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wrote Dann Daly, Park Maintenance Supervisor,
Parks & Recr. Dept., North Smithfield, RI

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Happy winter greetings to all our members. The snowy season is not everyone’s favourite, but it comes without fail year after year, and here in Canada we sure need to make the best of it! There are lots of activities to fill our winter time. Sitting by a log fire reading a book quickly comes to mind, but perhaps ‘professional happenings’ are more relevant here. The big event in Ontario this winter is the Ontario Turfgrass Symposium (OTS) which will be held February 21 and 22 at the University of Guelph.

A detailed brochure is enclosed with this newsletter. The theme Back to Our Roots is relevant because the symposium is returning to the campus of the University of Guelph and focusing on education for all industry sectors: sports turf management, golf, lawn care and sod production. The excellent program will allow for continuing accreditation credits for golf courses and parks.

The STA Annual General Meeting will be held at the symposium in the OAC Boardroom in Johnston Hall at 3:30 p.m. on February 22. We invite you all to join us for a great opportunity to meet other STA members and enjoy a wine and cheese social. Also at the AGM, the Board of Directors will be voted in for the year 2005. Any members wishing to stand for nomination for the Board, please put your name forward. We encourage and welcome new people.

As this is the last issue of the Sports Turf Manager for this year, I would like to thank all contributing authors, the editorial committee and of course our advertisers. Many thanks to Lee Huether, our Executive Director, for ensuring that the Directors and the Association are all running smoothly resulting in a proactive organization.

The Board of Directors would like to wish all its members and their families and friends a very happy and relaxing Christmas.

Register for the industry event of the year!

OTS 2005: Back to Our Roots
February 21 & 22, 2005, University of Guelph

Three Ways to Save...

2. Association Discount. As an STA member in good standing you qualify for lower association rates.
3. Group Discount. Others from your facility/organization who are not STA members qualify for the lower association rates when registered with a member. Send the registration in the same envelope, fax it at the same time, or make just one phone call to register. Visit www.open.uoguelph.ca/ots for details...
Associate Diploma in Turfgrass Management Program Applications

Application to the Associate Diploma in Turfgrass Management program is due in early January. Application is made through the Ontario Universities Application Centre website at www.ouac.on.ca. An additional requirement is completion of a Supplementary Information Form that can be found at the program’s website www.oac.uoguelph.ca/learning/learn_dip2003tml.asp. If you are personally interested or have staff or high school students who are considering applying for the program, please be aware of these important deadlines. For more information, contact Rob Witherspoon at 519-824-4120 ext. 56886.

Diploma Student Internships

Our experience from last year is that many diploma students make arrangements for their summer internships over the Christmas break. We are trying to encourage students to seek internship opportunities further afield although the appeal of home cooking and cheap room and board can be difficult to overcome. If you are interested in having an intern work and learn with you this summer please let us know as soon as possible so that we can make students aware of the diversity of opportunities that exist. I will be meeting with first-year students on Thursday, December 2nd to discuss the internship program in detail. I hope to provide the students with a list of potential internship opportunities at that time. For more information, contact Rob Witherspoon at 519-824-4120 ext. 56886, robwith@uoguelph.ca.

OTS NEW MEMBERS

Chris Herstek & Greg Lancaster
Town of Lincoln, Beamsville, ON

Odds and Ends

Quotable Quotes
To err is human, but to really foul things up requires a computer.
— Farmers’ Almanac

Laughter is the sun that drives winter from the human face.
— Victor Hugo (1802-1885)

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.

Spring 2005 Submissions
If you have something you’d like to submit for the next issue, please forward it to the STA office by January 30, 2005.

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.

THE GREAT CANADIAN WEATHER QUIZ...

Which region is Canada’s lightning capital, logging more than 50 thunderstorm hours each year? a) British Columbia’s lower mainland, b) Prairies, c) Atlantic Canada, or d) extreme southwestern Ontario.
Should Calcium be Used on Ontario Soils?

PAM CHARBONNEAU, OMAF TURFGRASS SPECIALIST, INVESTIGATES AND REPORTS ON RECENT STUDIES

Many fertilizer suppliers to the industry are recommending the addition of calcium to turf. This practice has been adopted by some golf course superintendents in the province. This begs the question – should calcium be used on Ontario soils? I am going to try to answer that question by looking at the role of calcium in the turfgrass plant, the role of calcium in the soil and report on some research findings on adding calcium to turf.

Role of Calcium in the Turfgrass Plant

There are 17 elements that are essential for plant nutrition in relatively large amounts. These are classified as plant macronutrients and are found in the plant dry matter in concentrations of at least 1,000 ppm. They are: carbon, hydrogen, oxygen, nitrogen, potassium, calcium, magnesium and sulfur. Calcium ranks third after nitrogen and potassium in abundance in the turfgrass plant. Calcium plays an important role in cell wall formation, cell division and cell growth. Calcium deficiencies may occur in low pH, sandy soils. Turf leaves turn reddish brown. These symptoms have only been able to be demonstrated by using hydroponic solutions in a laboratory situation. Deficiency symptoms are very rare in the field. Sufficiency ranges for tissue nutrient content for calcium in turfgrasses is 0.5-1.3%. Sufficiency ranges for the major nutrients can be found in Table 1.

Role of Calcium in Soil

Calcium is a positively charged element that occurs in the soil. Soil particles are negatively charged. These negative and positive charged elements work like magnets and are attracted to each other. The negatively charged ions in the soil hold on to the cations so that they can be exchanged with cations in the root system and be taken up by the plant. The ability of the soil to attract these cations is called the cation exchange capacity (CEC) and it is measured in milliequivalents per 100 grams of soil. The CEC...

--- page 6 ---
Table 1. Sufficiency ranges for tissue nutrient content of turfgrasses.

<table>
<thead>
<tr>
<th>Element</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>2.8 - 3.5%</td>
</tr>
<tr>
<td>Phosphorous</td>
<td>0.3 - 0.6%</td>
</tr>
<tr>
<td>Potassium</td>
<td>1.0 - 2.5%</td>
</tr>
<tr>
<td>Calcium</td>
<td>0.5 - 1.3%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.2 - 0.6%</td>
</tr>
<tr>
<td>Sulfur</td>
<td>0.2 - 0.5%</td>
</tr>
</tbody>
</table>

has an impact on how fertilization is conducted. A low CEC soil may need repeated applications of moderate levels of fertilizer. A soil high in CEC can have larger amounts of fertilizer applied less frequently.

The second role of calcium is its role in soil pH. The pH is a measure of the hydrogen cations in the soil solution and on the cation exchange sites in the soil. Soil pH ranges from 3-11 with 7 being neutral. Soils with a pH below 7 are categorized as acidic and above 7 are alkaline. The pH of the soil has an effect on the availability of plant nutrients. Some nutrients are more available at high pHs and some are more available at a low pH. The optimum range of soil pH for most turfgrasses is between 5.5 and 7.

If a soil pH is low, calcium in the form of lime can be added to the soil to raise the soil pH. This should not be done unless a soil test has been performed and has indicated the need for lime. The standard form of lime is calcium carbonate (CaCO₃). If too much lime is added to a soil, the pH of the soil may be increased to a range that is too high for proper plant growth. Lime can burn turfgrass plants. This is especially true when lime is applied during hot weather. It is also very difficult to get lime into the rootzone of mature turf. The best time to add lime to adjust pH is at the time of turf establishment.

Role of Lime in Controlling Moss

Another reason that is cited for the addition of calcium in the form of lime to soils is to control moss. The addition of lime to soils to control moss is only effective if the soil pH is low. In most cases in Ontario, moss is a result of soil compaction, poor drainage, overwatering or too much rain, shade, low mowing height and poor fertility – not because of low pH soils.

Ontario Soils

When glaciers receded from Ontario 10,000 years ago, the materials left behind were deposited directly by the glaciers, deposited by melt waters running from the retreating glaciers or deposited in the bottom of glacial lakes. These became the parent material of soils in southern Ontario. Most of these materials are limestone based and are neutral to basic in pH and are termed calcareous soils. Because of this, it is rare to find soils in this part of Ontario that are low in pH and that would benefit from additional calcium in the form of lime. There are areas in Ontario where the soil pH is not alkaline. These include...
pockets of soil in the Canadian Shield, but the majority of soils in southwestern and south-central Ontario are calcareous.

**Fertilizer Company Claims**

Based on this role of calcium in the plant and in soils, fertilizer suppliers make the claim that it makes plants stronger and more resistant to wear, neutralizes soil acidity, improves activity of favourable soil bacteria, promotes root development, improves soil structure, improves the efficiency and availability of fertilizer, reduces phosphate fixation and increases water penetration and water holding capacity. Some of these statements are true, but only in very specific situations or circumstances, and they should not be used as generalizations for the benefits of calcium.

**Calcium Fertilization Research**

Researchers at the University of Iowa, Nick Christians and Rodney St. John, conducted trials on calcareous-based sand greens. Their research was to determine the benefits or detriments of applying supplemental calcium to turfgrass established on calcareous sand. They wanted to know whether additional calcium increases the amount of calcium absorbed by the grass plant, whether it increases clipping yield and quality and if it affects the availability of other nutrients to the plant.

A greenhouse study looked at adding additional calcium to Kentucky bluegrass and creeping bentgrass grown in calcareous sand. The additional calcium treatments consisted of calcium sulphate, calcium carbonate, calcium nitrate and a chelated calcium. The calcium, regardless of the source, was incorporated into the growing medium at a rate of 4.7 lbs of calcium per 1,000 sq. ft.

A two-year field study on creeping bentgrass established on a calcareous sand putting green also received 4.7 lbs. of calcium per 1,000 sq. ft. applied as five separate monthly applications.

In both the greenhouse and field studies, the additional calcium did not increase the growth, colour or leaf calcium content of the grasses established on the calcareous sands. In the greenhouse study, the additional calcium reduced the leaf magnesium content by 15% and by 11% in the field trial. In the field studies, the calcium carbonate and calcium nitrate treatments reduced the soil extractable potash levels and the calcium sulphate, calcium nitrate and calcium chelate reduced the amount of soil extractable magnesium. Over time, with continuous additions of calcium, both magnesium and potash could become deficient in the soil leading to deficiencies in the turfgrass plant. The greenhouse study did show that creeping bentgrass had nearly twice the amount of calcium in the leaf tissue as did Kentucky bluegrass and none of the treatments increased the tissue calcium levels in either species.

So the claims that additional calcium increases resistance to wear can only be true if the added calcium is taken up by the turfgrass plant. This research demonstrates that it is not. As far as the addition of calcium increasing the availability and efficiency of fertilizers, the calcium actually made the magnesium and potash less available.

The take home message from this research is that supplemental applications of calcium did not increase clipping yield, leaf calcium content or turf quality and that the addition of calcium could limit the availability of magnesium and potash to the plant when applied to calcareous sand.

### Literature Cited


— Green is Beautiful, October, 2004

**COMING EVENTS**

**January 6 - 11**

56th Annual Canadian International Turfgrass Conference & Trade Show
Toronto, ON, Info: (905) 602-8873 www.golfsupers.com

**January 11 - 13**

Landscape Ontario Congress 2005 featuring Fencecraft 2005
Toronto, ON, Info: 1-800-265-5656 www.localhost.com

**January 19 - 23**

Sports Turf Managers Association (USA) Annual Conference & Exhibition, Phoenix, AZ
Info: (712) 322-7862 www.sportsturfmanager.com

**January 31 - February 25**

Guelph Turfgrass Institute Turf Managers' Short Course
Guelph, ON
Info: (519) 767-5000

**February 2-4**

Turfgrass Producers International Midwinter Conference
Cancun, Mexico
Info: (847) 705-9898 www.turfgrasssod.org

**February 21 & 22**

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

**February 22 (at the OTS)**

Sports Turf Association Social & Annual General Meeting
Information: (519) 763-9431

**February 27 & 28, March 1 & 2**

Western Canada Turfgrass Association 42nd Annual Conference & Show
Penticton, BC, Info: (604) 467-2564 www.wcturf.com

**March 23 & 24**

Ontario Parks Association 49th Annual Educational Seminar & Explorations Trade Show
Hamilton, ON
Information: (905) 864-6182 www.opasoc.on.ca
Urban waste disposal systems are steadily moving toward the composting of all organic materials rather than placing them in a landfill site. Uses for this material in the landscape industry are increasing as more material becomes available.

In a recent article in the *Sports Turf Manager* (Winter 2003), Pam Charbonneau reviewed the role of compost in sports field management. Research at the Guelph Turfgrass Institute has shown a suppressing effect on pink and grey snow mould, two of the few diseases which affect sports turf. An additional benefit Charbonneau observed was improved spring green-up.

The use of compost has a major problem – inconsistency in quality. Very diverse analysis is common, primarily the result of the wide range of material which is composted and variations in the composting process used.

This article summarizes a recent incident where a parks department was misled by a compost supply company. Several hundred tonnes of the material were purchased to use in their organic-based management program. In the fall of 2003, during the evaluation of some fields for the parks department, we observed a heavy application of the material.

Examination of the black “compost” suggested a significant mineral content. Permission was obtained for further examination of the material. Some yellowing was observed of the grass leaves where the material had been applied several days previously.

Initial analysis of the material was done in conjunction with a number of other samples testing for routine fertility and particle size of the mineral fraction. This analysis showed two surprising results. The potassium level was 1,280, four times a normal very high reading. The particle size distribution analysis revealed 74.9% sand, 14.6% silt and 10.7% clay. The very pronounced gritty feel of the material prompted a third analysis (a separate laboratory test) for total organic matter. This analysis revealed the “compost” contained only 10.5% organic matter. The material was, in fact, classed as a high organic, fine sandy loam. The sand fraction was made up of 61.3% fine and very fine sandy loam which when combined with the 14.6% silt would make the material a very inferior top dressing material, contributing to, rather than alleviating any compaction or infiltration problems.

The source of the high potassium is not known. Any relationship between the observed yellowing and the potassium test is pure conjecture. It was a red flag, however, that something was wrong with this “compost.” The material used to impart the black colour and raise the organic level to 10.5% may contain other contaminants, not included in the analysis, which were causing the yellowing of the grass leaves.

Due to the lack of any regulations stipulating what is compost and the high variability in materials, it is strongly suggested that some certificate of analysis be provided by the supplier before a contract to purchase is made. The basic information should state percent organic matter, particle size distribution and routine fertility analysis. The analysis should be done by one of the labs accredited by the Ontario Ministry of Agriculture and Food (see box below).

The cost of the analysis conducted on the “compost” was $70. This is a small price to pay for the assurance that the material is in fact compost. Due to the lack of quality control on compost it might be wise for the purchaser to suggest that samples will be taken from random loads as they are delivered for verification of the analysis on which the purchase was made.

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London, ON N5V 3P5  
(519) 457-2575

Accutest Laboratories  
146 Colonnade Road, Unit B  
Nepean, ON K2E 7Y1  
(613) 727-5692

Agri-Food Laboratories  
503 Imperial Road, Unit I  
Guelph, ON N1H 6T9  
(519) 837-1600

Stratford Agri Analysis  
P.O. Box 760, 1131 Erie Street  
Stratford, ON N5A 6W1  
(519) 273-4411
Safety Makes Cents: Summary of Presentation Given at the Recent STA Annual Field Day

TERRY MURPHY, MANAGER, EDUCATION, TRAINING AND SAFETY, LANDSCAPE ONTARIO

No one wants an accident to happen. They can cause personal injury, pain and suffering; thoroughly disrupt a person’s life; result in property and equipment damage; and create major cost and profit implications to an organization. They are a major cost to society in general – especially considering all accidents can be prevented.

One person dies each week in Ontario from a workplace accident. There are 300,000 major accidents in our province each year resulting in at least one amputation a day from such incidents. These accidents can be prevented. We have the power to reduce and eliminate them. It is not easy but it can be done. We need to take the time to make it happen!

Governments are tired of companies neglecting their obligations under the provincial Occupational Health and Safety legislation to have safety processes in place within their businesses. Firms are tired of paying large premiums to fund accident costs. In Ontario, 10% of companies cause the majority of accidents. Do you realize that the good companies, the ones who have safety policies in place and who train and care about safety, are paying for the bad ones, that couldn’t care less about safety and accident prevention? That’s why your rates are so high! Recently the Government of Canada passed a federal law, Bill C-45, which makes safety violations from these bad companies a criminal offence that is prosecutable in a court of law under the Criminal Code. The police can now investigate accidents and lay charges. This can result in large personal fines and years in jail for those convicted.

How can we be better at managing safety? In the landscape industry, Landscape Ontario has been leading the charge in this important area. Landscape firms are not only making themselves safe, but they are making money doing so.

For the last five years, Landscape Ontario has been a safety sponsor for the Workplace Safety and Insurance Board (WSIB) programs, Safety Groups and Safe Communities Incentive Plan (SCIP). Both programs rebate companies 5% annually on their pre-miums for a successful completion. The last two years have seen over 175 firms receive $1,000 each. This also drives down the industry group rate. Companies are being paid to develop a “safe culture” which is what they need to do to avoid convictions under Bill C-45. It is a win-win for everyone. Statistics show that groups of companies working in these programs are operating more safely than others not in such a safety group.

During the last six years, the landscape industry has reduced their WSIB industry premium rate in rate group 190 from 9.11% to a projected 4.69% in 2005 per $100 of wages. This is a 50% reduction over seven years which will save the industry over $10 million each and every year. The Ministry of Labour has announced that they will add another 200 inspectors to zero in on the 2% of bad firms that cause the large number of accidents. This is good news for those companies who are striving to develop safety cultures and reduce accidents. It is also a very good reason for all companies to consider joining the Landscape Ontario sponsored safety programs. Most of the training takes place in the winter during the off season.

To conclude, safety makes cents! In fact, safety management makes both dollars and sense! Contact Terry Murphy at Landscape Ontario, 1-800-265-5656 x 317 for further information on the landscape industry WSIB programs, any safety issue or about this article.
What is your role?
As a Park Manager, I am directly responsible for the day-to-day operations for our parks and open spaces. Along with one other Park Manager, I develop and monitor the annual operation budget, contribute to the long term direction for the department, provide quality customer service when dealing with public inquiries and participate actively as a member of the Director's team in consultation with Park Planners and Community Development Workers.

What kind of team do you work with?
Along with the other Park Manager, we directly supervise 5 lead hands with 13 full time staff year round with an additional 5 full time employees that transfer from arenas in the summer and about 60-70 temporary seasonal employees. I report directly to the Director of Parks and often collaborate with the Park Planners and the Community Development Workers. I also serve on several corporate committees and take part in many city-wide corporate initiatives.

What are you and your team responsible for?
We are responsible for all aspects of operations for the City's parks and open spaces. This includes, but is not always limited to: turf maintenance on City owned properties, sports fields, play structures, garbage collection in parks, horticulture, special events, Farmer's Market, winter control in parks and facilities, trails, splash pads, amusement rides, washrooms, outdoor natural ice rinks, and greenhouse activities, to name a few.

What is your biggest challenge?
Trying to balance stakeholders and the public's varied wants and needs with a shrinking budget and increased inventory to manage.

What is the most satisfying part, what makes the job worthwhile for you?
Guelph is my hometown. I was born here, raised here, educated here and now work here. It has been interesting to see this City go through growing pains and it's nice to think that in some small way I can contribute to the development of my hometown. One of my first assignments when I came to work for the City was to design and supervise construction of a small park on an old industrial site. The park is now completed and knowing that that park will most likely be there for people to enjoy long after I'm gone is pretty cool! Also, I have always felt what makes a job worthwhile are the people you work with, and I am fortunate to work within a team of dedicated talented professionals who truly take pride in their work and cultivate an enjoyable work environment.

What is the biggest misconception about your job?
It seems that people think any request they make can be easily accommodated and