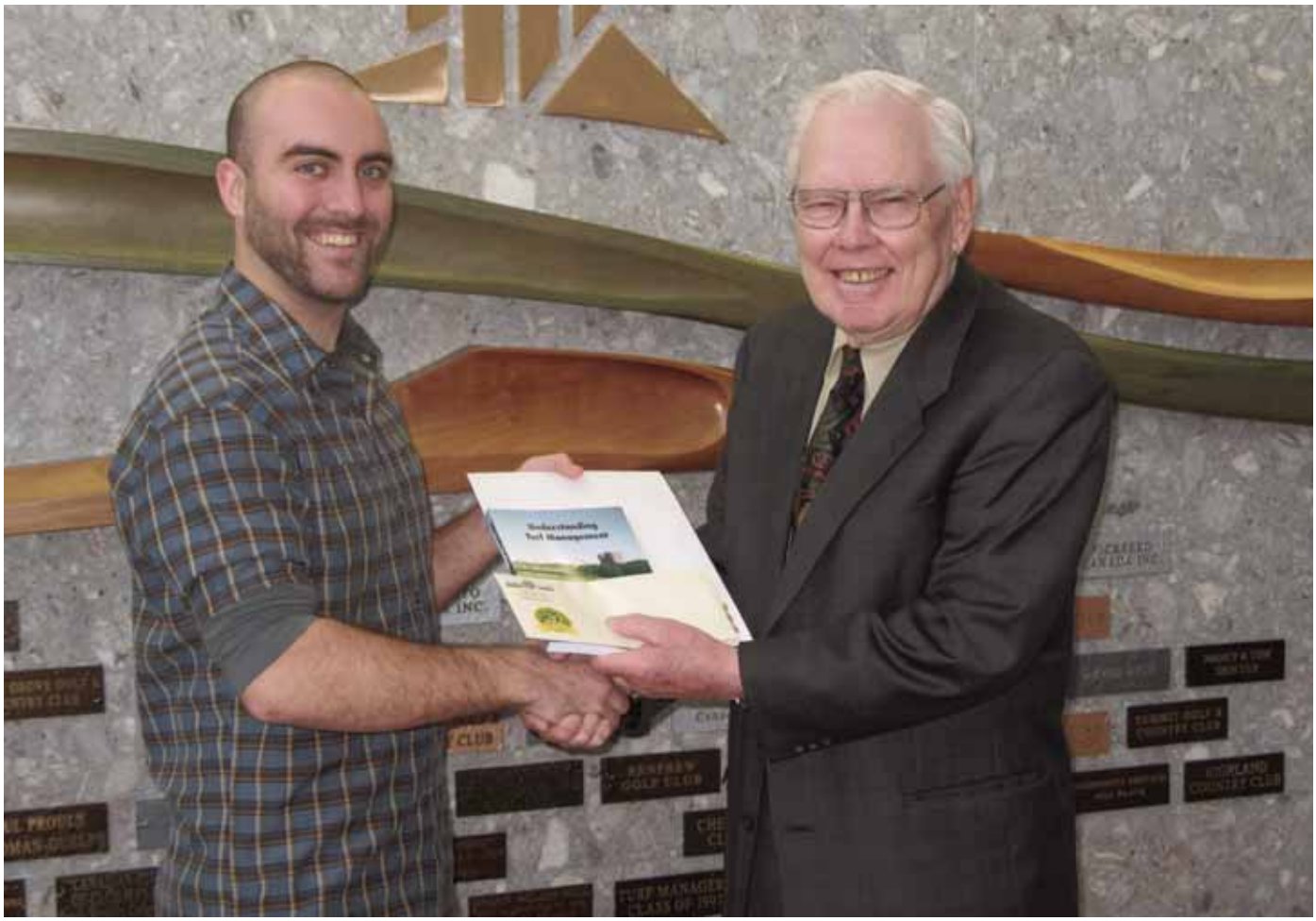

STA Renames Scholarship

IN HONOUR OF LONGTIME DIRECTOR DR. ROBERT W. SHEARD

A scholarship established by the Sports Turf Association (STA) to further its goal of the promotion of safe, natural sports turf through education and professional programs was renamed at the association's annual meeting to honour Dr. Robert W. Sheard.

The STA Scholarship will henceforth be known as the STA Robert W. Sheard Scholarship in recognition of Dr. Sheard's immeasurable contribution and support provided to the Sports Turf Association over the last seventeen years. Bob's involvement with the fledgling organization began in 1990 upon his retirement as a Professor of Soil Science at the University of Guelph. He became the STA's first Executive Secretary and has played a role in most, if not all, association initiatives since that time. He was editor and a major contributor to the *Sports Turf Newsletter*, now the *Sports Turf Manager*. He edited and produced *An Athletic Field Managers' Guide* and penned the *Constructing the Sports Field* brochure and the text *Understanding Turf Management*, transferring ownership and donating all proceeds to the association. He has served on the boards of the International Turfgrass Society, the Guelph Turfgrass Institute and the Ontario Turfgrass Symposium, among others.

The Scholarship Program, funded through STA membership fees, is intended to assist students in a recognized post-secondary program in turf management with the cost of tuition, books and related expenses. To date, 26 students from across Canada have benefited from these scholarships. Applications are available online at www.sportsturfassociation.com.

The 2007 scholarship recipient is Ian Ferguson, a second year student in the University of Guelph's Diploma in Turfgrass Management Program. Born and raised in Guelph, Ontario, he will graduate this spring. Ian is on the Dean's Honours List and spent his required summer internship working with the City of Kitchener in sports field management, assisting in preparations for the World Fastball Championships in August, 2006. His essay, on pages 9-10, is required as part of the scholarship application process and is an example of the calibre of the students the STA plans to support. Congratulations Ian on being the first recipient of the Sports Turf Association Robert W. Sheard Scholarship!

Above: Robert W. Sheard (right) congratulates Ian Ferguson, recipient of the 2007 Sports Turf Association Robert W. Sheard Scholarship.

STA Member Profile

Michael Bladon • Past President

1. You were president of the Sports Turf Association from its inception in 1987 until 1989. What was your role in the turfgrass industry at that time?

At the time I was president of the Sports Turf Association, I was with the Grounds Department at the University of Guelph. Included in that role was the maintenance of 17 acres of athletic fields. I came from Regina, SK, where I was involved with the Wascana Centre Authority, a 2,200 acre parks system where once again part of the job was the maintenance and care of athletic fields. I am retired but still enjoy contact with the STA.

2. What was the biggest challenge in your job at that time?

Keeping people off fields when they were frozen and on warm spring days before they were ready for play, and the old one of two many games scheduled too close together.

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

The compliments on occasion from user groups made the work worthwhile.

4. What was the biggest misconception about your job?

That we were sitting by the phone waiting for work.

5. What is your educational/employment background?

I am a graduate of the Niagara Parks Commission School of Horticulture. On leaving there I was employed in large landscaping – dam sites in Quebec, Trudeau Airport in Montreal, anything over $5000. I then established a large tree farm in Cambridge where people would come and order trees for their needs 2-5 years later. The trees were then balled, burlapped and shipped by company truck

to their site. After that, I went to Wascana as an area foreman for six years which is where I met my wife. Then in 1969 I moved to the University of Guelph.

6. Tell us about your family.
I have an extremely supportive wife, one daughter and one son. My wife is a nurse, our son is employed in the horticulture industry and our daughter works in the university system.

7. What do you enjoy doing now that you are retired? Hobbies, favourite past times?
I enjoy volunteering with Habitat for Humanity, the local theatre in various jobs, and am now helping prune an orchard for a non-profit organization. I enjoy painting in oils when I make the time.

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 changed in terms of methods employed in maintenance and construction. I believe that as an association we have helped initiate those changes through books, a newsletter, and single information sheets. User groups are also becoming more knowledgeable and more vocal when field conditions are poor or unsafe.

9. What do you consider to be the biggest benefit of being a member of the STA?
There are several – the newsletter and books that keep one current, field days and conferences each year are both educational and the networking which occurs is invaluable.

10. What would your advice be for current and future presidents of the STA?
Keep current and when attracting new board members ensure they are given a job to do on behalf of the association. As a niche organization there is a need to be vigilant and to continue to plan as to where the association is going and what it must accomplish to reach those goals. Do not back away from change, plan for it and embrace it.

WEAR TOLERANT GRASSES FOR COLD CLIMATE FIELDS

M.A. ANDERSON AND J.B. ROSS, PRAIRIE TURFGRASS RESEARCH CENTRE, OLDS, ALBERTA

Summary

This trial was initiated to examine the effects of traffic on various grasses for sports fields in a cold climate. Two locations were seeded in 2003, one in Calgary and one in Edmonton. The Calgary site was seeded in late June, and under irrigated conditions, established normally. The Edmonton site was seeded in early September on an unirrigated site. Due to drought stress in 2004 and physical damage from construction equipment working in the area, this site was abandoned in the spring of 2005.

At the Calgary site, athletic events were initiated in the fall of 2004. The plots endured moderate to heavy traffic from mid-August through to the end of October. Cleat injury was visible throughout the site. Damage ranged from moderate shearing of the above ground plant portion (verdure) to the more severe physical up rooting of the plants.

The tall fescue plots exhibited more physical uprooting than the other grasses and the bare patches created in the fall of 2004 required most of the season to fill-in. The perennial ryegrass, Kentucky bluegrass and the sports field mix plots successfully recovered from traffic damage and were rated as acceptable in overall turf quality. The *Poa supina* mix showed the greatest improvement over the course of the season and scored the highest in overall turf quality.

Introduction

During the summer of 2001, the Prairie Turfgrass Research Centre conducted a site visit to the County of Strathcona (Sherwood Park, Alberta) to examine the condition of their sports fields and to assist in the development of a long-term plan for their improvement. Many of the high use fields were characterized by bare areas and thin turf that was a result of extremely high levels of traffic and was exacerbated by drought conditions that were prevalent throughout much of Alberta.

Sports participation, and in particular soccer, has increased dramatically in the last few years. These high participation levels have resulted in sports fields receiving far more traffic than the existing grasses are capable of withstanding. In addition, highly organized leagues in football, softball and baseball have also served to increase traffic on sports fields, particularly in urban areas.

Sports fields grasses in this climate are predominately Kentucky bluegrass and creeping red fescue. These grasses are considered to have only a moderate tolerance to traffic and wear (the effects of abrasive activity from foot traffic). These grasses are, however, quite cold tolerant and as a result survive Canadian Prairie winters quite well. In areas with a moderate climate, i.e. the lower mainland of British Columbia, perennial ryegrass and tall fescue are frequently used in high traffic areas due to their good wear tolerance. However, in Alberta, their lack of cold tolerance has made them unsuitable for use on sports fields or other high traffic areas.

In recent years, many new varieties of perennial ryegrass and tall fescue have been developed, but have never been tested for their cold tolerance. As there are often differences in cold tolerance between varieties, some of these new wear tolerant perennial ryegrasses or tall fescues may have better cold tolerance. In addition, other grasses, such as *Poa supina*, have been successfully used in sports fields in other parts of North America due to their good recovery from traffic but have not been adequately tested for their cold tolerance.

The objective of this trial is to develop additional information regarding wear and cold tolerant grasses that can be used on sports fields.

Specific Objectives of This Trial

- Screen new species and varieties of grasses for improved cold tolerance.
- Evaluate the most promising cold tolerant species and varieties for their wear tolerance and turfgrass quality under field conditions.
- Evaluate these cold tolerant grasses in different climate zones throughout the province.
- Evaluate mixtures of the best cold and wear tolerant grasses from the field study.

Methodology – Initial Screening

A preliminary screening of 48 grass cultivars for cold tolerance was conducted in order to identify the most suitable cultivars for field-testing. Grasses were grown in the greenhouse and then were subjected to a standard freeze test to determine their relative hardiness levels (Table 1). Twenty-one grasses were chosen for the field study component of this trial. In addition, *Poa supina*, a *Poa supina* and Touchdown Kentucky bluegrass mix, and the City of Calgary standard sports field mix were added.

Methodology – Field Study

Plots that measured 1.5 by 2 metres were arranged in a randomized complete block design (RCBD) and replicated four times. The Calgary site was seeded June 30, 2003, and the Edmonton site was seeded September 3, 2003. Seeding rates were 0.5 kg/100 m^2 for Kentucky bluegrass, and 3.2 kg/100 m^2 for the tall fescue and perennial ryegrasses. The plots were seeded by hand using a shaker bottle and were then raked lightly to ensure good seed to soil contact. Irrigation was available at the Calgary site, while the Edmonton site relied solely on natural precipitation.

Over the course of the 2004 season, poor seed germination combined with some physical damage to the plots as a result of further construction at the Edmonton site left most of the turf plots sparse and patchy. After the initial spring rating of 2005, the stands of turf were deemed as not acceptable and the collection of data for this site was discontinued.

At the Calgary site, athletic events were conducted on the turf in the fall of 2004.

The plots endured moderate to heavy traffic from mid-August through to the end of October. The site was routinely mowed at a height of 6.25 cm (2.5") and regularly fertilized at a rate of 0.5 kg N/100 m^2 (1b N/1000 ft^2) per growing month. Irrigation was carried out to prevent moisture stress.

Following National Turfgrass Evaluation Program (NTEP) protocols, the overall appearance of the turf plots was assessed. Three turf quality factors, colour, density and area coverage, were evaluated on a monthly basis from early May through to mid-October.

The colour factor subjectively evaluated the uniformity and intensity of the colour displayed by the turf. To ensure that the turf colour was representative of the cultivar's genetic potential and not as a result of an environmental stress on the turf, only actively growing turf was rated. A 1 to 9 scale was used to rate the spring green-up and seasonal colour of each plot. Cultivars with a uniform dark green colour received scores ranging from 6 for an acceptable colour to 9 for turf with outstanding colour. Cultivars displaying weak or chlorotic turf colour were scored lower.

Density, the second quality factor, subjectively evaluated shoot and tiller production. The 1 to 9 scale was used to rate each plot. Cultivars which developed a thick tight knit turf surface received scores ranging from 6 for an acceptable density to 9 for a superior turf. Cultivars associated with a weak or thin turf stand were scored lower.

The final quality factor area cover subjectively evaluated the vigour of turf. Again the 1 to 9 scale was used to rate each plot. Cultivars with a thick competitive turf cover received scores ranging from 6 for an acceptable area cover to 9 for superior area coverage. Cultivars affected by weed encroachment and/or the presence of bare patches were scored lower.

To compare the overall turf quality of the cultivars, the average of the combined colour, density and area cover scores for each plot was calculated and statistically analyzed.

Results and Discussion

Initial Screening for Winter Hardiness

All of the Kentucky bluegrasses selected for this study had winter hardiness levels >-26°C, which is considered good (Table 1). Winter hardiness levels for the perennial ryegrasses were -17°C, while the tall fescues had winter hardiness levels of -22°C. These values would be considered moderate to poor winter hardiness levels. *Poa supina* values were not determined.

Overall Traffic Injury

Injury from football cleats was visible throughout the site in the fall of 2004. Damage ranged from moderate shearing of the verdure (above ground plant portion) to more severe physical up rooting of the plants. The turf overwintered in this worn condition as the turf damage was not repaired. With no athletic events played on the turf surface in 2005, the turf was allowed to recover. The turf damage within each plot was left for the entire season in order to evaluate the recovery rate of the grasses.

Table 1. List of grasses seeded and their relative winter hardiness level.

Grass Species	Cultivar	Relative Hardiness (LT_{50} Values)
Kentucky Bluegrass	SR 2284	>-26°C
Kentucky Bluegrass	Showcase	>-26°C
Kentucky Bluegrass	Award	>-26°C
Kentucky Bluegrass	Total Eclipse	>-26°C
Kentucky Bluegrass	Tsunami	>-26°C
Kentucky Bluegrass	America	>-26°C
Kentucky Bluegrass	Langara	-26°C
Kentucky Bluegrass	Moon Shadow	-26°C
Kentucky Bluegrass	Touchdown	>-26°C
Kentucky Bluegrass	Rambo	>-26°C
Kentucky Bluegrass	Argyle	>-26°C
Perennial Ryegrass	Fiesta 3	-17°C
Perennial Ryegrass	Pennfine	-17°C
Perennial Ryegrass	Pick RC2	-17°C
Perennial Ryegrass	PR A-97	-16°C
Tall Fescue	Grande	>-22°C
Tall Fescue	SR 8600	>-22°C
Tall Fescue	Arid 3	>-22°C
Tall Fescue	Pixie	>-22°C
Tall Fescue	Mustang II	>-22°C
Tall Fescue	Watchdog	>-22°C
Poa supina	Supranova	Unknown
Poa supina mix	10% Poa supina	Unknown
	90% Touchdown (Kentucky Bluegrass)	>-26°C
Sport field mix	25% Award (Kentucky Bluegrass)	>-26°C
	25% Liberator (Kentucky Bluegrass)	Unknown
	25% Odyssey (Kentucky Bluegrass)	>-26°C
	25% Champion (Perennial Ryegrass)	Unknown

Kentucky Bluegrass Ratings

Spring Greenup

Two separate rating dates, May 5 and 19, were conducted in order to determine the transition from winter dormancy to active spring growth. An analysis of the turf colour data for the first sampling date revealed no significant difference in early spring greenup between the cultivars (Table 2).

By the second sampling date there was a statistical difference in spring colour between the cultivars (Table 2). Cultivar SR228 scored the highest for spring greenup, while Rambo scored the lowest (Table 2).

Summer Colour

The summer rating revealed a statistical difference between the highest scoring cultivars: Showcase, Tsunami and SR228 and the lighter coloured cultivars: Langara, America, Total Eclipse and Rambo (Table 2).

Fall Colour

The Kentucky bluegrass cultivars showed good colour retention under the cooler and frost-prone conditions of October. The cultivars Showcase, Tsunami and Moon Shadow scored the highest for fall colour, while the turf colour of Total Eclipse and Rambo were the lowest (Table 2).

Turf Density

Shoot density can vary greatly over the course of the growing season. While the scores improved from the spring to the summer rating period, no significant difference in turf density was detected between the cultivars over the entire season (Table 3).

Area Cover

With damage sustained by the turf in the fall of 2004, the spring area cover rating was generally lower and considered unacceptable. By the summer rating period, plots had recovered and the bluegrass rated higher. There were no statistical differences between the cultivars for area cover at any time during the growing season (Table 3).

Turf Quality

A seasonal mean combining the three quality factors was calculated for each of the cultivars. The cultivars were ranked from highest to lowest based on overall turf quality (Table 3).

Perennial Ryegrass Ratings

Spring Greenup

An analysis of the turf colour for spring greenup revealed no significant difference between the cultivars. Fiesta 3 scored the highest for spring greenup but was not significantly better than the other ryegrasses (Table 4).

Summer Colour

The cultivar PR A-97 recovered from a slow spring start to receive the highest colour score for the summer rating period (Table 4). Again the analysis of the turf colour data revealed that the summer colour of the cultivars was not significantly different from each other (Table 4).

Fall Colour

The perennial ryegrass cultivars showed excellent colour retention under the cooler conditions of the fall. Fiesta 3 and Pick RC2 scored the highest for fall colour (Table 4). An analysis of the fall turf colour data revealed that there was no statistical different between the ryegrass cultivars.

Turf Density

The density of the ryegrasses was very similar to each other. An analysis of the turf density data revealed that the cultivars were not statistically different from each other (Table 5).

Area Cover

The spring area cover of the ryegrasses was open and not tightly knit. The bare patches created by the traffic in the fall of 2004 required most of the season to fill-in. Pennfine generated the best area coverage for both the summer and fall rating dates. An analysis of the turf area cover data revealed that the cultivars were not significantly different from each other (Table 5).

Turf Quality

A seasonal mean combining the three quality factors was calculated for each of

Table 2. Kentucky bluegrass turf colour, Calgary 2005.

	RATING PERIOD (1-9 SCALE)				
Cultivar	**Early Spring**	**Spring**	**Summer**	**Fall**	**Seasonal Average**
Showcase	4.3a	5.3ab	6.5a	6.5a	6.1
Tsunami	4.5a	5.0ab	6.5a	6.0ab	5.8
SR228	4.0a	5.5a	6.5a	5.3bc	5.8
Moon Shadow	4.3a	5.0ab	6.0ab	5.8abc	5.6
Award	4.0a	5.3ab	6.0ab	5.5bc	5.6
Touchdown	4.5a	5.0ab	6.0ab	5.5bc	5.5
Argyle	4.0a	4.8bc	6.0ab	5.3bc	5.4
Langara	4.3a	5.0ab	5.8bc	5.5bc	5.4
America	4.0a	4.8bc	5.8bc	5.3bc	5.3
Total Eclipse	4.0a	4.8bc	5.5bc	5.0c	5.1
Rambo	3.5a	4.3c	5.3c	5.0c	4.9
$LSD_{0.05}$ =	n/s	0.6	0.5	0.8	

Table 4. Perennial ryegrass turf colour, Calgary 2005.

	RATING PERIOD (1-9 SCALE)				
Cultivar	**Early Spring**	**Spring**	**Summer**	**Fall**	**Seasonal Average**
Fiesta 3	4.3a	5.0a	6.0a	6.3a	5.8
PR A-97	3.5a	5.0a	6.3a	6.0a	5.8
Pick RC2	4.0a	4.8a	6.0a	6.3a	5.7
Pennfine	4.0a	4.8a	6.0a	5.8a	5.5
$LSD_{0.05}$ =	n/s	n/s	n/s	n/s	

Table 6. Tall fescue turf colour, Calgary 2005.

	RATING PERIOD (1-9 SCALE)				
Cultivar	**Early Spring**	**Spring**	**Summer**	**Fall**	**Seasonal Average**
SR8600	3.8a	5.5a	6.5a	5.5a	5.8
Grande	3.8a	5.5a	6.0a	5.5a	5.7
Mustang II	3.5a	5.3a	5.8a	5.0a	5.4
Pixie	3.0a	5.0ab	5.5a	5.0a	5.2
Watchdog	3.8a	4.3b	6.0a	5.3a	5.2
Arid 3	3.5a	4.8ab	5.5a	5.0a	5.1
$LSD_{0.05}$ =	n/s	0.7	n/s	n/s	

Table 8. Comparison of species for turf colour, Calgary 2005.

	RATING PERIOD (1-9 SCALE)				
Cultivar	**Early Spring**	**Spring**	**Summer**	**Fall**	**Seasonal Average**
Perennial ryegrass	4.3a	5.0a	6.0ab	6.3a	5.8
Sports field mix	4.0a	5.3a	6.5a	5.5b	5.8
Ken. bluegrasses	4.3a	5.0a	6.0ab	5.5b	5.5
Tall fescue	3.8a	5.3a	6.0ab	5.0bc	5.4
Poa supina mix	3.0a	4.8a	5.5bc	5.0bc	5.1
Poa supina	3.0a	4.3a	5.3c	4.8c	4.8
$LSD_{0.05}$ =	0.6	n/s	0.5	0.5	

**** Values that have the same letter as a suffix are not significant from each other.***

the cultivars. The cultivars were ranked from highest to lowest based on overall turf quality (Table 5).

Tall Fescue Ratings

Spring Greenup

An analysis of the turf colour data for spring greenup revealed no significant colour difference between the cultivars. By the second sampling date there was a statistical difference in spring greenup between the cultivars. Grande and SR8600 scored the highest for spring greenup while Watchdog scored the lowest (Table 6).

Summer Colour

SR8600 scored the highest for turf colour at the summer rating period. An analysis of the summer turf colour data revealed that the cultivars were not statistically different from each other (Table 6).

Fall Colour

The tall fescues cultivars also showed good colour retention under the cooler conditions of the fall. Once again the analysis of the fall turf colour data revealed that the cultivars were not statistically different from each other (Table 6).

Turf Density

The density of the tall fescues was very similar to each other. An analysis of the turf density data revealed that the cultivars were not significantly different from each other (Table 7).

Area Cover

The tall fescue plots exhibited more physical uprooting than the other grasses and the bare patches created in the fall of 2004 required most of the season to fill-in. An analysis of the turf area cover data revealed that the cultivars were not significantly different from each other (Table 7).

Turf Quality

A seasonal mean combining the three quality factors was calculated for each of the cultivars. The cultivars were ranked from highest to lowest based on overall turf quality (Table 7).

Comparing the Grass Species

When it comes to evaluating turf solely based on turf quality the general rule is that comparing ratings within species is relative, while comparing ratings between species and blends is not. Hopefully, the strengths of each of the species and the blended mixes will become more apparent after a head to head comparison is made for each of the three turf quality factors.

While the cultivars within each grass species tended to be very similar to each other during the 2005 season, some interesting trends were seen when the species and turf mixes were compared with each other.

Spring Greenup

The initial spring greenup of the *Poa supina* and the *Poa supina* mix scored significantly lower than the Sports Field Mix and the other turf species (Table 8). An analysis of spring turf colour data for the second sampling date revealed no significant difference in spring colour between the turf treatments.

Summer Colour

The summer colour data indicates that there was a significant difference in turf colour between the species. The genetically lighter green displayed by the *Poa supina* was significantly lower when compared with the darker green colour of the other grasses (Table 8).

Fall Colour

All the turf species showed good colour retention under the fall conditions. The perennial ryegrasses scored the highest and were statistically better for fall colour than the other grasses (Table 8).

Turf Density

An analysis of the spring turf density data revealed no significant difference in turf density between the treatments (Table 9).

After recovering from a slow start in the spring, the *Poa supina* mix with 90% Kentucky bluegrass (cultivar Touchdown) produced the best density for the summer rating (Table 9).

The summer turf density score of the *Poa supina* mix was significantly better than the scores received by the Sports Field Mix, the monoculture stand of tall fescue and the monoculture stand of *Poa supina*. (Table 9)

By the fall rating date the turf density of *Poa supina* mix scored significantly higher than the Sports Field Mix, the monoculture stand of Kentucky bluegrass, the monoculture stand of tall fescue and the monoculture stand of *Poa supina* (Table 9).

Area Cover

The spring area cover ratings in 2005 were not statistically different between the grass species (Table 9). The turf damage, sustained in the fall of 2004, was still very evident within the plot area. The impact of the play was more evident on the tall fescue than any other species. Large bare patches in the fescue turf cover were present throughout the trial.

By the summer rating date, area cover of the *Poa supina* mix significantly improved (Table 9). The fall rating found the area cover of the *Poa supina* mix to be significantly better than the remaining treatments (Table 9).

Table 3. Kentucky bluegrass turf density (D) and area cover (AC), Calgary 2005.

	RATING PERIOD (1-9 SCALE)						TURF**
Cultivar	Spring D	Spring AC	Summer D	Summer AC	Fall D	Fall AC	QUALITY
Showcase	4.5a	4.0a	6.0a	5.5a	5.8a	5.5a	5.3
Moon Shadow	4.3a	4.5a	6.0a	6.0a	5.8a	5.3a	5.2
Tsunami	3.8a	3.8a	6.3a	5.3a	5.8a	5.5a	5.2
Touchdown	4.5a	4.3a	6.0a	5.0a	5.3a	5.5a	5.1
Langara	4.3a	4.0a	6.3a	5.5a	5.8a	5.8a	5.1
Award	4.8a	4.3a	5.3a	5.3a	5.3a	5.8a	4.9
Argyle	3.8a	3.5a	5.5a	5.3a	5.0a	5.5a	4.9
Total Eclipse	3.8a	4.0a	5.5a	4.8a	5.3a	5.0a	4.8
America	4.0a	4.0a	5.8a	5.0a	5.5a	4.8a	4.8
SR228	3.5a	3.5a	5.5a	4.5a	4.8a	5.0a	4.7
Rambo	4.0a	4.0a	5.8a	4.8a	5.3a	5.0a	4.7
$LSD_{0.05}$ =	n/s	n/s	n/s	n/s	n/s	n/s	

Table 5. Perennial ryegrass turf density (D) and area cover (AC), Calgary 2005.

	RATING PERIOD (1-9 SCALE)						TURF**
Cultivar	Spring D	Spring AC	Summer D	Summer AC	Fall D	Fall AC	QUALITY
Fiesta 3	4.5a	4.3a	6.0a	5.0a	6.0a	5.0a	5.4
Pennfine	3.5a	3.8a	5.8a	5.8a	5.5a	5.8a	5.2
Pick RC2	4.0a	3.8a	5.8a	5.0a	5.8a	5.0a	5.2
PR a-97	4.0a	4.0a	5.8a	5.3a	5.3a	5.3a	5.2
$LSD_{0.05}$ =	n/s	n/s	n/s	n/s	n/s	n/s	

Table 7. Tall fescue turf density (D) and area cover (AC), Calgary 2005.

	RATING PERIOD (1-9 SCALE)						TURF**
Cultivar	Spring D	Spring AC	Summer D	Summer AC	Fall D	Fall AC	QUALITY
SR8600	3.5a	3.5a	5.8a	5.0a	5.0a	5.0a	5.1
Grande	3.8a	3.8a	5.3a	4.8a	5.0a	5.0a	5.0
Watchdog	3.5a	3.5a	5.5a	5.0a	5.3a	4.8a	4.8
Arid 3	3.5a	3.0a	5.3a	4.8a	4.5a	4.8a	4.6
Pixie	3.0a	2.5a	5.5a	5.0a	4.8a	5.3a	4.6
Mustang II	3.3a	3.5a	5.0a	4.5a	4.5a	4.5a	4.6
$LSD_{0.05}$ =	n/s	n/s	n/s	n/s	n/s	n/s	

Table 9. Comparison of species for turf density (D) and area cover (AC), Cal. 05.

	RATING PERIOD (1-9 SCALE)						***	SA-
Cultivar	Spring D	Spring AC	Summer D	Summer AC	Fall D	Fall AC	SA-D	AC
P. supina mix	3.5a	3.5a	6.5a	6.3a	6.3a	7.0a	5.4	5.6
Per. ryegrass	4.0a	4.3a	6.0ab	5.3a	5.8ab	5.5b	5.3	5.0
Ken. blue.	4.3a	4.0a	6.0ab	5.0a	5.3bc	5.5b	5.2	4.8
Sport field mix	4.3a	3.8a	5.8b	5.3a	5.5bc	5.3b	5.2	4.8
Poa supine	3.8a	3.8a	5.5b	4.8a	5.3bc	5.2b	4.9	4.6
Tall fescue	3.5a	3.3a	5.5b	5.0a	5.0c	5.0b	4.7	4.4
$LSD_{0.05}$ =	n/s	n/s	0.6	n/s	0.6	0.8		

**** Values that have the same letter as a suffix are not significant from each other. ** Mean of the 3 factors for the season. *** SA = seasonal average.***

Turf Quality

A mean for the three quality factors for each of the turf treatments was calculated for each rating period. The treatments were ranked from highest to lowest based on overall turf quality.

Despite the damage generated by the traffic over the turf surface in fall, all the grasses in trial successfully made the transition from winter dormancy to live active growing stands of turf in the spring. The spring turf quality rating between the species was not significantly different (Table 10).

All the turf plots showed signs of improvement over the course of the season. But it was the aggressive area cover ratings that were produced by the *Poa supina* mix over the summer and fall which was most impressive. The blend of *Poa supina* with the Kentucky bluegrass cultivar Touchdown overcame the low scores received for turf colour of the *Poa supina* to produced a turf stand which scored the highest in overall turf quality (Table 10).

Table 10. Comparison of species for overall turf quality, Calgary 2005.

Cultivar	RATING PERIOD Spring	Summer	Fall	Overall Turf Quality
	Mean of 3 Quality Factors			
Poa supina mix	4.0a	6.1a	6.1a	5.4
Perennial ryegrass	4.3a	5.7ab	5.7ab	5.2
Sports field mix	4.4a	5.8ab	5.4bc	5.2
Ken. bluegrasses	4.4a	5.7ab	5.4bc	5.2
Tall fescue	3.9a	5.4bc	5.0c	4.8
Poa supina	3.9a	5.1c	5.2c	4.7
$LSD_{0.05}$ =	n/s	0.6	0.4	

**** Values that have the same letter as a suffix are not significant from each other.***

Discussion

Turf injury was visible throughout the site. Damage ranged from moderate shearing of the verdure to the more severe physical up rooting of the turf plants. While all the plots showed some effects from the traffic, the tall fescue plots exhibited more physical uprooting than the other grasses.

Despite overwintering in a stressed and worn condition, it appeared that the turf stands were not significantly affected by cold winter temperatures as all of the grasses showed good transition from winter dormancy to active spring growth. ♦

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