David Phillips recounts recent major Canadian weather events.

In 1996, the Saguenay flood involved as much water as would flow over Niagara Falls in two months - 12,000 people had to leave their homes and several were killed. The Red River Flood in 1997 was the worst in 150 years. It could have resulted in $500 million in damages if it were not for the spillway and the work of the military and citizens. The ice storm in January 1998 affected an area from Kingston to New York - 1,000 metal transmission towers came down as well as 30,000 wooden power poles and enough wire was replaced to go around the world three times. The landscape never looked more beautiful, but businesses were crippled and transportation systems paralyzed.

More recently in January 2000, Toronto experienced the equivalent of three months of snow in 14 days. Mayor Mel Lastman called in 400 troops. Cost to the city was $70 million in snow removal and $2 million in lost revenues from parking tickets. Also in 2000, the Pine Lake tornado in Alberta with winds of 330 km per hour killed three people and injured 114. This was the fifth worst tornado and the first death from one in Canada. Trailers blew into the lake, fish were left on land and golf balls were embedded in trees. Overall, we had a warm summer, but it was warmer in Nunavut. Currently, there is a cool low over Hudson's Bay that is giving us this winter's seemingly drastic "blast from the past."

Should we be concerned? Weather extremes are hard to plan for. Because of global warming, 22 years in a row have been warmer than any in the past. Sea levels are rising. In the Arctic, there is water - representing an area half the size of Lake Superior - at the North Pole. Thirty billion dollars have been spent on weather related problems. We now have more property to damage and more people to contend with (6 billion today versus 1 billion in 1900). More people are living in flood plain areas and more are residing in earthquake prone zones.

David stated that as humans, we are all bit players in the earth's drama. When you change the climate, you change the weather. We have to remember that extremes are normal - they have happened before. El Nino can change 3/4 of the world's climate. In 1912, a Regina cyclone was the worst in Canadian history.

So, what's in store for the future? One hundred year weather observations give credence to accepted models. Ontario weather will be more like the weather that is typically 800-1,000 km south of us. We will have a longer growing season with 6% more heat units and 3-5 weeks more frost-free days. Summers will be 4-5° hotter and winter temperatures will increase by 4-7%. This will translate into lower heating costs and changing recreation habits. There will be fewer rain days but more heavy falls of rain. Extremes with more cloud and more evaporation will be the norm and summer weather will be much more severe. There will be a decrease in soil moisture and stream flow. All of this change, while gradual, will probably occur in the next 100 years. How much of it will you be around to experience?
Grass Tennis Courts
NEW BOOK TITLE FROM THE SPORTS TURF RESEARCH INSTITUTE

STRI announces their latest title – Grass Tennis Courts: How to Construct and Maintain Them. Published in association with the All England Lawn Tennis Club, Wimbledon, this new title is the first book ever dedicated to the construction and maintenance of grass tennis courts for all levels of the game. It provides comprehensive coverage of modern scientifically based natural turf practices, showing how they can be applied to the production and management of a natural turf surface for tennis.

Eddie Seaward, Head Groundsman at Wimbledon, has made a major contribution to the book, producing one of the sections and loaning a number of photographs for publication.

Published in hardcover, the book contains 155 pages divided into 20 chapters, plus bibliography and foreword by Roger Ambrose, Club Secretary, at Wimbledon. Produced in colour, it includes 70 photographs. Price £22.50 plus £5.00 post and packing (approximately $60 CND), the new title is available from STRI’s specialist mail order book service - Turfgrass Titles of the World (http://www.stri.co.uk). ♦

Editor’s Note: The copy provided to the STA will be donated to and available for reference purposes in the GTI Library.

Turf News Brief
NEW GROUP AIMING TO BOOST CRICKET’S PROFILE

CANADA AND THE United States are among 14 countries in the western hemisphere that will form a new cricket body aimed at promoting the game.

The Cricket Association of America will begin operating in March and feature 14 countries. The group also includes the Bahamas, Bermuda, Brazil, Argentina, Chile as well as entries from the West Indies.

Patrick Rousseau, chairman of the West Indies Cricket Board, said the new association will work with cricket organizations in Asia and Africa to improve the game and increase its popularity in countries where cricket is not played.

Cricket, played with a passion in Britain and its former colonies, has been damaged the past year after Indian police uncovered a match-fixing scandal involving players from almost all the cricket-playing countries. ♦

— Associated Press, The Kitchener-Waterloo Record, February 8, 2001

DEADLINE: APRIL 14
Content for June issue

STA Membership Fees
Thank you to all members renewing in 2001! Invoices for membership fees will be mailed at the end of March and are due and payable on or before May 1st.

Please take a moment to verify your information as it appears on the memo accompanying your Membership Invoice. The Membership Roster is compiled from this information entered in our database. For questions with regard to your renewal, please contact Lee Huether at the STA office.
James (Jim) Boyce died on August 29. He graduated from the University of Toronto (OAC) in 1932 with his B.Sc.A. He worked for the next five years at the Central Experimental Farm in Ottawa as a graduate assistant in turfgrass and pasture research, then he moved on to the New Jersey Experimental Station as a research assistant in turfgrass management under Dr. H.B. Sprague.

Jim received his M.Sc. from Rutgers University in 1939 and returned to Ottawa where he directed the Canada Department of Agriculture plant introduction and turfgrass research programs until 1962. While with the Department, Jim was intimately associated with the development of such turfgrass varieties as Delta Kentucky bluegrass, Chieftain Canada bluegrass, Duraturf creeping red fescue, Norlea perennial ryegrass, and several forage type cultivars. In addition to the desirable features of mildew resistance in Delta and winter hardiness in Norlea, all cultivars produced by the Forage Crops Division had a common characteristic, high seed production.

Following work with the government, Jim became self-employed as a consulting agronomist. He developed correspondence courses for the University of Guelph and taught at Algonquin College in Ottawa. From 1970-73, he was Executive Director of the Canadian Golf Superintendents Association and editor of “The Greenmaster.” Jim was also Canadian director of the Musser International Turfgrass Foundation for several years. He was closely associated with Rothwell Seeds Limited and with its president Norman Rothwell. On behalf of Rothwell Seeds, he was responsible for securing licensing or registration for sale in Canada varieties such as Penneagle and Prominent creeping bentgrasses; Adelphi, Argyle Classic, Eclipse, Glade, Harmony, Midnight, Regent, Scenic and Welcome Kentucky bluegrasses; Ensylva creeping red fescue; Barfalla and Luster chewings fescue; and All Star and Pennant perennial ryegrasses.

Jim was a founding member of the Sports Turf Association. At the first meeting he stated, “This is an idea whose time has come.” May he rest in peace.

PLEASE NOTE

The opinions expressed in articles published in *Sports Turf Manager* are those of the author and not necessarily those of the STA, unless otherwise indicated.
I wish all our members the best the new year has to offer and hope March finds you all well. After what seemed like an extreme December, January certainly cooled its heels, at least in the snow department. Hopefully you were not caught by the early arrival of winter and were able to complete your fall clean ups and other “winter ready” details on your turf.

OTS 2001 was, as in years past, an information success. Michael Bladon, our editor, attended all sessions and will report in this issue of Sports Turf Manager. One of my favourites was the weather session. It is amazing how soon we forget past weather extremes. Thank you to Ursula Rodrigues and congratulations on your retirement, we wish you all the best. Good luck to Peggy Nagle as she continues at the helm.

Congratulations to the Jeopardy winners of 2001, the Southwestern Ontario Team of Mark Hagen, Kubota Canada Ltd., Jeff Cunningham, City of Mississauga and Ross Tucker, City of St. Thomas. The questions flew fast and furious with lots of laughs emanating from the audience. Thank you Michael Bladon for hosting and Andrew Gaydon for providing the light system.

Hot off the presses, Bob Sheard’s book, Understanding Turf Management is now available (see the order form below). Thank you Bob for your dedication, and once again to the sponsors for enabling us to offer this text at an unbelievably low price.

Please take the time to read the Minutes of the Annual Meeting included with this issue. You will be impressed with the amount achieved by the Sports Turf Association last year. Included in these accomplishments is the new strategic plan, A New Millennium – Toward 2003. This document will be printed in the 2001 Membership Roster.

March will be a busy month for the Association. On March 6th, Pam Charbonneau, Gord Dol and myself will be participating in a joint ORFA/STA workshop in Sudbury and on the 28th in Clarington. Also in March, I will be participating in the Atlantic Turfgrass Conference in Halifax, Nova Scotia, on the 21st. For information on any of these events, please contact Lee Huether at the STA office, telephone (519) 763-9431, email sta@gti.uoguelph.ca.

When you read this, hopefully spring will be on the horizon and your thoughts will be on turf!

President Jane Arnett-Rivers presents Dr. Bob Sheard, STA Director and author of Understanding Turf Management, with the first copy of his book (at the STA Annual General Meeting, January). Please see order form below for purchase details or contact Lee Huether at the STA office.

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**NOW AVAILABLE!**

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Websites for Weather
TERRY GILLESPIE, LAND RESOURCE SCIENCE, UNIVERSITY OF GUELPH

If you use your web browser to search for the word "weather," you will find hundreds of sites listed. So the few sites I've chosen for discussion in this article will just get you started. There are many additional links to follow from these sites, and I encourage you to keep on weather surfin' and have fun!

I've divided my suggested sites into three groups. The first group called "Outlooks and Past Information," includes sites that cover time scales that are one week or longer into the future or the past. The second group I have labelled "Forecasts," and these sites cover just a few days into the future. Finally, I'll suggest a beautifully illustrated "Learning Site" if weather turns you on and you would like to know more about how it works!

Outlooks and Past Information

Start by browsing www.cmc.ec.gc.ca.
1. Click on Forecasts: Charts and Bulletins, then scroll down the next page to near the bottom of the page, and click on Monthly. Here you will find a map of the forecast temperatures for the next 30 days (updated on the 1st and 15th of the month). The map is divided into three categories: Above Normal, Near Normal, and Below Normal. The interpretation of these categories is as follows.

The past data from the same month over each of the past 30 years is divided into three groups; the warmest one-third, the middle one-third, and the coolest one-third. If the forecast map says "Above Normal," it means the temperatures are expected to be like one of the past years in the warmest one-third. Or said another way, forecast temperatures are expected to be warmer than any of the past years that landed in the middle one-third. Similarly, a "Near Normal" forecast means temperatures are expected to be like the middle one-third of past years, or a "Below Normal" forecast suggests an upcoming month like one of the previous coolest one-third. In item 2, below, I'll show you where to get an idea of what temperatures actually occurred in the warmest, middle and coolest thirds in the past.

2. Go back to the bottom of the previous page (click the Back button of your browser) and click on Seasonal instead of Monthly. This will open a page that gives you the option of a Temperature Anomaly map or a Precipitation Anomaly map. These maps are divided into three equal categories of "Above," "Normal" and "Below" corresponding to the warmest or wettest, middle, and coolest or driest thirds of about the past 30 years, just as for the monthly temperature forecast described above in item 1. You can look at the current seasonal forecast, or forecasts for future seasons.

To get an idea of what the past temperature or precipitation values looked like in the top, middle and lower thirds, go to www.msc-smc.ec.gc.ca/ccrm/bulletin/archive.htm. This site will lead us to the seasonal temperatures and precipitation values over about the last 50 years in
ranked order. These lists don’t quite match the 30 year periods that the upper, middle and lower thirds are based on and they are for Canada as a whole, but if you break this list into thirds (groups of 18 years) you will get a good idea of what Above, Normal, and Below mean. Once you get to the archive site, do the following:

• in the table, click on the most recent past season of interest (eg. Winter 1999/2000) if you are interested in winter season data.
• in the first paragraph on the page that comes up, click on winter temperature departure tables.
• below the new table that appears, click on Full Period. Now you will see the ranked data for the past 53 years.

3. Interested in Climate Normals? For a list of stations and what weather variables are observed, go to: www.cmc.ec.gc.ca/climate/normals/epronvdx.htm. Click on the province of interest. Click on the new page, then click on the station of interest.

Weather Forecasts

Here we start by going to the most popular Environment Canada site: weather.ec.gc.ca.

4. When you arrive at the home page for the weather site, click on Current Conditions and Local Forecasts. Then on the next page, click on your province of choice and a list of cities will appear. Click on your city of choice. This will get you to weather forecasts that go out to the 5th day into the future and are frequently updated.

5. Go back to the home page for the weather site and you can get a quick overview of the weather at the other places in Canada by clicking on the National Forecast Map. This map shows the major pressure systems and fronts (borders between mild/warm, cool/cold air masses). Maps like this are used by meteorologists to prepare the forecasts seen in item 4 above, and you can look to the west of your location on this map to see what might be coming down the pipe in the next few days.

6. Return again to the home page for the weather site and click on Canadian Radar (or RADAR images at the bottom left of the page). Here you find you can choose various regions across Canada, and within each region you can choose a composite image of all stations or the individual station that suits your location best. This will give you a recent still image of precipitation in the region and allows you to spot whether a band of precipitation is about to arrive or depart your location. It’s usually helpful to view the radar image with the map from item 5 in mind because the precipitation is often associated with low pressure regions or weather fronts.

7. Back to the home page and click on Satellite Imagery. Again you can choose your region of interest, and you can choose 10.70 microns or Visible. The 10.70 micron image is taken with a camera that “sees” heat radiation (infra-red radiation) of much longer wavelengths than we can detect with our eyes. There is a scale along the left hand side of an image that shows colours corresponding to the temperatures at various places across the image (be alert – the colours may be reversed, so blue is warmer than red). Cloud tops will be cooler than the ground, so this image lets us spot areas of cloud during day or night. The visible image will show cloud during the daytime only, of course. At night the visible image will just be black.

The satellite page also allows you to download animations which play the last 48 images in a loop. This is a great way to see the progress of weather systems across the country.

Let’s now leave the Environment Canada site and go to the mother lode of weather information sites.

8. Who knows why someone at the city of Sarnia would set this up, but go to: www.sarnia.com/weather.

Clicking on the various entries in the tables on this page will take you to a smorgasbord of weather information, including some of the sites we have already visited above. A couple of my favorites are:

• click on Radar (second item, second row). I like the “loops” that are listed in the left hand column of the radar table that come up. These allow you to see the progress of areas and lines of precipitation and plan short term activities accordingly. Just scroll past the commercials at the top of the page that comes up, wait a bit until all the images load, and then the loop will start to play.

• go back to the Sarnia weather home page and click on Satellite, then try the USA Sat loop (last entry, top row) to see another version of an animated satellite series.

There is lots and lots more weather stuff to explore at this site!

Learning Site

If cruising the Sarnia weather site wets your appetite to learn more about how the weather works, www2010.atmos.uiuc.edu is a beautifully illustrated site to visit.

9. Click on Online Guides along the left hand side of this home page and you’ll arrive at a menu of learning modules that includes Meteorology, Remote Sensing from Satellites, Interpretation of Weather Maps, and Projects (for spouses who are teachers or science fairs for your kids).

10. Click on Current Weather on the left side of the home page, then try Surface Products. This leads to a page with many choices of beautifully illustrated surface weather maps. I like the Sea Level Pressure with Temperature and Sea Level Pressure with I-R Satellite maps that combine the pressure pattern with the temperature and cloud patterns. Or you can click on Satellite from the Current Weather page and see a variety of satellite images. The surface and satellite images can be animated by clicking the Animate, then Play buttons at the bottom of the image that comes up.

These pages have suggested only a few of the many, many weather-related sites that are on the internet. From these sites (especially the Sarnia weather site) there are lots of links to explore. Mark Twain once said, “If you don’t like the weather, just wait awhile.” Now all you have to do is left-click!

If you discover some exciting new weather site, or new uses for the weather information you find, I’d be delighted to hear from you. Send me a message at tgillesp@lrs.uoguelph.ca. Happy weather surfin’! ♠
Guidelines for Using NTEP Trial Data

KEVIN MORRIS, EXECUTIVE DIRECTOR, NATIONAL TURFGRASS EVALUATION PROGRAM

The National Turfgrass Evaluation Program (NTEP) was initiated in 1980 to coordinate uniform evaluation trials of turfgrass varieties and promising selections in the United States and Canada. “Official” tests are conducted at universities with most states evaluating at least one NTEP test. On-site tests, a cooperative effort between NTEP, GCSAA and USGA, assess varieties on golf courses. Since its inception, NTEP has collected information on more than 50 turfgrass characteristics from over 1,000 experimental and commercial varieties encompassing 17 turfgrass species. Annual progress reports containing data collected the previous year are released for each species tested. A final report containing all data collected is produced at the end of the testing period. These progress reports are available by becoming an NTEP member (a $30 annual membership fee is required) and also on our website – visit http://www.ntep.org.

The First Step

The number of experimental and commercial varieties in NTEP tests has increased greatly in the last few years (the current national perennial ryegrass test has 134 entries) making decisions about varieties more difficult for consumers. So to utilize the NTEP information most effectively, it is important to know how to correctly interpret the progress reports. Final reports are helpful because they contain four to five years of data from a completed trial. Data from the first year of a trial mainly reflects performance during establishment and early maturity.

There are tables available for this interpretation process which give facts on soil type and pH, levels of soil phosphorous and potassium, whether the test was conducted in sun or shade, the amount of nitrogen and irrigation applied and the mowing height. For golf course on-site tests, more detail is provided such as date and rate of pesticide applications, cultivation practices used and fertilization rates, products and timing. Make sure the test locations you review are managed in a similar manner as your site. For example, data from a Kentucky bluegrass test mowed at one inch and irrigated to prevent any stress would be of little value to you if your site is a non-irrigated rough.

Another table will indicate locations and data collected. This is especially helpful for monthly quality as some locations may collect data for only three to four months in a year. Then this data presented for that location is not representative of a varieties’ performance for an entire growing season. The “LSD Value” (Least Significant Difference), is a statistical tool used to determine if the difference in varieties is real or just happened by chance.

Turfgrass Quality Information

Turfgrass quality ratings are the most used and abused of all turfgrass data. They are collected monthly and are an overall visual evaluation of each grass. Quality ratings contain all the factors that affect the quality of a turf stand and include genetic colour, density, percent ground cover, disease and insect injury, heat and drought tolerance, and uniformity. Depending on your location, you should be checking the test site closest to you geographically that has similar climatic conditions. If maintained in a similar way to your site, this data will be the most meaningful for your situation.

Percent Living Ground Cover ratings are normally gathered at several locations during the spring, summer or fall seasons. They are designed to express damage caused by insects, disease, drought, etc. These ratings are useful to determine the survival of turfgrasses through various stress periods and how well the grass recovered in the fall. Certain diseases such as leafspot, red thread, dollar spot and brown patch occur quite frequently and uniformly in test plots. It is advisable therefore to track the varieties’ response to diseases over several years even though there may not be any data or indication in your geographic area. Many diseases occur infrequently or not at all in test plots. They do not distribute themselves uniformly across the test area, so it is difficult to estimate accurately either resistance or susceptibility.

Seeing for Yourself

NTEP tests are shown at field days in many states each year. This is a good opportunity to see first hand variety differences and discuss these with turfgrass researchers.

Editor’s Note: The GTI has had an NTEP trial on 134 entries of perennial ryegrass since 1999 and a Kentucky bluegrass NTEP trial in 2000 of 173 entries. If you have questions, Kevin Morris may be reached at NTEP, BARC-West, Bldg. 001, Room 245, Beltsville, Maryland 20705, phone 301-504-5125, fax 301-504-5167, email kmorris@ntep.org, website www.ntep.org.

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Turfgrass Introduced to Russia

ANDREW GAYDON, VANDEN BUSSCHE IRRIGATION AND EQUIPMENT, REPORTS ON HIS RECENT VISIT

It is sometimes not easy to appreciate what we have here in Canada until one goes to other corners of the world to see how others live.

I have traveled to various interesting places in the world to experience horticulture and agriculture, but none have intrigued me as much as my trip to Russia last September. I was given outstanding VIP treatment by the warm and generous people who were associated with a company based in Moscow called Russki Gazzoni.

Following the fall of Communism, many entrepreneurs came out of the woodwork to do their bit for Mother Russia as well as gain profit for themselves. This type of redevelopment and direction in society takes time and now after 10-12 years, changes are fast, furious and dramatic.

One area of change and improving opportunities is a landscape company called Russki Gazzoni who have developed from their small beginnings as a garden maintenance company into a large landscape company with 800 acres of sod production and tree nurseries.

The driving force in this company is Roman Zhardanovsky, who has many connections with Ontario, including initially, some very sound advice from Gerry Brouwer, the “king” of the sod growing and harvesting industry. Brouwer’s knowledge of all aspects of sod production and his reputation for creative solutions to any challenge related to sod production has made him internationally sought after.

Before Russki Gazzoni, sod has never been seen in Russia. With the many newly “wealthy” building beautiful houses in the country subdivisions, sod is becoming a very popular need for their gardens.

The large sod growing acreage meant irrigation was essential and Vanden Bussche Irrigation was asked to advise on the irrigation for the sod production, as the existing irrigation equipment from the old regime was in total disrepair.

With this good advice from Ontario, which has very similar weather throughout the seasons as Moscow, many acres of Kentucky bluegrass/ryegrass blends grew well and was an encouraging sign that the company was on the right course.

With good advertising and connections in government (an essential ingredient in modern Russian business), Russki Gazzoni started to receive inquiries for the sodding of government projects. Especially parks – which are high profile areas in Moscow – gardens, sports fields, roadside embankments, and one golf course. It was noticeable in Moscow and the outside city areas that most gardens are very poorly maintained, other than those in rich residential properties. We never saw a mowed lawn. In fact, in all the time that we were in Russia, we never saw a lawnmower, of any size or type. In general, homes have no lawns or landscaping. Front and rear yards are rough, ungraded, full of weeds, with native grasses and trees.

Russki Gazzoni has found it necessary to buy all their machinery and equipment from Canada, including large volume topsoil screeners, tree spades, diggers, backhoes, tractors and all irrigation equipment including drip irrigation for their shade trees that are in storage ready for landscaping.

To organize and perform a simple job in Moscow, is usually a full day’s operation. The traffic around Moscow has to be experienced to be believed – many roads have enormous potholes and everybody drives as fast as their vehicle can possibly go. There are many new luxury cars, Mercedes Benz, Audi, BMW, Jeeps, etc., and many rusting Eastern Bloc vehicles from the “old era” but very little in-between. For transportation, many ordinary folk rely on old smoky buses, which are constantly breaking down, but most walk and walk and walk. It was very noticeable, especially in the city, that people are thin (because of their exercise and hard work) and obviously have some self pride as most men and women were dressed in clean fashionable clothes.

 Everywhere one looks there are signs of change – new methods and equipment have entered the country. Many large warehouse-type buildings are under construction, ready to house the new era. Most of this new development is centred in or around Moscow and therefore has become a magnet for the very poor and unemployed people from rural country areas. For this reason, Moscow has 17 million people and is growing very fast.

An associate company of Russki Gazzoni has 100 acres under glass equipped with modern irrigation and automated fertilizing feed systems. In these greenhouses, they grow the vegetables for
Macdonald's in Russia. We learned that an ordinary hardworking man or woman may save for a month to take their family out for a very special meal at Macdonald's!

When we had the good fortune to visit the countryside many hours drive outside of Moscow, we were amazed at the vastness of the area which was all weeds. A federation owns all the farm land in Russia. Russians own shares in the land. The land cannot be purchased, it can only be leased. Farms of 6,000 to 10,000 acres are common. Most have nothing - no equipment, no seed, no money and no skills, therefore no development. A good knowledge of farming practices seems to be lacking. They continue to do things the old way and are reluctant to change. If the Eastern Bloc ever started farming like western farmers, they could out produce European farms and dominate the market by sheer acreage alone.

In the city centres of Moscow and St. Petersburg, the two main cities in western Russia, it is a very different world. The architecture and historical buildings, statues and artwork are absolutely spectacular. The historical artifacts are rapidly being restored everywhere with all kinds of different donated monies coming from the East and West. The whole world appreciates Russia's history both before and after the 1917 revolution.

With all this western influence and publicity dominating Russian society, people are learning and changing the way they live. Every week, new improvements are brought in and being implemented. Hardworking, forward thinking and hungry for success, companies like Russki Gazzoni are the driving force in Russia today and the capitalist economies of the world are all eager to help that progress.

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**Turf Seeding Rates**

The following are seeding rates per 100 m² for specific species of grass seeds: 1) Creeping Bentgrass, 0.5-1.0 kg; 2) Kentucky Bluegrass, 1.0-2.0 kg; 3) Perennial Ryegrass, 2.0-4.0 kg; 4) Fine Fescue, 1.0-3.0 kg; and 5) Tall Fescue, 2.0-3.0 kg. (Source: OMFRA Turfgrass Management Recommendations, 2000)
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J. Robert Dippel
SEEDS
Supina Bluegrass for Sports Fields

JOHN SOROCHAN & JOHN ROGERS, DEPARTMENT OF CROP/SOIL SCIENCES, MICHIGAN STATE UNIVERSITY

For many years in Germany and other areas of Europe, supina bluegrass (Poa supina Schrad.) has been recognized as a species for athletic fields because of its aggressive competitiveness as well as its exceptional wear tolerance and disease resistance (Berner, 1980; Pietsch, 1989). Unlike other cool season turfgrasses used for athletic fields, supina bluegrass is a stoloniferous turfgrass. This provides for a more aggressive recovery as well as superior turf cover. Previous evidence from Germany suggests that supina bluegrass seeded at less than 10% in a mixture with another cool season turfgrass will in time dominate the turfgrass stand after several years of heavy traffic (Pietsch, 1989). Being able to seed supina bluegrass in a mixture of less than 10% also helps to alleviate the high cost of supina bluegrass seed (about $80 Cdn/kg). This information known, much of the other information about the performance of supina bluegrass has been hearsay or otherwise researched in Germany.

Supranova

A series of studies have been conducted at Michigan State University since 1996 to determine how the supina bluegrass “Supranova” performed in a cool season climate. These studies include the investigation of different seeding ratios of supina bluegrass with Kentucky bluegrass, optimal nitrogen fertilizer requirements, mowing heights and shade tolerance for athletic field conditions.

An objective of the supina bluegrass and Kentucky bluegrass seeding mixture study was to determine the competitiveness of supina bluegrass over time when seeded at different ratios. The seeding ratios investigated were 0, 5, 10, 25, 50, and 100% supina bluegrass. The experiment was conducted on a sand based root zone (80:10:10, sand:soil:peat), and was established in June 1995. Each of the seeding ratios were fertilized with two levels of nitrogen fertilizer (4 and 6 lbs. N/1,000 ft²/year), and then were either subjected to traffic or not. The Brinkman Traffic Simulator (BTS) was used for traffic applications. Traffic applications were done in the fall of each year (1996-99). Typical wear associated during a National Football League game between the 40-yard lines and hash marks was simulated. A total of approximately 25 games per season was applied using the BTS. Fertilizer regimes began during the 1996 growing season and went through 1999. Spring plant counts were taken in 1997-99 to determine the change in percent composition of each species following fertilizer and traffic treatments.

After only one season of simulated football traffic, the percent composition of supina bluegrass increased significant in the 5, 10, 25, and 50% seeding ratios. After three years of simulated football traffic, supina bluegrass was the predominant species for most of the seeding ratios investigated. In addition, as long as there was some Kentucky bluegrass present in the turf composition (even 5%), there were no significant differences that occurred in turfgrass shear strength (stability) compared to a 100% Kentucky bluegrass stand.

Investigations to determine the optimal nitrogen fertilization and mowing height were conducted at Michigan State University from 1996-99 on a loamy soil. Results determined that under athletic field conditions, fertilizing at 4 lbs. N/1,000 ft²/year was optimal; while, 2 lbs. N/1,000 ft²/year was too little. Mowing supina bluegrass at 30 mm (1.25 inches) provided the best and most uniform cover. When mowed at 14 mm (9/16 inches), the supina bluegrass provided a dense uniform cover, but would not tolerate simulated athletic field traffic at this low height. Mowing at a higher height of 57 mm (2.25 inches), the supina bluegrass provided excellent cover when trafficked; however, at this higher mowing height the overall uniformity and appearance of the turfgrass was not acceptable.

Added Benefits

Supina bluegrass is a true cool season turfgrass. It continues to grow late into the fall when most other turf species have stopped growing. This ability to continue late fall growth makes supina bluegrass a desirable turf species for athletic fields, especially for fall sports like football. Therefore, the aggressiveness of supina bluegrass makes it a very desirable turf species for heavily trafficked situations in cool season climates. Conversely, because supina bluegrass is such an aggressive turfgrass by stolons there may be a decrease in some sand root zones for stability. This is due to the fact that supina bluegrass lacks the rhizomes and therefore the stability associated with Kentucky bluegrass, or the deep rooting of perennial ryegrass. However, when the ultimate goal is to sustain a uniform playing surface, the combination of supina bluegrass with an alternate cool season species is favored.

In addition to the aforementioned benefits of supina bluegrass, it also has excellent shade tolerance. Studies at Michigan State University have consistently shown this to be true (Stier, et al., 1996). Research investigating the optimal turfgrass species for indoor athletic stadia determined supina bluegrass was the superior turfgrass (Stier, et al., 1997). The adaptability to shade can also be applied to home lawns and golf courses where shade problems exist. Supina bluegrass is a species native to the mountain regions of central Europe, and its cold tolerance is very evident by its ability to continue to grow during adverse growing conditions. It is usually the last turfgrass to go into fall dormancy, and is the first to begin actively growing in the spring. In Michigan, the only turfgrass disease found to be associated with supina bluegrass is pink snow mold. However, the symptoms of pink snow mold are typically no longer evident by the time the other cool season turf species have begun to actively grow in the spring. This is because the supina bluegrass has already grown out of any effects incurred by the pink snow mold.
When the goal is to sustain high-quality turfgrass stands that can withstand the vigor of athletic field conditions, any advantage a turf manager can implement is always beneficial. Therefore, using supina bluegrass alone or in a mix in order to have a uniform and green cover will only add to the success of a turf manager.

Currently, there are two commercial varieties of supina bluegrass available (Poa supina 'Supra' and P. supina 'Supranova' – available as Icon Turf in Canada). Both of these varieties are from Saatzucht Steinaich in Germany. Please see the seed chart on page 10 – Supranova is also available from EroGreen. A third variety is being released in the near future by Philipp Berner (Saatzucht Steinaich) who does the supina breeding in Germany. With the recent success of supina bluegrass in North America, supina bluegrass breeding is underway in the United States to develop even more varieties. The future of supina bluegrass appears very promising, and its use in the landscape, whether it is for golf courses, athletic fields or home lawns, will only increase.

Article References


Jeopardy

The Municipal Challenge

THIS YEAR'S CHALLENGE was a hard fought round with defending champion Team Oakville leading until "Tina Jeopardy" when they lost out to the "Misfits," a multi-talented group from southwestern Ontario. Questions were split into three areas, General Knowledge, Turf and Equipment with each category having three levels of questions, easy, medium and difficult. Many thanks to Pam Charbonneau for supplying the questions for the half hour event.

A new lighting system fabricated by STA Director Andrew Gaydon using red, yellow and blue lights helped decide who first had the answer to each question. Score was kept by President Jane Arnett-Rivers who also presented the trophy to this year's winners. Team Oakville vowed to return to reclaim the crown next year.

— Mike Bladon
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