CORNELL UNIVERSITY TURFGRASS TIMES

CUTT

2011 Issue 2 • Volume 22 • Number 2

How to Comply with the New Nutrient Runoff Law

If you did not know, the Dishwasher Detergent and Nutrient Runoff Law (Chapter 205, laws of 2010) was signed into law by Governor Patterson on July 15, 2010. The purpose of this law is to improve water quality in New York by reducing phosphorus runoff into the state's water bodies. By passing this bill New York State also hopes to reduce costs to local governments and private entities that are required to remove excess phosphorus from stormwater and wastewater, and to improve recreational uses of the state's waters.

According to NYSDEC "phosphorus enters the environment in many ways. Wastewater treatment plants, defective septic systems, agricultural runoff, fertilizer, manure, decomposing leaves, and urban/suburban runoff all contribute phosphorus to the environment. Phosphorus going into the state's water has been linked to: reductions in oxygen in water bodies necessary for fish to breathe; algae that turn water bodies green; and algae and algae by-products that degrade drinking water. Over 100 water bodies in New York are impaired due to phosphorus including: East of Hudson in the New York City watershed; Lake Champlain; Onondaga Lake; Cayuga Lake; parts of Lake Ontario; and the Chesapeake Bay watershed".

This law pertains to both those who apply fertilizer and those who sell fertilizer to all turf sites except sod farms, which are exempt.

1. The law is in effect on January 1, 2012

2. Prohibits the use of phosphorus-containing lawn fertilizer unless: establishing a new lawn including the first growing season or a soil test shows that the lawn does not have enough phosphorus.

The definition of a "phosphorus fertilizer" means a fertilizer in which the available phosphate (P_2O_5, second number on the bag) content is greater than 0.67 percent by weight, excluding compost.

3. Prohibit the application of lawn fertilizer on impervious surfaces and require pick up of fertilizer applied or spilled onto impervious surfaces.

4. Prohibit the application of lawn fertilizers within 20 feet of any surface water except: where there is a continuous vegetative buffer of at least 10 feet; or where the fertilizer is applied by a device with a spreader guard, deflector shield or drop spreader at least three feet from surface water, this does not apply to sites being established, this is for all fertilizers not just the ones that contain phosphorus.

5. Prohibit the application of any lawn

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This Times

CUTT, "Cornell University Turfgrass Times" is published four times per year by the Turfgrass Science Program at Cornell University, Ithaca, New York 14853. Address correspondence to: Cornell University Turfgrass Times, 20 Plant Science Building, Cornell University, Ithaca, NY 14853; phone: (607) 255-1629; email: fsr3@cornell.edu.

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Design & Production: NYS Turfgrass Assn. Latham, NY

Shinnecock Hills Golf Club to host 2018 U.S. Open

Shinnecock Hills Golf Club will play host to the 2018 U.S. Open in Southampton, N.Y., the United States Golf Association (USGA) announced. The championship will take place June 14-17, 2018.

"We are thrilled that our national championship will return to one of our country's most-storied venues," said USGA President Jim Hyler in a press release. "We are confident that Shinnecock Hills will provide a true challenge for the world's premier players, as it has for more than a century."

The 2018 championship will mark the fifth time the Shinnecock Hills Golf Club has hosted the Open. The club first hosted the tournament in 1896, when James Foulis won the championship by three strokes over Horace Rawlins. The U.S. Open was last played at the club in 2004, when Retief Goosen defeated Phil Mickelson by two strokes to claim his second U.S. Open title.

The 2018 championship will also mark the 19th time the U.S. Open will have been played in New York, which has hosted 66 USGA championships overall.

"On behalf of our members, I am delighted to welcome the USGA and the U.S. Open Championship back to Shinnecock Hills in 2018," said club President Robert A. Murphy, Jr. in the release. "Shinnecock Hills is very proud of our common heritage with the USGA dating back to the origins of golf in America, and we are equally excited about our strong future together."

Park District Outside of Chicago, IL Alters Pesticide Ban

Commissioners modified its turf management policies last week by allowing its grounds keepers to again deploy chemical pesticides and herbicides on its playing fields this fall. Four years ago, the district banned such practices when it launched an "Integrated Pest Management" program. The "progressive" move was praised as a model among parks organizations leading a natural lawn-care movement. The turf-maintenance principles shifted from pesticides to organic techniques, including intensified cultural practices to keep the turf in good condition. Corn gluten meal was tried but district officials reported odor problems and limited success. Alternative non-selective contact herbicides such as acetic acid have been sprayed and determined to be a better alternative to pesticides in some cases. On Aug. 18, however, park officials reported that the program has likely contributed to the worst field conditions the district has seen in a decade. Currently the post emergence herbicide application is being delayed due to continued concern by local citizen groups.

Higher Injury Rate on In-filled Synthetic Fields

According to a study presented at last year's Annual Meeting of the American Academy of Orthopedic Surgeons (AAOS), rates for Anterior Cruciate Ligament (ACL) injuries and eversion ankle sprains (where the foot twists outward) are significantly higher in the National Football League (NFL) games played on FieldTurf, an artificial playing surface, as compared to natural grass. The data from the study represents NFL game-related injuries that occurred to players during the 2002-2008 football seasons: Teams that played on FieldTurf surfaces showed an 88 percent higher ACL injury rate and a 48 percent increase in eversion ankle sprains. Per team game, the injury rate was 27 percent higher on FieldTurf surfaces than natural surfaces for all reported game- related lower extremity injuries. Dr. Hershman emphasized that his study only applies to NFL players and does not offer reasons as to why more injuries occur on FieldTurf. An abstract of the study can be found at: http://tinyurl.com/62yqv49

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fertilizer between December 1st and April 1st.

6. Any retailer selling or offering for sale phosphorus fertilizer for use on turf shall comply with the retail sale requirements of the law related to the display of phosphorus fertilizer and the posting of educational signs that contain the above information.

7. A local government may enact more stringent standards for the application of fertilizer for turf than this law, provided, however, that any local government that enacts such standards after January 1, 2012 must demonstrate to the NYSDEC prior to enactment that additional or more stringent standards are necessary to address local water quality conditions.

8. Penalties: Any person who violates any provision of this law shall be liable for a civil penalty not to exceed five hundred dollars for a first violation, and not to exceed one thousand dollars for each subsequent violation. Any owner or owner's agent, or occupant of a household who violates any provision of this law shall for a first violation be issued a written warning and be provided educational materials. Upon a second violation, they will be liable for a civil penalty not to exceed one hundred dollars, and for any subsequent violations shall be liable for a civil penalty not to exceed two hundred fifty dollars. No owner or owner's agent of a household shall be held liable for any violation by an occupant.

Do not make an application of lawn fertilizer between December 1st and April 1st: This refers to all fertilizers not just ones that might contain phosphorus including fertilizers derived from compost.

It is easy to comply with the law by following a few simple steps.

Soil test: First and foremost have your soil tested to determine if phosphorus is needed for healthy turf. The law does not state how to have the soil tested or where, but if you are going to spend money on testing it is good to have it done by a certified lab, a lab that makes phosphorus fertilizer recommendations and the recommendations are based on turf response research conducted in the past decade. There are both public and private labs that can do testing of this nature. However, the only New York-based public lab partnership is between Cornell University and AgroOne (see http://www.dairyone.com/AgroOne/default.htm) where AgroOne is responsible for the testing and Cornell makes the recommendation based on turf response research. There will be a less expense test ($7 instead of $12 for the expanded test) offered that

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only determines phosphorus and pH (use Form H).

Based on soil samples we have received at Cornell, most lawns in New York have adequate levels of phosphorus to support a healthy lawn. Therefore, many turf sites need little or no phosphorus.

Interestingly research conducted by labs over the past decade has shown that turf receiving phosphorus containing fertilizers has less phosphorus runoff than non-fertilized phosphorus turf except when the site has high runoff conditions of wet, poorly drained soils due to a high water table, bedrock near the surface or during prolonged periods of high rainfall.

Don't fertilize hard surfaces: If you do not want to pick up any fertilizer (not just phosphorus containing fertilizer) you apply to impervious surfaces (roads, sidewalks, driveways, etc.), then use spreaders that are more easy to control where fertilizer is applied. This includes drop spreaders, or spreaders with a guard or deflector shield. If there are low wind conditions that do not cause drift, sprayers may also be an effective way to control the application of fertilizer.

The law allows you to continue to use phosphorus fertilizer on lawn and nonagricultural turf after January 1, 2012, if the fertilizer was purchased prior to January 1, 2012, the effective date of the law.

When you are near surface water: If there is not a vegetative buffer of at least 10 feet add one near surface water (streams, lakes, rivers). The law does not specify what a continuous vegetative buffer is; it could even mean a non-phosphorus fertilized turf. You can fertilize within 3 feet of surface water if the fertilizer is applied by a device with a spreader guard, deflector shield or by using a drop spreader. Be careful with the fertigation system if the application of nutrient containing irrigation water is either directly within the 20 foot buffer zone or if windy where drift can occur.

Do not make an application of lawn fertilizer between December 1st and April 1st: This refers to all fertilizers not just ones that might contain phosphorus including fertilizers derived from compost.

Compost based fertilizers: Fertilizers that are derived from composts may be applied to all turf sites between April 1st and November 30th, except within 20 feet of surface water as noted above. We have observed however that compost (especially

New York State Turfgrass Association

Calendar of Events

2012

January 24-25	**Southeast Regional Conference** Ramada Inn, Fishkill, NY
February 13	**Western Regional Conference** Millennium Hotel, Buffalo, NY
March 7	**2012 Turfgrass Advocacy - NYSTA's Lobby Day** Empire State Plaza, Meeting Room 1, Albany, NY
March 21	**Adirondack Regional Conference** High Peaks Resort, Lake Placid, NY
November 13-15	**Empire State Green Industry Show** Rochester Riverside Convention Center, Rochester, NY

For more information go to www.nysta.org or contact our office at (518) 783-1229.

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Know your local law, if they exist they will be more restrictive: laws have been adopted in Westchester, Nassau, Suffolk, Rockland and Chautauqua Counties and the Village of Greenwood Lake. Other municipalities are considering similar more restrictive laws.

ones from manure) can often contain high amounts of phosphorus that can eventually result in soils that are very high in phosphorus and have very high amounts of phosphorus runoff from turf sites. Use soil tests as a guide. If soils are already high in phosphorus consider not applying compost based fertilizers if they contain too much phosphorus.

What if I still have phosphorus containing fertilizer (> than 0.67% P_2O_5), can I use them? The law allows you to continue to use phosphorus fertilizer on lawn and nonagricultural turf after January 1, 2012, if the fertilizer was purchased prior to January 1, 2012, the effective date of the law. The law was passed about a year and a half before it has become effective which should have given ample time to use up all the fertilizer you had purchased.

Know your local law, if they exist they will be more restrictive: laws have been adopted in Westchester, Nassau, Suffolk, Rockland and Chautauqua Counties and the Village of Greenwood Lake. Other municipalities are considering similar more restrictive laws. If you live or commercially apply fertilizer in those counties (or Village of Greenwood Lake) then become familiar with their laws and what is more restrictive than the state law. Below lists some of the parts of those laws that are more restrictive than the state law, but consult your local law for more details.

Locations where restriction is greater than the state law:

- Suffolk County

No fertilizer application between November 1 and April 1

- Nassau County

No fertilizer application between November 15 and April 1

- Westchester County

Fertilizer must be 0% phosphorus not up to 0.67% phosphorus.

- Chautauqua County

Fertilizer must be 0% phosphorus not up to 0.67% phosphorus, no exception for 10 foot vegetative buffer or controlled application spreaders within 20 feet of surface water.

Marty Petrovic, Ph.D.,
Cornell University

NEGCSA Poa Annual Golf Tournament

From left - right: Joseph Charbonneau, Matrix Turf Solutions, LLC; Dan St. Laurent and Ed Downing, New England Specialty Soils (NESS) show their support for green industry research and education by attending the NEGCSA Poa Annual Golf Tournament held at Normanside Country Club in Delmar, NY.

NYS IPM Program Funded to do IPM for NYS Schools

School managers across New York State are acutely aware of the new rules for turf management imposed by the Child Safe Playing Fields Act, and they face similar challenges indoors. Everyone wants to minimize kids' exposure to both pests and pesticides—the goal of IPM. The NYS IPM Program has been addressing this challenge for the last decade, and recently received a boost from a federal Smith Lever grant. Jennifer Grant, Ph.D., Assistant Director of the program, was awarded $57,000 to work along with IPM Specialists Lynn Braband and Jody Gangloff-Kaufmann, Ph.D. to foster IPM in New York State schools.

The funders recognize that children are known to be more sensitive to the effects of environmental contaminants than adults. Their developmental patterns, physiology and behavior make them more susceptible to pesticides, and they have less ability to detoxify chemicals. New research links children's exposure to organophosphates with attention deficit disorder. The rising incidence of asthma throughout the US, particularly in low-income communities, may be exacerbated by poor pest management practices that expose individuals to pests (such as cockroaches) or pesticides used to control them. However, integrated pest management has been shown conclusively to reduce: 1) pests more effectively than conventional pest control, 2) pesticide exposure and 3) indoor allergens among children living with asthma in NY.

There are approximately 700 public school districts in NY, including the largest district in the US, New York City. The majority of NY's 4.4 million school children go to public schools, and spend a significant part of their time there. The public has voiced its desire to minimize both pests and pesticide use in schools, as evidenced by the new ban on pesticide use on school and day care center grounds. Both the EPA and USDA have expressed that promoting the safety of children in public schools is a public responsibility and consistent with their priorities. Both agencies are founders and contributors of the School IPM 2015 initiative www.ipminstitute.org/school_ipm_2015/index.htm, that set the goal of having IPM in all the nation's schools by 2015.

The grant funds multiple objectives, including the promotion of the adoption of verifiable IPM, such as IPM Star, in schools through extensive training for school facility managers. IPM Star is a national accreditation for the high level practice of IPM, http://www.ipminstitute.org/ipmstar.htm. Schools that are currently IPM STAR certified will host a minimum of 4 trainings over 2 years, and their exemplary managers will serve as peer mentors. On-site assessments of school IPM programs will also be conducted as a learning tool and to encourage participants to attain Star certification. NYS IPM's large network of collaborators and stakeholders will be instrumental in accomplishing this objective.

IPM Star is a national accreditation for the high level practice of IPM. Schools that are currently IPM STAR certified will host a minimum of 4 trainings over 2 years, and their exemplary managers will serve as peer mentors.

The award also reinstates the Statewide School IPM Committee that was suspended last year due to funding and staffing cuts to the NYS IPM Program. This committee is comprised of a wide array of individuals, both public and private, who implement school IPM or are affected by pest management in schools. It works in conjunction with the Community IPM Coordinating Council to keep appraised of school IPM needs and activities in the state and nationally, and discuss IPM issues, priorities and solutions. The first meeting since reinstatement was held in October, and featured a demonstration of heavy overseeding on a multi-sport playfield, and the use of alternative herbicides.

Additionally, the grant enables NYS IPM to collaborate on a project collecting data on the association between asthma related absences and pest management practices in schools. Collectively, the school IPM efforts supported by this funding will help promote the national goal of IPM being practiced in all the nation's schools by 2015. Partners include the NYS Association for Superintendents of School Buildings and Grounds, Cornell Cooperative Extension Educators, the IPM Institute of North America, the Northeast School IPM Working Group, and the Association of Educational Safety and Health Professionals.

Jennifer Grant, Ph.D.,
Cornell University,
New York State IPM Program

Southeast Regional Conference

January 24-25, 2012
Ramada Inn, Fishkill, New York

Hudson Valley GCSA Meeting, Tuesday, January 24, prior to the Half-Day Seminar

Joseph Vargas, Jr., Ph.D., Michigan State University

TUESDAY, JANUARY 24, 2012 • .35 GCSAA EDUCATION POINTS

12:30 pm	Registration & Refreshments
1:00-5:00 *(15 minute break included)*	**HALF-DAY SEMINAR** DEC Credits: 3a, 3b, 10 and 25 = 3.50 each | CNLP Credits = 4.0 | STMA CEUs = .35 ***Turfgrass Disease Update with New Chemistry Controls*** Joseph Vargas, Jr., Ph.D., Michigan State University

WEDNESDAY, JANUARY 25, 2012 • .60 GCSAA EDUCATION POINTS

6:00 am	Registration & Coffee
6:30-7:30	**EARLY BIRD** DEC Credits: 3a, 3b and 10 = 0.50 each | CNLP Credits = 1.0 | STMA CEUs = .1 ***Summer Stress and How to Manage it*** - Joseph Vargas, Jr., Ph.D., Michigan State University
7:30-8:15	Trade Show & Break
8:15-9:45	**GENERAL SESSION** DEC Credits: CORE = 1.00 | CNLP Credits = 0.5 | STMA CEUs = .15 | ISA CEUs = 1.5 ***NYSDEC Regulatory Update: Pesticide Registration and Inspections*** - Catherine Ahlers, New York State Department of Environmental Conservation ***NYSDOT Update: Rules of the Road, How to Prepare for an Inspection*** - Douglass Eighmey, New York State Department of Transportation, Commercial Vehicle Safety Bureau ***Aboveground Fuel Storage Compliance*** - Tony Rizzi and Pat Dunn, American Petroleum Construction & Equipment Co., Inc.
9:45-10:30	Trade Show & Break

10:30-12:00	GOLF TURF	LAWN & LANDSCAPE/CLT TRAINING	SPORTS TURF
	DEC Credits: 3a, 3b and 10 = 0.50 each CNLP Credits = 1.5 ***The Science of Physical Properties in the Real World… Beyond the Textbooks*** David Doherty, International Sports Turf Research Center, Inc.	DEC Credits: 3a, 9, 10 and 25 = 1.50 each CNLP Credits = 1.5 | STMA CEUs = .15 ISA CEUs = 1.0 ***Surveying the Landscape Pests of 2011, in Preparation for 2012*** Rick Harper, Cornell Cooperative Extension of Westchester County	DEC Credits: 3a, 3b and 10 = 1.50 each CNLP Credits = 1.5 | STMA CEUs = .15 ***IPM for Kentucky Bluegrass Athletic Fields*** Joseph Vargas, Jr., Ph.D., Michigan State University

12:00-1:00	Lunch & Trade Show

1:00-2:00	GOLF TURF	LAWN & LANDSCAPE/CLT TRAINING	SPORTS TURF
	DEC Credits: 3a and 10 = 1.00 each CNLP Credits = 1.0 | ISA CEUs = 1.0 ***Managing Trees in a Golf Course Setting*** Rick Harper, Cornell Cooperative Extension of Westchester County	DEC Credits: 2, 3a, 9, 10 and 25 = 1.00 each CNLP Credits = 1.0 | STMA CEUs = .1 ISA CEUs = 1.0 ***Not so Evergreen? Recognizing and Controlling Diseases on Conifers in the Landscape*** Jennifer Stengle, Cornell Cooperative Extension of Putnam County	DEC Credits: 3a, 3b and 10 = 1.00 each CNLP Credits = 1.0 | STMA CEUs = .1 ***IPM for Athletic Fields – Looking Ahead to Save Your Behind*** Tamson Yeh, Ph.D., Cornell Cooperative Extension of Suffolk County

2:00-2:30	Trade Show & Break

2:30-3:30	GOLF TURF/LAWN & LANDSCAPE/CLT TRAINING	SPORTS TURF
	DEC Credits: 2, 3a, 6a, 9, 10 and 25 = 1.00 each CNLP Credits = 1.0 | STMA CEUs = .1 ***Identifying and Developing Management Programs for Invasive Plants*** Randy Prostak, University of Massachusetts Extension	DEC Credits: 3a, 3b and 10 = 1.00 each CNLP Credits = 1.0 | STMA CEUs = .1 ***IPM for Athletic Fields – Now Do I Really Have to Eat the Dandelions?*** Tamson Yeh, Ph.D., Cornell Cooperative Extension of Suffolk County

2012 NYSTA Conference Sponsorship

Events available for sponsorship:

Southeast Regional Conference | Western Regional Conference
Adirondack Regional Conference | Winning Fields Seminar

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Would you like a fast and easy way to reach members of the green industry? Has your company released a new product/service? If the answer is yes, then you should consider sponsoring an issue of the new NYSTA e-newsletter Stay Connected. This e-newsletter will be emailed six times a year to our members. Your sponsorship ad can be text-based – as long or as short as you would like or a graphic display. We will place your ad in the body of the e-newsletter where it will then be sent directly to over 900 key green industry decision-makers. Your sponsorship will allow NYSTA to provide this e-newsletter as a member benefit.

If you are interested in this new advertising opportunity, complete this form and submit to the address below, or contact us for more information.

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Western Regional Conference

February 13, 2012
Millennium Hotel, Buffalo, New York

Frank Wong, Ph.D.,
Bayer Environmental Science

	Monday, February 13, 2012 • .60 GCSAA Education Points		
7:00-7:30	Registration & Coffee		
7:30-8:00	Trade Show & Welcome		
7:45-8:00	Welcome and Legislative Update - Rick Holfoth, CGCS, Country Club of Rochester		
8:00-9:00	**GENERAL SESSION 1** **DEC Credits: 3b = 0.50; 3a, 10 and 25 = 1.00 each • CNLP Credits = 1.0 • ISA CEUs = 0.5 • STMA CEUs = .1** ***Disease Management for Turf*** - Frank Wong, Ph.D., Bayer Environmental Science ***Disease Management for Trees & Shrubs*** - George Hudler, Ph.D., Cornell University		
9:00-9:15	Break		
9:15-10:00	**GENERAL SESSION 2** **DEC Credits: 3a, 3b and 10 = 0.25 each; CORE = 0.50 • CNLP Credits = 0.75 • ISA CEUs = 0.75 • STMA CEUs = .075** ***NYSDEC Regulatory Update*** - Michael Nierenberg, New York State Department of Environmental Conservation ***How to Comply With the New Phosphorus-Fertilizer Restriction Bill*** - Marty Petrovic, Ph.D., Cornell University		
10:00-10:45	Trade Show & Break		
10:45-11:45	**GOLF TURF** **DEC Credits: 3a, 3b and 10 = 0.50** **CNLP Credits = 1.0 | STMA CEUs = .1** ***Getting the Most Out of Irrigation*** Marty Petrovic, Ph.D., Cornell University	**SPORTS TURF** **CNLP Credits = 1.0 | STMA CEUs = .1** ***Constructing a State of the Art Sand-Based Field*** Chad Laurie, Buffalo Bisons Baseball	**LAWN/LANDSCAPE** **DEC Credits: 2 = 0.50; 3a, 9, 10 and 25 = 1.00 each** **CNLP Credits = 1.0 | STMA CEUs = .1** **ISA CEUs = 1.0** ***Disease Update*** George Hudler, Ph.D., Cornell University
11:45-1:00	Trade Show, Lunch & Round Table Discussions *(Round Tables are first come, first served seating)*		
ROUND TABLE TOPICS **CNLP Credits = 1.0** **STMA CEUs = .1**	1. **Recovering Turf from the Severe Weather of 2011** - Daniel Schied, CGM, CNLP, University of Rochester **[DEC Credits: 3a, 3b and 10 = 0.50 each]** 2. **Hot Topics in Turfgrass Disease Control** - Frank Wong, Ph.D., Bayer Environmental Science **[DEC Credits: 3a, 3b, 10 and 25 = 1.00 each]** 3. **The Science, Art and Logistics of Insect Pest Identification** - Daniel Peck, Ph.D., EntomoTech Fundamentals **[DEC Credits: 3a, 3b, 9, 10 and 25 = 1.00 each; ISA CEUs = 0.5]** 4. **Pesticide Use and Label Requirements** - Michael Nierenberg, New York State Department of Environmental Conservation **[DEC Credits: CORE = 1.00 each; ISA CEUs = 0.5]** 5. **Tree Disease Management** - George Hudler, Ph.D., Cornell University **[DEC Credits: 3a, 10 and 25 = 1.00 each; ISA CEUs = 0.5]** 6. **Controlling Emerald Ash Borer** - William Snyder, Greenleaf Supply **[DEC Credits: 3a, 9, 10 and 25 = 1.00 each; ISA CEUs = 0.5]** 7. **Annual Bluegrass Weevil Management** - Benjamin McGraw, Ph.D., SUNY Delhi **[DEC Credits: 3a, 3b and 10 = 1.00 each]** 8. **Weed Management Strategies for Nurseries and Landscapes** - Brian Eshenaur, Cornell University Extension, NYS IPM Program **[DEC Credits: 3a, 3b, 10 and 25 = 1.00 each]**		
1:00-2:15	**GOLF TURF** **DEC Credits: 3a, 3b and 10 = 1.25 each** **CNLP Credits = 1.25** ***Turfgrass Disease Update for Western New York Golf Courses*** Frank Wong, Ph.D., Bayer Environmental Science	**SPORTS TURF** **DEC Credits: 3a, 3b and 10 = 1.25 each** **CNLP Credits = 1.25 | STMA CEUs = .125** ***Sports Turf Management without Pesticides for Schools*** Marty Petrovic, Ph.D., Cornell University	**LAWN/LANDSCAPE** **DEC Credits: 3a, 3b, 9, 10 and 25 = 1.25 each** **CNLP Credits = 1.25 | STMA CEUs = .125** ***Mechanical Control of White Grubs*** Benjamin McGraw, Ph.D., SUNY Delhi ***European Crane Fly Update*** Daniel Peck, Ph.D., EntomoTech Fundamentals
2:15-2:30	Trade Show & Break		
2:30-3:30	**GOLF TURF** **DEC Credits: 3a, 3b and 10 = 1.00 each** **CNLP Credits = 1.0 | STMA CEUs = .1** ***Annual Bluegrass Weevil Management*** Benjamin McGraw, Ph.D., SUNY Delhi and Daniel Peck, Ph.D., EntomoTech Fundamentals	**SPORTS TURF** **DEC Credits: 3a, 3b and 10 = 0.50 each** **CNLP Credits = 1.0 | STMA CEUs = .1** ***Recovering Turf from the Severe Weather of 2011*** Daniel Schied, CGM, CNLP, University of Rochester	**LAWN/LANDSCAPE** **DEC Credits: 3a, 10 and 25 = 0.25 each** **CNLP Credits = 1.0 | STMA CEUs = .1** **ISA CEUs = 1.0** ***Top Variegated Trees and Their Pest and Disease Resistance*** Thomas Draves, Draves Tree and Landscape

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Annual Bluegrass Weevil Management & the Importance of Conference Education

As we wind down another growing season in the Northeast we set our sights on preparing for the upcoming season. I believe that part of this preparation should be spent improving, not just our turf stands, but ourselves. Excellent opportunities exist for furthering your education while attending a state, regional or national conference. The "President's Message" in the September 2011 issue of Golf Course Management highlights some benefits of attending education conferences. I would like to add another benefit realized while attending such conferences: the chance for you to influence the direction of turfgrass research.

Each year I have the opportunity to speak at several state and regional conferences such as NYSTA's regional conferences and the Empire State Green Industry Show in Rochester. I thoroughly enjoy giving these talks and I look forward to the education that I receive from interacting with the audience. Last February I was invited to speak at the Northeastern Golf Course Superintendent Association's Educational Symposium. The talk was to focus on the current recommendations for controlling the annual bluegrass weevil. During the informal back-and-forth question-and-answer period a member of the audience suggested the possibility that turfgrass managers and researchers may be missing opportunities for controlling the weevil.

Most turfgrass managers try to avoid widespread turf loss by treating adult populations as they emerge in the Spring from overwintering sites and walk on to the shorter mown playing surfaces on the course (e.g. greens, fairways, tees). Once on the playing surfaces, it is believed that mating and egg laying commences. If left untreated, eggs develop into larvae that bore into the stem of the plant and become harder to control with conventional insecticides. The audience member offered a suggestion that maybe our philosophy on the timing and location of applications is flawed, and that opportunities may exist to control the pest prior to arriving on playing surfaces. The approach proposed (which is currently being explored by some consultants in the region) involves applying combination products (e.g. products containing a neonicotinoid and a pyrethroid) to the playing surfaces and surrounding rough several weeks prior to adult emergence. The earlier application date allows the plant to take up the systemic component of the insecticide, essentially "loading" the plant in anticipation of the movement of adults.

The systemic approach is one

that is worth further examination. However, to date, remains scientifically unproven. Systemics insecticides (e.g. neonicotinoids) when applied alone have been shown to only moderately reduce larval densities (40-50 % control) when applied after egg laying has been initiated. To my knowledge, no one has examined the effect that systemics have on adults. A major hurdle to the systemic approach is that it largely hinges on the belief that, after adult weevils emerge from their winter slumber, they will intermittently feed on the turfgrasses in the rough while migrating to the playing surfaces. If the theory is correct and adults do feed, "loading" the rough with insecticides presents opportunities to target sprays and greatly reduce populations before they get to the higher valued areas. However, if this is not the case, then time, money and labor are wasted, and large areas of the course are receiving chemicals where they are not affecting pest populations, but instead impacting non-target and beneficial insect populations.

The educational session provided excellent food for thought. In the Spring, a collaborative research project was initiated to explore basic ABW biology and behavior and to determine whether the systemic approach has value in an integrated approach to controlling ABW. Research conducted in concert between Pat Vittum's lab at UMass and my lab at SUNY-Delhi examined ABW feeding, mating and egg development in populations in NY, CT, and MA. Adults were vacuumed sampled from greens, tees and fairways bi-weekly from the beginning of emergence from overwintering sites through summer. Adults were dissected and examined for presence of food in their guts and reproductive system maturity. We observed two waves in peak density of adult emergence on playing surfaces (as noted in past published studies), which ultimately could lead to the confusion of the timing and perceived efficacy of current and traditional adulticides. Additionally, we did not observe fresh food in the guts of adults until the end of May, long after adults arrived on playing surfaces and had deposited eggs. The observations were extremely consistent across multiple populations in the region. Though the results are preliminary and represent only one year of observations, they do suggest that adults emerge from winter with enough energy to walk on to playing surfaces, mate, and deposit eggs. It remains unclear as to why adults do not feed after emergence, but more importantly, questions the role that systemic insecticides applied to roughs have in the management of ABW.

The approach proposed (which is currently being explored by some consultants in the region) involves applying combination products (e.g. products containing a neonicotinoid and a pyrethroid) to the playing surfaces and surrounding rough several weeks prior to adult emergence. The earlier application date allows the plant to take up the systemic component of the insecticide, essentially "loading" the plant in anticipation of the movement of adults.

I have heard a colleague say that superintendents cannot wait for the research world to figure out their problems. I agree that the scientific process is often slow, and with the lack of scientific funding available for applied turfgrass research many problems are often understudied. However, in this case, what started as an astute audience member's question has an immediate impact and morphed into an interesting research project. My advice: Get out, attend an educational conference, interact with researchers, and make your opinions and observations known. You never know how your insight may influence the next generation of research.

Ben McGraw, Ph.D.,
SUNY Delhi

Weed Management Under the School Pesticide Ban

A common concern for groundskeepers and pesticide applicators affected by the NYS Child Safe Playing Fields Law (Chapter 22, Laws of 2010) is how to control weeds without the use of herbicides. Glyphosate, the active ingredient in Monsanto's RoundUp herbicide, was the most common herbicide used for weed control on school grounds until the recent enactment of the state law banning most pesticides from school turf, athletic fields, and playgrounds. Most herbicides cannot be applied on school grounds and day care centers throughout the state, unless an emergency application is granted for one-time use. Routine applications of glyphosate are not permitted under the law.

The NYS Department of Environmental Conservation (DEC) allows for the routine application of herbicides that are exempt under section 25b of the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA). The law explicitly states that all active ingredients in the herbicide must be exempt under 25b, and that all inert ingredients must be eligible under List 4a of FIFRA. We have identified eight post-emergent, non-selective herbicides that work as burn-down products allowable under the new state law. See http://www.hort.cornell.edu/turf/pdfs/allowable_herbicides_schools.pdf for the full list of allowable herbicides. The active ingredients in the products include cinnamon oil, clove oil, citric acid, eugenol, or lemongrass oil. Cornell Turfgrass, NYS Community IPM, and Cornell Cooperative Extension (Suffolk and Albany Counties) are currently testing the efficacy of these alternative herbicides for use on fence lines, asphalt, and sidewalks, in addition to evaluating their effectiveness for reestablishing new turf.

Other non-chemical weed management strategies include thermal weeding with steam or propane flames. Weedtechnics is a company based in Australia that focuses on steam weeding equipment and contract services. Their manufacturing operations are located in California, and have recently begun offering services in the United States. In 2012, Cornell Turfgrass will be evaluating the cost effectiveness and practicality of using steam weeding in a school district. Both steam and propane flame weeding rely on short bursts of intense heat to knock down plant tissues in contact with heat. Thermal weeding works most effectively with young plants and is helpful in depleting annual weed seed banks.

Cultural techniques in weed management on school grounds and day care centers include enhancing labor efficiency with mechanical weeding, maintaining weed suppressive landscapes, using overseeding, and maintaining optimal growing conditions for turfgrasses. Raising the height of new fence installations (that allow for a 3" gap between the turf and the base of the fence) will reduce the time required for mechanical removal with a weed whacker or brush cutter. Underlying the fences with an impermeable surface, such as with concrete, can reduce labor costs with weed control at fence lines. Heavy mulching and use of weed barrier fabrics within ornamental gardens will enhance weed suppression. Patching cracks in asphalt or sidewalks will reduce the need for chemical and thermal weed control. Overseeding in the Spring and Fall will help turfgrasses develop a dense canopy. For Fall overseeding programs on playing fields, seeding with perennial ryegrass at a rate of 10 lbs per sq. ft. each week will enhance a denser cover of turf. Seeding problematic areas, such as high traffic fields or goal nets, on a routine basis can help reduce the persistence of bare soil or weak turf density. Maintaining optimal levels of soil fertility, soil pH, and soil aeration, along with alleviating soil compaction will improve turf growth and cover.

Table 1: EPA 25(b) FIFRA exempt herbicides that do not require "emergency application" approval

Product Name	Active Ingredient(s)	Parent company
Ecosmart Weed & Grass Killer	2-Phenethyl Propionate, eugenol	EcoSMART
Burnout II Weed & Grass Killer	Citric acid & clove oil	St. Gabriel Organics
Weed Zap	Cinnamon oil, clove oil	JH Biotech Inc.
C-cide	Citric acid	Biological Solutions
Brush, Weeds, and Grass Herbicide	Citric acid	Greenergy
Matratec	Clove oil	Brandt
Matran EC	Clove oil	EcoSmart Technologies
Several (Bradfield Organics, Espoma Organic)	Corn gluten meal	Several
GreenMatch Burndown Herbicide	Lemongrass oil	Bio Marrone Innovations

Jenny Kao-Kniffin, Ph.D.,
Cornell University

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Individual memberships are open to all persons concerned with the turfgrass industry and include all rights and privileges including voting and holding office.

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4. _____

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Retired memberships are open to those persons who have previously been employed full-time in the turfgrass industry and have been members of NYSTA.

Turfgrass Research and Education Contribution: $_____

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Organization dues may be deductible as professional or business expenses to the extent allowable by law.

Dues and other contributions to local, state or national associations are not deductible as charitable contributions for federal income tax purposes.

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the root system.

Slow release products were available mostly as organic forms that would release based on soil temperature and moisture. These products were developed by coating traditional water-soluble sources with compounds that would slow their release or react with other chemicals to create products that released the nitrogen more slowly over time.

The goal of slow release nitrogen was to minimize the number of applications required by pulsing the nitrogen to the plant in a way that might mimic soil available nitrogen. This would provide a sustained response much longer in duration than the typical water soluble sources. It is interesting to note there has been cyclical interest in coating products for a "one application per year" strategy, theoretically to meet the plants needs over the season through sophisticated coatings.

Regardless of the technological developments fertilizer costs have increased and the more technology in the bag, vis a vie, slow release formulations the more the product cost. Of course the argument for slow release is that it lowers labor costs by requiring fewer applications.

Yet with all the energy directed towards fertilizer technology very little effort has been exerted to add precision to the amount, timing and frequency of applications required to sustain a healthy turf. It seems the one-pound application rate four to five times per year is still sacred. That is until the questions began to increase over the impact of lawn fertilizer on water quality.

Yet with all the energy directed towards fertilizer technology very little effort has been exerted to add precision to the amount, timing and frequency of applications required to sustain healthy turf. It seems the one-pound application rate four to five times per year is still sacred. That is until the questions began to increase over the impact of lawn fertilizer on water quality.

N and Water Quality

Eutrophication is the slow, natural nutrient enrichment of streams and lakes and is responsible for the "aging" of ponds, lakes and reservoirs. Excessive amounts of nutrients, especially nitrogen and phosphorus, speed up the eutrophication process. As algae grow and then decompose they deplete the dissolved oxygen in the water. This condition usually results in fish kills, offensive odors, unsightliness, and reduced attractiveness of the water for recreation and other public uses.

Excessive nitrate in drinking water can cause human and animal health problems, particularly for small babies. The United States Public Health Service has established a specific standard of 10 milligrams of nitrate nitrogen per liter as the maximum concentration safe for human consumption. Problems in adults that drink water with excessive nitrate are essentially nonexistent and are rare in infants. Nevertheless concern over the use of nitrogen in lawn and landscapes has led to a growing number of regulations. The regulations run the gamete from local timing and rate restrictions to larger scale watershed restrictions on total loading amounts. Areas such as the Peconic Bay Estuary and the Chesapeake Bay Watershed are poised to enact large-scale restrictions on fertilizer use for lawns.

Recent research conducted under the direction of Professor Karl Guillard at the University of Connecticut has raised the question of the "sacred" one-pound per 1000 square feet application rate

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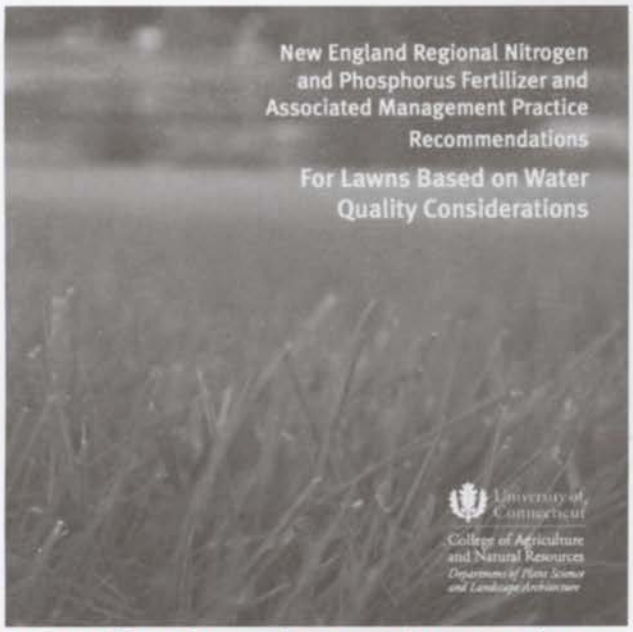
and interval. Professor Guillard's work suggests that at any one time maybe about a one-half pound rate might be adequate for the desired response. This research has been ground-breaking in many ways, questioning the long held dogma of many of our current fertilizer practices.

Additionally, research investigating water quality and lawn fertilization has concluded that slow release nitrogen sources do add a level of safety but still the overall loading rates remain a concern. Furthermore, while some precision is being added to in-season application of nitrogen, either by reduced rate or extended frequencies due to the age of the lawn, few have questioned the application of nitrogen in the late season when most top growth has slowed.

Late-Season Nitrogen

Some of the oldest turfgrass research has espoused the benefits of applying nitrogen at the end of the growing season prior to the onset of winter. The agronomic benefits of enhanced rooting, reduced Spring clipping production, enhanced Spring green-up, enhanced winter hardiness, etc. have been well established.



These earlier application times combined with the lower application rates provide adequate agronomic benefits with reduced overall leaching problems. This is the kind of research we need to get out into the hands of practitioners and regulators to help them enact enforceable, science-based regulations. Not regulations based on conjecture.

Still as the discussion about nitrogen has evolved to include water quality, research has indicated that independent of the source of nitrogen the later in the season the application is made the more leaches into the groundwater. Clearly there is an environmental concern related to late season nitrogen use, in-spite of the well-established agronomic benefits. It then becomes a question of balancing the two needs.

Several studies have investigated sources and timing to reveal some interesting results. Oddly while most of the research was conducted with various nitrogen sources it was always applied at the "sacred" one pound of actual nitrogen per 1000 square feet rate.

More recent cool-season turfgrass research on Kentucky bluegrass and perennial ryegrass at the University of Wisconsin-Madison and here at Cornell University has begun investigating reduced rates using different nitrogen sources applied at different timings from September through December. To date it appears the agronomic benefit from late season nitrogen can be achieved by applying inexpensive forms of water-soluble urea or ammonium sulfate at 0.3 to 0.5 lbs per 1000 square feet in September or October.

These earlier application times combined with the lower application rates provide adequate agronomic benefits with reduced overall leaching problems. This is the kind of research we need to get out into the hands of practitioners and regulators to help them enact enforceable, science-based regulations. Not regulations based on conjecture.

As an industry we need to be open to the evolving ideas that science brings to enhance our precision. In the end it will lead to improved efficiencies. Heck if we get the same response with less nitrogen that was leaching anyway and the sources we use are less expensive, who'd argue with that?

Professor Guillard and colleagues in the New England states have produced an excellent publication that addresses this as well as other fertilizer and water quality issues available at www.lawntolake.org/PDFs/NE_WQ_Fert_Rec.pdf.

Of course many scientific and logistical questions remain about late season nitrogen. There are questions concerning uptake mechanisms, evapotranspiration, disease issues and further refining application strategies before a complete picture can be drawn, but for now as Twain would say, let the conjecture begin.

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Healthy Ecosystem

However during the last decade growing concern for the effect of nitrogen on water quality and the overall effect of global fertilizer demand on price called the question. How real is the benefit of late season applied nitrogen and if there is a benefit how much is enough?

New Ideas About Late Season Nitrogen Fertility

Mark Twain once wrote, "There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact." Oddly this is the best way to describe how the "dogma" of late season nitrogen and fertilization has evolved in turf.

For much of the last 40 years few have questioned the value of applying high rates of nitrogen to almost dormant turf just prior to the onset of winter. There appeared to be a significant benefit, fertilizer was relatively inexpensive when compared to other inputs, and it provided an additional service opportunity to most lawn and landscape firms.

However during the last decade growing concern for the effect of nitrogen on water quality and the overall effect of global fertilizer demand on price called the question. How real is the benefit of late season applied nitrogen and if there is a benefit, how much is enough?

History of N

Nitrogen is considered the most important macronutrient for turf growth. At between three to four percent of plant tissue, nitrogen is the most abundant in the plant after carbon, hydrogen and oxygen.

While it surrounds the plants in the atmosphere and is often abundant in various forms in the soil, it is most limiting nutrient for turf gro Consequently it is the most com nutrient supplied by managers to mai healthy turf systems.

When I began in the turfgrass ind in early 1970's it was not uncomm apply in excess of eight to ten pounds of actual nitrogen per 1000 square feet. The goal was to keep the turf areas green and growing. If you were in the mowing management business you were happy to apply all that nitrogen, as it kept the mowers running throughout the season.

Over the years as the concern for the effect of landscapes on water quality increased and fertilizer prices increased in response to rising fuel prices, nitrogen application rates slowly declined. While there is still some debate over the exact amount required for most lawns, there is agreement that there is no need to return to the old days of double-digit annual rates.

As the turfgrass industry has evolved the number of nitrogen fertilizer options has increased. The old standard for nitrogen fertilizer was water soluble/quick release sources such as ammonium nitrate, ammonium sulfate or urea. An immediate response would be observed both in color and growth and then dissipate quickly as the nitrogen was taken up or leached past

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