City of Minneapolis Bans Phosphorus Lawn Fertilizers

In the name of protecting local waterways, the Minneapolis City Council passed an ordinance Sept. 28 limiting the sale and application of lawn fertilizer containing phosphorus. Phosphorus is blamed for unsightly algae blooms in area lakes and streams.

A coalition of suburbs and outstate cities, some of which also have passed such ordinances, will attempt to establish statewide restrictions in Minnesota.

Taken together, the efforts make Minnesota "the beachhead of this movement," according to Jim Skillen, manager of formulator issues for Responsible Industry for a Sound Environment (RISE). The Washington, D.C.-based lobbying group represents lawn and garden treatment and pesticide manufacturers and opposes the restrictions.

Recent studies by the University of Minnesota and Hennepin Parks, the suburban park system, have shown that most Minnesota soils, particularly in the metro area, already contain plenty of phosphorus. Advocates of the limits say that adding more to urban lawns creates the risk that more will wind up in bodies of water.

John Barten, water quality manager for Hennepin Parks, said runoff in the metro area carries about a quarter pound of phosphorus from lawn fertilizer from every acre in the metro area. Of that, most runs through sewer systems and filtration devices, which can remove about 60 percent of it. Some, particularly after heavy rains, runs directly into lakes and streams. One pound of phosphorous can nourish 500 pounds of algae, Barten said.

Eliminating or neutralizing phosphorus - through ponds, basins, chemicals, street sweeping or other strategies - averages about $375 per pound, Barten said. The Chain of Lakes Clean Water Partnership, a consortium of local governments, spent $11 million over the past seven years for a variety of water-quality improvements, many of them aimed at phosphorus reduction.

Barten's studies have shown that about half of the phosphorus in runoff comes from lawns, and almost all of the rest from streets and driveways. But fertilizer industry groups argue that fertilizer restrictions don't address phosphorus sources such as Canada goose and pet feces, much less agricultural land. They're supported in part by a University of Wisconsin Department of Soil Sciences study that concluded that failing to maintain a lawn with phosphorus could result in more erosion and runoff.

The Minneapolis ordinance will prohibit all lawn fertilizer with phosphorus except on new lawns or where a soil test has shown a phosphorus deficiency. Organic fertilizers, which generally contain relatively low levels of nutrients, also will be allowed - a loophole opponents have criticized.

The ordinance also will apply to commercial lawn services, and violators can be fined up to $300. The ordinance takes effect in January.

ASGCA Asks Raters for "Level Playing Field"

The American Society of Golf Course Architects has called for a "level playing field" when raters evaluate golf courses for organizations or publications.

"We think raters should focus on pure design," states ASGCA President Damian Pascuzzo, "and not include things like 'tradition' and 'walking' in their calculations. When the panelists rate a course--new or old--that's the rating that should determine the final ranking. The sponsoring organization should not have 'optional' points to award older courses, since that sways the final rankings to favor older courses."

The Society president added that the organization would prefer not to have any ratings published, since it is an "impossible task to compare a brand new course with one that has been in play for 50 years or more, but we recognize that golf course rankings help sell magazines."

Conditions Different Today

The ASGCA pointed out that architects often had the luxury of choosing between a variety of acceptable sites 50 years ago, which made it easier to incorporate mature trees and ensure a course that was easy to walk.

Today, the Society noted, architects often work with very difficult sites that have steep grades. Furthermore, owners often want all players to use revenue-generating carts, so walking is seldom even an option.

"Despite contemporary parameters, which include stringent environmental regulations, today's architects are designing great golf courses that can compare favorably with the well-known courses that have grown in stature through the years," Pascuzzo added.

ASGCA Schedules Older Courses

The ASGCA said that it has great respect for America's great, older courses. In the past decade, the Society has held annual meetings in Long Island, Philadelphia, Toronto, San Francisco, Los Angeles, Charleston and Columbus so that members could learn from playing established golf courses that have earned recognition.

"If we have to live with rankings, we'd at least like them to be equitable," the ASGCA president stated.

The American Society of Golf Course Architects is composed of 150 leading golf course architects throughout North America, all of whom have met the organization's stringent requirements for membership. To learn more about the ASGCA phone (312) 372-7090 or fax (312) 372-6160.

Topdressing in Late Fall Just Before the Course Closes for Winter May Speed Spring Green-Up

By DONAVON TAYLOR, Ph.D.

Topdressing golf greens in late fall to reduce winter desiccation and injury has been practiced by some golf course superintendents and advocated by some researchers for many years.

Although topdressing applications as light as 0.035-inch depths have been recommended for summer applications, heavier topdressings of 0.3 to 0.4 cubic yards/1,000 square feet (0.10 to 0.13-inch depths) have often been recommended for late-fall applications to protect against winter desiccation. An even heavier depth of 0.70 cubic yards/1,000 square feet (0.23-inch depth) was found to have beneficial effects on spring recovery of golf greens in Iowa, particularly during mild winters with little snowfall. In 1993 and 1994, problems in the recovery of golf greens after winter occurred at several Minnesota golf courses and appeared to be associated with topdressing practices the previous fall.

Materials and Methods

To determine whether late-fall topdressing of golf greens affected spring recovery and growth, this study evaluated the influence of topdressing depth and topdressing characteristics on soil and turf temperatures, color and injury.

Three golf courses participated in the study: River Falls (Wis.) Golf Club; St. Croix National Golf Club, Somerset, Wis.; and Indian Hills Golf Club, Stillwater, Minn. In early to mid-November of 1997, 1998 and 1999, a practice green at each location was topdressed with four different topdressing materials at two rates. Topdressing was left on the surface throughout the winter while the courses were closed. Just before the courses opened for play in the spring, the topdressing was brushed in and the grass was mowed.

Topdressing depths were 0.09 and 0.19 inch (0.3 and 0.6 cubic yards/1,000 square feet); control plots received no topdressing. Each of the four materials was applied at each depth.

The topdressing materials were: silica sand; masonry sand; 85 percent silica sand/15 percent peat mixture (by volume); and 85 percent masonry sand/15 percent peat mixture (by volume). The silica sand was white, rounded with medium sphericity shape, and very uniform in size (1 percent very fine sand/6 percent fine sand/90 percent medium sand/3 percent coarse sand by USDA soil classification). The masonry sand was commercially screened specifically for the needs of the golf course industry and was brown, subangular with medium sphericity shape, and less uniform in size than the silica sand (1 percent clay and silt combined/1 percent very fine sand/24 percent fine sand/46 percent medium sand/26 percent coarse sand/1 percent very coarse sand). The peat used in both sand/peat mixtures was a shredded and milled reed-sedge peat with an organic content of 80 percent by weight.

In the spring, after snowmelt, turf surface temperatures were measured using an infrared thermometer; soil temperatures were measured in the surface 2 inches of soil; turf color was evaluated on a 1 to 9 scale; and visual observations of turf damage were noted.

Results

Because recovery from winter and response to topdressing treatments may be influenced by late-fall, winter or spring weather conditions, it should be noted that winter temperatures were considerably above normal all three years of this experiment. Unusually warm temperatures in November and December 1998 and 1999, averaging 7.2 F above normal, resulted in little or no snow cover during most of those months. Warm temperatures in February and March all three years, averaging 10.0 F above normal, provided earlier than normal snowmelt.

Temperature

Topdressing with white sand decreased turf surface temperatures compared to no or darker-colored topdressing. In spring 2000, the lightest-colored treatment resulted in the lowest temperatures (silica sand, heavy rate). The darkest-colored treatment (masonry sand/peat, heavy rate) lead to the highest temperatures. The control received no topdressing.

Differences were greatest soon after snowmelt and diminished with turf growth, brushing in of topdressing materials, and mowing. Surface temperatures were also affected by daily factors such as cloudiness (surface temperatures would change by several degrees as small clouds shaded the plots from sunlight for even a few minutes) or rain (all three courses received rainfall during the night before the March 24 measurement, leading to insignificant differences between plots).

Soil temperatures in the surface 2 inches were measured weekly during spring 2000. Differences between treatments paralleled closely the differences in surface temperatures with silica sand, heavily topdressed, having the lowest soil temperatures and masonry sand or masonry sand/peat topdressings leading to the highest temperatures early in the spring. The magnitude of temperature differences narrowed quickly, but slight differences still existed on April 14, even though plots had been brushed and mowed.

Both surface and soil temperature results suggest that the color of topdressing material determined its effect on spring

(Continued on Page 34)

Topdressing–

(Continued from Page 33)

temperatures. Although it was not the only important factor, the higher spring temperature of some plots probably led to differences in early spring growth as indicated by turf color measurements.

Turf Color

Early spring color was significantly better on plots topdressed with masonry sand, masonry sand/peat, or silica sand/ peat than on plots topdressed with silica sand or control plots with no topdressing. The differences in color were visually dramatic for several weeks as most topdressed plots turned green and started growing while untopdressed plots remained brown. Differences in color were evident for approximately four to six weeks after snowmelt in the spring.

The enhanced early color of plots with darker-colored topdressing was likely due to a combination of reduced desiccation and higher temperature effects. Plots topdressed with white silica sand had lower temperatures, which probably slowed the initiation of spring growth as compared with plots topdressed with darker materials. Plots receiving no topdressing were nearly as warm as plots topdressed with darker materials, but they were particularly slow to green up in the spring, presumably because of greater plant desiccation during the winter.

Turf Damage

Observations of injury seem especially pertinent to golf courses. Even occasional damage may create unacceptable risk for management practices. Four types of turf damage were noted on plots in this experiment. In all cases, damage refers to areas where turf did not come back after the winter.

Damage occurred every year to an area of about 10 square feet at one golf course. This damage was in an area where ponded water remained on the surface after free water had left the rest of the plot area during snowmelt periods. At the same course, in the first spring, damage was apparent on all plots regardless of topdressing treatments and was probably related to excessive surface water during the snowmelt period. In both cases damage appeared unrelated to the topdressing treatments, but the treatments did not help turf survive what was, in all likelihood, damage from excessive surface water.

During the first year of the experiment, damage to turf was evident along the edges of plots at two courses where topdressing treatments overlapped. At these courses, plots were 4 feet wide in order to fit all plots onto the greens. Topdressers spread material at a width of 4.5 feet, leading to a narrow overlap strip at the edges of plots. At both sites there was turf damage in the spring on some overlap areas, and damaged areas were visible for several months because the turf was thin. Although these areas were not part of the designed experiment, they demonstrated that excessively heavy fall topdressings can lead to turf damage. Because of damage to overlap areas, plots at these sites were widened to 4.5 feet during the second and third years of the experiment.

In one year, turf damage at one site was clearly related to topdressing treatments. Damage was obvious and limited to about 5 to 6 feet at one end of the plots. In one replication, obvious damage occurred on three of four heavily topdressed plots: silica sand, silica sand/peat mixture, and masonry sand/peat mixture. Slight damage was noted on the heavily topdressed masonry sand plot. In the other replication, slight damage was noted on the heavily topdressed silica sand and silica sand/peat mixture plots. No damage was noted on the lightly topdressed or control plots in either replication. The damaged area at the end of the plots was the wettest part of the green and an area where snow remained the longest. No damage was noted in this area during the other two years of the experiment. It appears that heavy topdressing may increase problems in turf recovery from winter where greens are subject to excessive surface wetness.

Conclusions

Late-fall topdressing of golf greens with sand or sand/peat mixtures significantly affects spring turf growth. Compared to plots without topdressing, topdressed plots were quicker to green up in the spring. Topdressing with white sand led to cooler spring turf and soil temperatures than topdressed plots, but spring green-up was still somewhat enhanced by the topdressing. Topdressing with darker-colored materials (brown sand or sand/peat mixtures) led to the warmest spring temperatures and the earliest spring green-up and growth. Superintendents who want to use light-colored sand but also get early spring growth might consider mixing peat with the sand to darken the color.

Topdressing at a rate of 0.19-inch depth (0.6 cubic yards/1,000 square feet) led to early spring growth but was associated with some damage at one site in one of the three years of this experiment. This result suggests that heavy topdressing may increase damage when excessive surface moisture occurs. It seems appropriate to limit late-fall topdressing depths to no more than about 0.09 inch (0.3 cubic yards/1,000 square feet). Topdressing at this rate and with darker-colored sands or sand/peat mixtures should help reduce desiccation and promote an early start to spring growth.

Acknowledgments

Funding for this research was provided by The GCSAA Foundation and Minnesota GCSA through the Chapter Cooperative Research Program. Thanks to all the golf course superintendents who so graciously assisted in this research: Richard Grundstrom, Indian Hills GC; Daniel Swenson, River Falls GC; and Kevin Clunis, CGCS, Timothy Berggren and Daniel Nagy, St. Croix National GC.

Literature cited: Beard, J.B. 1973. Turfgrass: Science and culture. Prentice-Hall, Englewood Cliffs, N.J.

Bengeyfield, W.H. 1969. This year: top-dress greens and see the difference. USGA Green Section Record 7(1):1-4.

Christians, N.E., K.L.Diesburg and J.L. Nus. 1985. Effects of nitrogen fertilizer and fall topdressing on the spring recovery of Agrostis palustris Huds. (Penncross creeping bentgrass) greens. p. 459-468. In F. Lemaire (ed.) Proceedings of the Fifth International Turfgrass Research Conference, Avignon, France, July 1-5, 1985. Institute National de la Recherche Agronomique, Versailles, France.

(Editor's Note: Donavon Taylor (e-mail: donavon.h.taylor@uwrf.edu) is a professor of soil science in the department of plant and earth science at University of Wisconsin-River Falls.)

National Weather Service To Unveil New Wind Chill Chart in November

This winter, folks who work and play outdoors will have a new way to judge how cold it feels, according to the National Weather Service.

Starting in November, NWS forecasters will use a new Wind Chill Temperature Index, designed to provide a more accurate reading of how the cold air feels on the human skin.

Since 1945, the United States and Canada have used an index that relied on observed winds 33 feet above the ground, and focused on how fast the temperatures—combined with winds—made water freeze. The new index uses the wind effects at face level, and an improved calculation for body heat loss.

For example, under the old index system, an air temperature of 20 degrees, with a 15-mph wind, translated into a reading of five degrees below zero. The new index calculation would translate the same conditions to six degrees above zero.

For a chart comparing the new system to the old one, visit http: // www.noaanews.noaa.gov / stories / images /windchillfactor-new.jpg

"Exposure to cold, biting air for long periods of time is dangerous," said Jack Kelly, director of the National Weather Service. "Our main goal was to use modern science in revising the index so that it's more accurate and makes the human impact more prominent."

THE NEW INDEX

The new index will be based on:

Wind speed calculated at the average height of the human face, about five feet (the human face is most often exposed to the cold).

An updated heat transfer theory, which factors in heat loss from the body to its surroundings during cold, windy days.

A consistent standard for skin tissue resistance.

Clear night sky conditions.

A lowered calm wind threshold from four miles to three miles.

Kelly said, "This information will help people make sound decisions about how to dress for the weather."

Drive for the "U" Program

The Drive for the U is a program designed for in-kind donations to the University of Minnesota Turfgrass Research Center. All donations are tax deductible and will help to build the research center into a top notch facility.
Paul Eckholm, CGCS, Heritage Links Golf Club. epeckholm@msn.com

Company/Person	Commitment	Value
Turf Supply Company	**Product**	**OPEN**
Hartman	**Construction Services**	**OPEN**
Paul Eckholm, CGCS	Rotary Mower	$200
Plaisted Companies	Materials	OPEN
Eureka Sands	Materials	OPEN
GreenImage	Sprayer	$1,000
DTN Weather Services	Satellite System	$1,500
Rick Fredericksen, CGCS	Vacuum	$800
Rob Panuska	18 Cups	$325
Century Rain Aid	6 Irrigation Heads	$950
Miltona Turf Products	Turf Maintenance Tools	$325
Paul Eckholm, CGCS	Reel Maintenance	OPEN
Hydrologic	Irrigation Materials	$2,000
Gill Miller Inc.	Design Services	$3,500
E-Z-Go Golf Cars	Workhorse	$5,000
E-Z-Go Golf Cars	Workhorse	$3,500
Bonestroo & Assoc.	Design, Construction, Services	OPEN
Twin City Seed	Bentgrass Seed	$400
Simplot Partners	Fertilizer Products	$5,000
North Star Turf	Two Mowing Units	$33,819
North Star Turf	Top Dresser	$7,495
MTI Distributing, Inc.	Three Mowing Units	$48,423

Premier irrigation, inc.

Providing Quality Golf Course & Athletic Field Irrigation

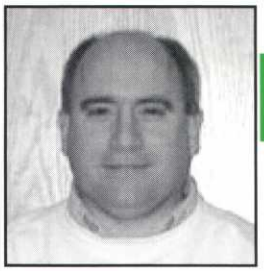
Commitment To Quality
2 year warranty on all new irrigation systems.

- New Golf Course Construction
- Certified Irrigation Contractor
- Licensed, Bonded & Insured
- Flexible Installation Schedule
- Financing Options Available
- Renovations, Additions & Upgrades
- Pump Stations & Retrofits
- Fountains & Aerators
- Repair & Service
- Winterization & Start-Ups

Call to Schedule a Free Site Visit
651-480-8857

Golf Course Builder's Association of America • Minnesota Golf Course Superitendant Association
National Irrigation Association • National Center for Irrigation Technology
Minnesota Sportsturf Association • Wisconsin Turfgrass Association
Minnesota State Board of Electricity • First Tee Sponsor

P.O. Box 564 • Hastings, MN 55033 • Phone: 651-480-8857 • Fax: 651-480-8854



Editor's Corner

By Richard Traver, Jr., CGCS
Monticello Country Club

What Great Fall Color!

Even though as I write this column most of the leaves have already fallen, I can't remember a year when the colors on the trees have been as vibrant as this year. It makes it so much easier coming to work when you have such a wonderful background to work against. Too bad it only lasts a couple of weeks. Make sure you take a little time to reflect on the year and all that you have accomplished. Take the time to write it all down. Sometimes I am really surprised at all that my staff and I have completed after I see it on paper.

Had a Bad Year?

The GCSAA has put together a new career development resource packet that members may find helpful. "How to help your course weather an Economic Downturn". The packet is free to members and can be ordered by calling the service center at (800) 472-7878. Some of the topics in the packet include but are not limited to the following:

***GCSAA information pamphlet:** How to Help Your Course Weather an Economic Downturn.

***Crittenden Golf Inc:** Keeping Your Maintenance Budget in Line.

***Golf Course Management Magazine:** You Can Reduce Your Golf Course's Maintenance.

***Crittenden Golf Inc.:** 10 Quick Turnarounds.

Winter Projects

Looking for a little project this winter. Build a couple of bat houses, you can find directions for building a good bat house at www.batcon.org. Click on Projects, then Bat House Project. After you build it make sure it is placed somewhere it will get the morning sun and give it a dark color. Bats are a bit finicky about where they live so take a little time to find the right spot.

Boots

A longtime member of the MGCSA and dear friend to many, Boots Fuller passed away after struggling with a non-Hodgkins Lymphoma at the age of 71. Our best wishes go out to his friends and family.

Congratulations State Teams

Great job on bringing our state teams home for the USGA State Team Championships. Jim Nicols at Hazeltine G.C. and Rick Fredrickson at Woodhill C.C. had their golf courses in primo condition for the USGA State Team Championships. Much of the credit was given to John Harris and Claudia Pilot for leading their respective teams. However, while they and their teammates are talented golfers beyond a shadow of a doubt, we all know that it was the expert turf care by the aforementioned superintendents that brought the titles home.

Next Event

Keep your eyes open for the registration forms for the MTGF Conference, coming up on December 4-6. We also have our annual MGCSA business meeting on Wednesday December 5, @ 4:45 p.m.

Safe Hunting

As you deer, waterfowl and pheasant hunters head on out to capture your prey, have a great time, but stay safe and stay smart.

--Richard Traver, Jr., CGCS
Editor

MGCSA Membership Report

New Members: October 3, 2001

Class

Charles Daggett
Timber Creek GC.....A - GCSAA (pending)
2655 Cty. Rd. 127, Delano, MN 55328 - W: 952-955-3600

Chris Klatte
Pine Hill GC / Grand View Golf Links.....A - GCSAA (pending)
P.O. Box 280, Somerset, WI 54025 - W: 715-247-3673

Brian Boll
Interlachen CC.....C - GCSAA (pending)
2049 Edgewater Ave., Shoreview, MN 55126
W: 952-924-7420

Clayton Krieger
Midland Hills CC.....C - GCSAA
1910 Burns Ave. #128, St. Paul, MN 55119 - W: 651-631-1545

Ryan Popp
Interlachen CC.....D
8660 Old Cedar Ave. S.#203, Bloomington 55425 - W: 952-924-7420

Charlie Edwards
Rochester Technical School.....Student
834 21st Ave. SE #13, Rochester, MN 55904 - H: 507-252-0065

Marshall Henson
Rochester Technical School.....Student
121 8th St. NE, Byron, MN 55920 - H: 507-775-2158

Michael W. Nadolny
Rochester Technical School.....Student
110 Lillie Lane, Pine Island, MN 55963 - H: 507-356-2443

Andy Olson
Rochester Technical School.....Student
13031 New Have Rd. NW, Pine Island 55963 - H: 507-356-4550

Nicholas Quade
Rochester Technical School.....Student
1989 220th St., Truman, MN 56088 - H: 507-360-8631

John Stapp
Kate Haven GC.....Student
834 21st Ave. SE #13, Rochester, MN 55904 - H: 507-252-0065

Loren P. Walsh
University of Minnesota.....Student
765 School Rd. NW #102, Hutchinson, MN 55350 - H: 320-234-3542

John Quinlan
Becker Underwood, Inc.....Affiliate - GCSAA
4826 Chowen Ave. S., Minneapolis, MN 55410 - W: 612-669-6231

RECLASSIFICATIONS

Daniel Hinton
Jackson GC.....B to A - GCSAA

Steven J. Hall
Hillcrest G&CC.....C to B - GCSAA

James Temple
Crystal Lake GC.....C to B - GCSAA

Submitted by Daniel Swenson, Membership Chairman

Suståne® 18•1•8+Fe
Fairway Grade Fertilizer

SUSTÅNE
Naturally...

Cover your fairways this fall and receive
Suståne Greens Grade Products at no extra cost...

Contact your local distributor for details ***today!***

Custom application available

Big Coverage **3 tons covers 25 acres at 1 lb. N / 1,000 sq. ft.**

Long Lasting **85% Slow Release Nitrogen from: Suståne organic fertilizer + Nutralene® + Polymer Coated Sulfur Coated Urea**

Great Price **Compare cost of coverage to any other 85% SRN Organic Based fertilizer**

Suståne Based **World Class Suståne Fertilizers since 1988**

What more could you want?

How about enough Suståne® Greens Grade Fertilizer, at no additional cost, to cover up to 19 greens for the fall or dormant feeding?

Order now for fall application to fairways, roughs and other long cut turf and we will provide you with enough Suståne Greens Grade Fertilizers (your choice of 5•2•4+Fe, 5•2•10+Fe or 10•2•10+Fe+Nutralene) to fall feed up to 19 average size greens. That's right! We know that Suståne 18•1•8 is the only kind in its class at this price. And we want to introduce you to *the new* ***Suståne Natural Based Fertilizers***—for all of your fall soil building & fall fertilizer needs.

Call your local distributor today or call Suståne for distributors in Minnesota, Wisconsin, Iowa and the Dakotas today 1-800-352-9245.