CORNELL UNIVERSITY TURFGRASS TIMES

CUTT

2009 Issue 1 • Volume 20 • Number 1

Immigration Issues: Perceptions of Golf Course Superintendents

According to federal statistics, 11,870 golf courses and country clubs reported one or more employees in 2006. This industry generated a payroll of $7.8 billion (U.S. Census Bureau, 2008). The census definition of golf courses and country clubs includes 1) establishments primarily engaged in operating golf courses (except miniature) and 2) establishments primarily engaged in operating golf courses along with dining facilities and other recreational facilities that are known as country clubs. The top 10 golfing states (California, New York, Ohio, Florida, Michigan, Texas, Pennsylvania, Illinois, North Carolina, and Wisconsin), measured in terms of golf course/country club numbers, account for about half of all golf business establishments in the country (U.S. Census Bureau, 2008).

However, when looking at employment, the focal point of this study, aggregate federal data have two limitations. First, due to the seasonal nature of the industry, the size of the work force is understated because federal statistics report employee numbers during the week of March 12 each year and not during the peak of the season. A second concern relates to the types of golf course positions included in the census data. While the survey discussed in this report focuses only on golf course maintenance employees, the Census Bureau data on golf courses include additional workers in the golf facility including the pro shop, restaurant, etc.

With these limitations in mind, the Census Bureau reports just over 309,000 employees for the U.S. in 2006. The aggregate federal data demonstrate a slow but steady upturn in employment in this industry over the past decade, with employment numbers increasing by more than 39,000 or 14% over the 1998-2006 span. During that same time frame, the number of Hispanic workers hired into golf course maintenance positions is thought to have increased dramatically. Golf course superintendents across the United States have increasingly relied on Hispanic workers to staff golf course maintenance positions and increasingly report that local workers often are not interested in golf course maintenance work or do not have a strong work ethic. Anecdotal reports from golf course superintendents indicate that Hispanic workers make important contributions. They are willing to work

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This Times

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Clippings

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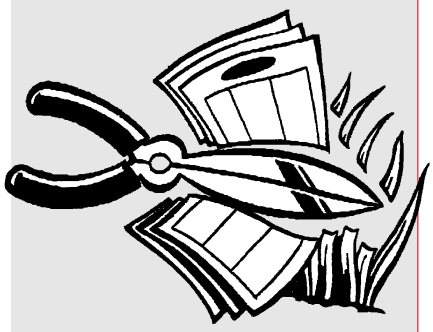

Award Honors Crew Who Make Golf Greener

Diehard golfers want it green and want it fast. They want the ball to roll quickly eight or ten feet at a tap of their club. And sure, Dave Catalano and his staff want it fast too. But for the crew at Bethpage State Park's world-renowned golf courses, it's about more than play…they're out to prove something. They are part of groundbreaking research to develop, test, and fine-tune techniques that steeply cut pesticide and fertilizer use. In other words, they want to green up golf.

Golf courses are often faulted for heavy pesticide use. Yet the Bethpage project has cut environmental impact up to 96 percent over conventional practices…and this in a climate where weather conditions and heavy foot traffic from 250,000 golfers each year ensure constant disease pressure. Home of the 2009 US Open, Bethpage State Park comprises five separate golf courses on its 1,500 acres in the heart of densely populated Long Island, just 25 miles east of the New York City line.

For their involvement in nearly a decade of research at Bethpage, Catalano, Andy Wilson, Craig Currier and Kathie Wegman have earned an Excellence in IPM award from the New York State Integrated Pest Management (NYS IPM) Program at Cornell University. Integrated pest management seeks least-toxic ways of dealing with pests.

"We can't emphasize enough how important long-term, real-world research is," said Jennifer Grant, assistant director of NYS IPM, who coordinates turf IPM research. "You don't get truly useful results until you've tested your work over time, keeping what works and incorporating promising new practices and products."

"As the largest public golf complex in the country, we believe in showing our commitment to the environment and to our public golfers by working with Cornell to develop IPM techniques and management programs," said Catalano. "It's how we provide outstanding playing conditions with the least environmental impact."

When Wilson is out on the green with his stimpmeter or moisture probe and a golfer asks what he's up to, the conversation could easily cut to the new tactics and products the crews are testing to deliver quality conditions with lower inputs. Wilson supervises Bethpage's aptly named Green Course, where core IPM practices are developed. That stimpmeter, for example, measures how fast the ball rolls, something golfers care a lot about. It tells Wilson more – it tells him whether IPM greens provide the same level of play. But when Wilson talks to other golf-course superintendents, he cuts to the essential ingredient in high-level IPM - careful

New York State Turfgrass Association

Calendar of Events

2009

December 7-11	**Cornell Turfgrass Short Course** Cornell University Campus, Ithaca, NY

2010

January 12-14	**Empire State Green Industry Show** Rochester Riverside Convention Center, Rochester, NY
February 23-24	**Southeast Regional Conference** Holiday Inn Suffern, Suffern, NY
March 1	**Western Regional Conference** Millennium Airport Hotel, Buffalo, NY
March 18	**Adirondack Regional Conference** Crowne Plaza Lake Placid Resort, Lake Placid, NY

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

recordkeeping. "It keeps your mind sharp, helping you think through alternate solutions to typical problems instead of falling back on the tried and true," Wilson said.

Just as essential is scouting - monitoring greens and fairways for insect, weed, and plant disease pests. "Scouting can be as low-tech as flushing insects from the turf with a lemon soap solution, or as high tech as looking at root pieces through a microscope to precisely identify a disease," said Kathie Wegman, Bethpage's IPM specialist. "We find out where the hot spots are and treat them, which lessens or even eliminates the need to spray."

But can steeply cutting pesticide use really produce satisfactory play? "Surveys consistently show high golfer satisfaction with IPM-managed greens at Bethpage," said Frank Rossi, professor and turf specialist at Cornell University. "This has been a monumental project, both in scope and impact."

Catalano, Currier, Wilson and Wegman received their award on behalf of all their colleagues on August 12, 2009 at the Cornell University Turfgrass Field Day at Bethpage State Park in Farmingdale, NY. To learn more about IPM, go to www.nysipm.cornell.edu.

Mary M. Woodsen

Linehan Receives NYSNLA 2009 CNLP of the Year Award

David Linehan, Jim Girard Landscape Maintenance Corp., received the New York State Nursery and Landscape Association and Certified Nursery and Landscape Professional Program CNLP of the Year Award. The award is given to an individual who has made outstanding and unselfish contributions to the nursery and landscape industry in the State of New York.

Dave has been a CNLP for 27 consecutive years and became a Lifetime CNLP in 2007. For many years, Dave has kept NYSTA members informed on the urgent matters that affect their businesses by providing detailed legislative reports. He received the NYSTA Citation of Merit award in 2002. He has also served as Chair of the NYSNLA's Legislative Committee.

The CNLP of the Year award was presented at the 2009 New York State Fair in Syracuse at an opening day ceremony held Thursday, August 27, 2009 in the Court of Honor.

Trotta Receives Environmental Quality Award

Global Sports Alliance-New York team captain, Kevin Trotta, has been honored with the United States Environmental Protection Agency's Environmental Quality Award, the highest regional recognition the Agency presents to the public. In honor of Earth Day, the US EPA recognizes individuals and organizations who have dedicated time and energy to "protecting and enhancing environmental quality" in EPA Region 2, which includes New York, New Jersey, Puerto Rico, the U.S. Virgin Islands and seven federally recognized Indian Nations.

Kevin was selected for his efforts in promoting environmental awareness and action in the world of sports and recreation. Projects have included local, regional and national initiatives to link sports-related activities with environmental stewardship and to introduce and advance GSA's Ecoflag campaign.

"I am honored that the EPA has recognized the work of GSA-New York," said Trotta. "and honored also to be an Ecoflag ambassador and member of the GSA family of environmental champions around the world."

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Pictured from left to right are environmental advocate Majora Carter, Kevin Trotta and EPA Administrator George Pavlou.

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Feature Story

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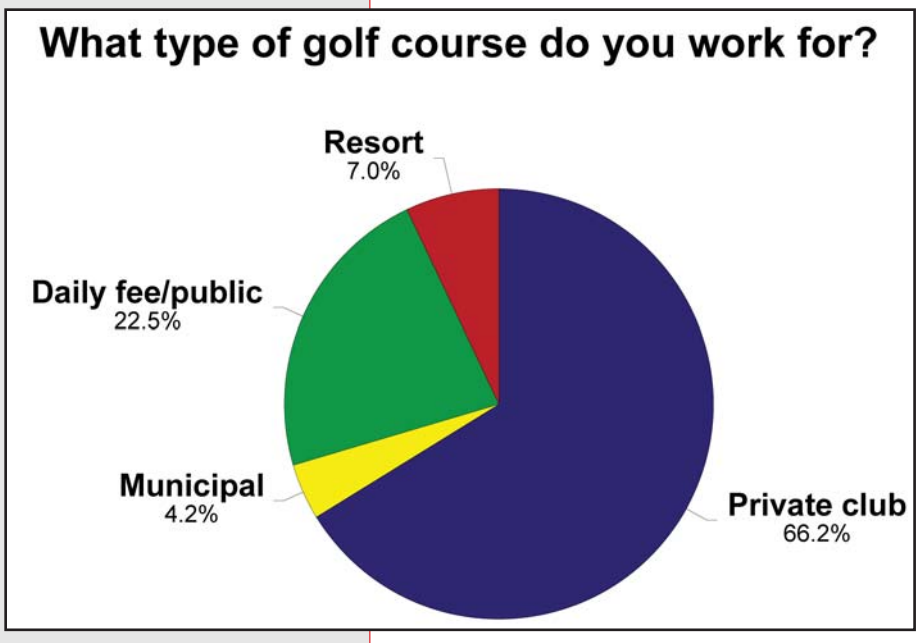
In recent years as the debate over immigration reform in the U.S. has escalated, the presence of Hispanic workers, especially those who may not be legally authorized to work in the U.S., has come under scrutiny by elected officials, the public and the media.

long hours, are very respectful, usually come from backgrounds in agriculture or horticulture and possess a very strong work ethic.

In recent years as the debate over immigration reform in the U.S. has escalated, the presence of Hispanic workers, especially those who may not be legally authorized to work in the U.S., has come under scrutiny by elected officials, the public and the media. This study is an initial attempt to gather information on the role of Hispanic immigrants in golf course maintenance positions and superintendents' attitudes regarding labor supply and immigration issues. To date, very little information has been collected regarding the impact that immigration issues, especially those relating to Hispanic workers, have on the golf course superintendent's profession.

Survey Objectives

The survey has three overall objectives. The first is to determine how concerned survey participants are regarding labor availability in the next 3 years. The second objective is to ascertain the importance survey participants place on immigration reform and their views regarding the development of future immigration policies. The third objective is to help identify what golf course superintendents perceive as their educational needs relating to immigration issues.



Methodology

The individuals who completed the survey were attendees at seminars presented by the lead author entitled "Managing the Hispanic Workforce." Two groups of individuals agreed to complete the survey form. The first group was 23 individuals who attended a conference in Stone Mountain Georgia in October, 2007. The second group of survey participants were 48 individuals who attended a seminar at the Golf Industry Show in Orlando, Florida in February, 2008. To avoid double counting, participants were asked to designate only one individual from each golf course to fill out the survey.

Only those superintendents who currently hire Hispanic workers were asked to participate. There are two reasons why this approach was taken. First, there is increasing anecdotal evidence that immigration issues are being widely discussed by golf course superintendents but there is little substantive information regarding the impact that Hispanic workers have on the industry. Second, superintendents who currently hire Hispanic workers have unique insights into the contributions the workers make to the industry, the immigration concerns the workers face and the impact immigration policy has on the availability of legal immigrant workers. This report attempts to describe these insights in detail.

Immigration Policy Solutions

Survey participants were asked the following question regarding how to solve current immigration problems. In your position as a golf course superintendent, what, in your opinion, would be the best solution to immigration issues facing the golf course management industry? Out of the 71 survey participants, 61 or 86% provided a written response to this

question, and the proposed solutions varied. Implicit in the participant responses was the recognition that recruiting legally authorized Hispanic workers is often a challenge. Superintendents are very aware of the immigration debate in the United States and generally feel that access to an authorized workforce is of paramount concern to their profession.

The responses, while varied, revealed several important themes. The most frequent set of responses (12) related to the perceived need for a process that would allow immigrants to achieve legal status to work in the U.S. but would not necessarily include citizenship. The second most frequent set of responses (10) encouraged the continuation and improvement of the H-2B program. Examples of suggested improvements included making the program easier to use and they especially wanted to see an increase in the number of H-2B workers allowed in the country annually.

A third set of responses (9) related to the desire to have a practical guest worker program that allows an authorized gateway for immigrants who want to work in the U.S on a seasonal basis. It is important to note that the H-2B program is in fact an established seasonal guest worker program already available to golf course superintendents. The suggestion of a more generic guest worker program, therefore, may imply a desire for a different or more streamlined program than the current H-2B program.

A fourth theme was immigration enforcement. Eight respondents made comments referring to enforcement either at the border or in the workplace. For example, one respondent called for "harsher penalties for employing illegals." Another said "no free rides" and a third said "enforce the laws already on the books."

A few respondents mentioned the issue of citizenship for unauthorized workers but not all were in agreement. Some wanted to see amnesty or similar opportunities for workers to become citizens, while others were strongly opposed to providing an easy path to citizenship for unauthorized workers.

Perhaps the best way to summarize respondents' feelings regarding an immigration solution is to say that they recognize the problems created by the presence of unauthorized workers and favor options for an immigration status that allows legal employment in the U.S. This does not necessarily mean provisions for an immediate path to citizenship. Rather, several superintendents expressed a desire to help their workers engage in a process that would allow them to work in the U.S. legally, either with a temporary work visa or an eventual path to citizenship.

Survey Implications and Discussion

In 2006, the PEW Hispanic Center reported that there were 6 million unauthorized immigrants working in the United Stated in 2005. Further, the report indicated that 25% of the workers in the grounds maintenance occupation were unauthorized. This is the sector that includes golf course workers. Considering these estimates, it stands to reason that the golf course superintendents surveyed are concerned about the legal status of workers who apply for golf course positions and the potential risks related

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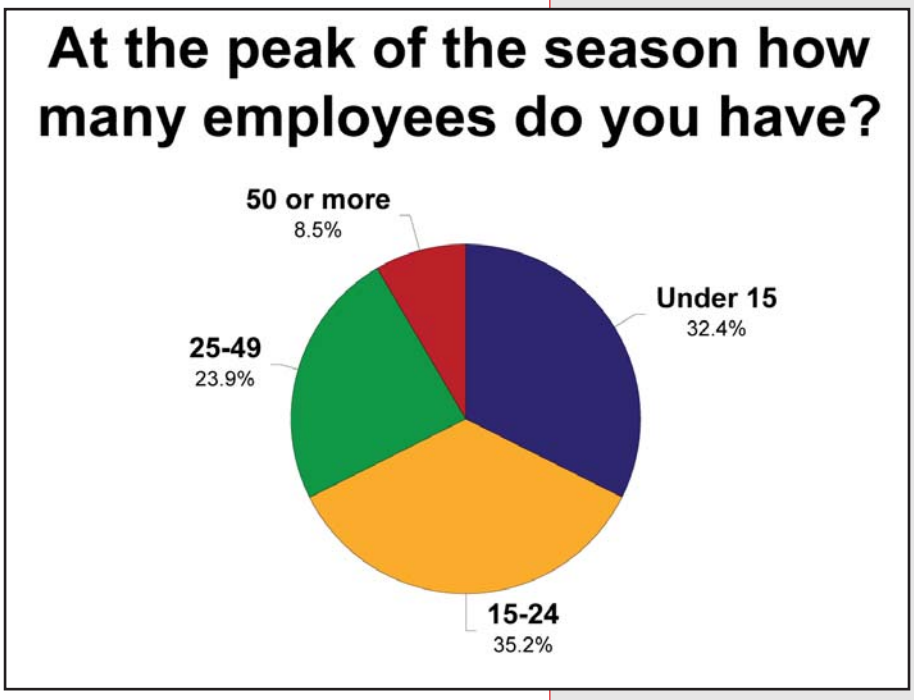

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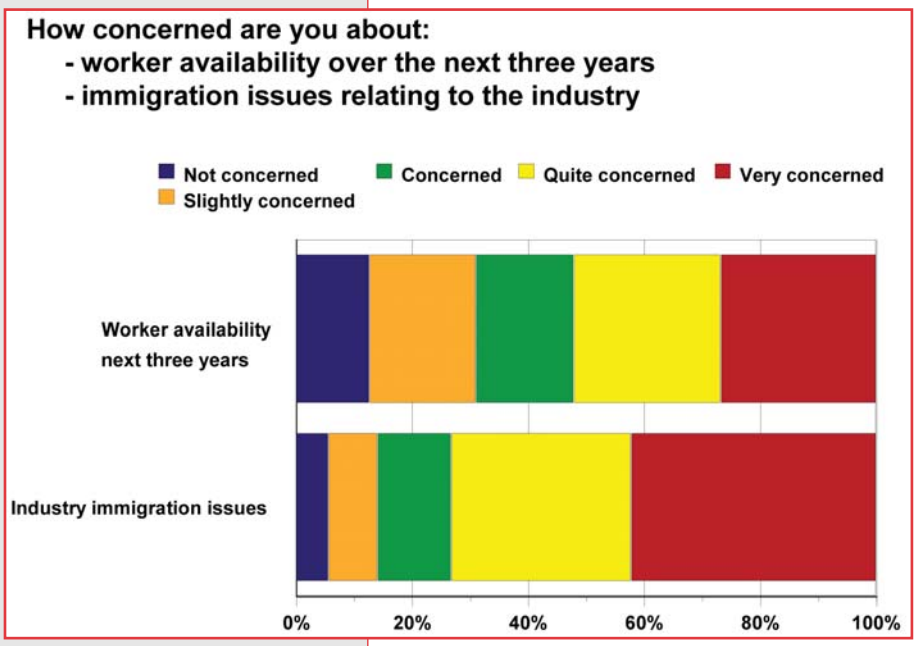
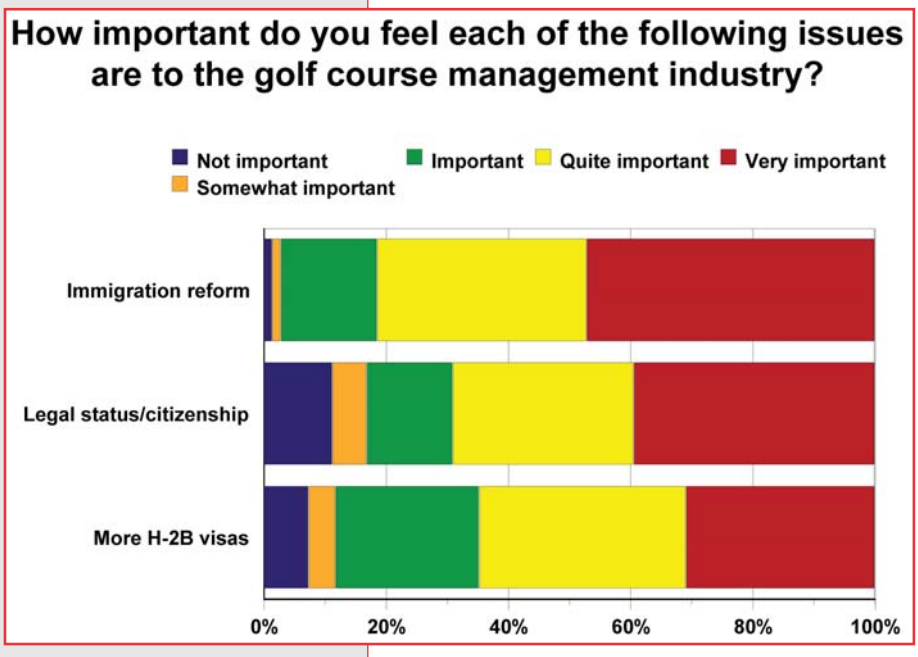
to hiring unauthorized workers. These concerns are strongly reflected in the survey responses. One notable example is that 10% of those surveyed said that they had a worker deported because he/she was unauthorized.

Perhaps one of the most striking survey results was the percent of Hispanic workers employed on the survey respondents' golf courses. One criteria of the survey was that each participant employs at least one Hispanic worker. On average, survey participants reported that 72% of their workforce at the peak of the season were Hispanic. Only 25% of the survey respondents reported that less than half of their workforce was Hispanic, suggesting that superintendents who hire Hispanic workers tend to hire mostly Hispanic workers.





The most common sentiment expressed by survey participants regarding immigration was the desire to hire immigrants who are legally authorized to work in the U.S. Likewise, participants indicated that immigration policy solutions should include ways for immigrants to become authorized to work in the U.S. before they arrive in the country. By their answers, it is clear that respondents recognize that many prospective employees in the immigrant labor pool are not legally authorized to work in the United States. They understand the regulatory implications and in a broad sense prefer options that provide them access to immigrant workers who are authorized to work and live in the U.S.

Survey respondents' concerns are illustrated in the graph to the left regarding worker availability and immigration issues. More than 60% said they were concerned, quite concerned or very concerned about worker availability over the next three years. Concern expressed over immigration issues was even greater.

Survey respondents' strong concern regarding immigration reform is illustrated in the graph to the left. Almost all respondents said that a national comprehensive reform was either important, quite important or very important. Also, respondents place a high level of importance on providing undocumented workers a path to legal status or citizenship.

A commonly referenced topic emerging from the survey was the H-2B program, which allows service workers into the U.S. on a temporary, seasonal basis. Of the 71 golf course superintendents surveyed, only 13% said that they were currently using the H-2B program. Others expressed interest in learning more about the program, recognizing that H-2B is currently one of the most effective ways to hire legally authorized immigrant workers on a seasonal basis. While survey participants generally consider the H-2B program to be valuable,

they also acknowledge its limitations. First, the administration and bureaucratic process for H-2B is considered an important program limitation. Superintendents would prefer a program more streamlined and easy to use. Second, there are limits on how many new H-2B workers can enter the country annually. For 2008, the number of new workers is capped at 66,000, so low that not all superintendents and other eligible employers who want H-2B workers at the present time can hire them. This greatly limits the opportunity to hire legally authorized Hispanic immigrants. Concern over the H-2B cap is evident from Figure 9. More than 80% of the survey respondents indicated that increasing the number of H-2B workers was either important, quite important or very important.

The H-2B program appears to be a double edged sword for golf course superintendents. On one hand, it is an effective way to attract a legally authorized immigrant workforce. On the other hand, it is considered expensive, cumbersome and limited by the cap in workers allowed into the program. The answers to the open ended questions sometimes made reference to a generic guest worker program or a program that will provide work visas. This suggests that some survey respondents may be looking for an easier more efficient alternative to the H-2B program.

Overwhelmingly, participants in the survey wanted to see changes in immigration policy. When asked how important they feel immigration reform was to the golf course management industry, more than 90% answered that the issue was either important, quite important or very important. More than 75% said that a path to citizenship or legal status was important.

Conclusion

The golf course superintendents surveyed all employ Hispanic workers. This was intentional in order to gather information from those most likely to be directly impacted by future immigration policy discussions. Survey participants recognized the difficulties with unauthorized workers and clearly would like to see legislative solutions to the challenges created by their presence in the labor pool. The challenge ahead for the industry will be to determine how to most effectively influence the political process to achieve immigration reform and to advocate for improvements in the H-2B program.

Thomas R. Maloney and
Nelson L. Bills

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A 2009 Fundraiser Tournaments Thank You

NYSTA would like to recognize the following associations, clubs and superintendents for hosting these 2009 fundraiser tournaments to benefit the turfgrass industry.

Thank you for your support!

Finger Lakes AGCS Scholarship/ Research Golf Tournament, *Peter George*, Ravenwood Golf Club

Central New York GCSA Poa Annual Golf Tournament, *Jody Merchant*, Pompey Club

Adirondack GCSA Poa Annual Golf Tournament, *Cal Lewis and Joe DeForest*, Lake Placid Resort Golf Club

Northeastern GCSA Poa Annual Golf Tournament, *Richard Smathers*, Mohawk Golf Club

Metropolitan GCSA Poa Annual Golf Tournament, *John Carlone*, CGCS, Meadow Brook Club

Sullivan County Challenge/Steve Smith Memorial Tournament, *Mike McNamara*, Grossinger Golf and Country Club

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Turfgrass Environmental Stewardship Fund Grant Awarded to Dr. Daniel Peck

The primary goal of the Turfgrass Environmental Stewardship Fund is to support science-based research aimed at striking a balance among the desires and expectations of turf end-users, sound and integrated management practices, and protection of man and the environment.

The New York State Turfgrass Association Board of Directors is pleased to announce that Dr. Daniel Peck, Assistant Professor of Soil Insect Ecology and Turfgrass Entomology at Cornell University's New York State Experiment Station in Geneva, was the recipient of a Turfgrass Environmental Stewardship Fund grant in the amount of $105,000. The award will fund his project, "Diagnosis Turf: Expanding New York's Opportunities to Resolve Pest Issues and Reduce Pesticide Use."

According to Dr. Peck, "Turfgrass plays a vital role in the State's economy as well as in the sports and leisure activities of its citizens. The primary goal of the Turfgrass Environmental Stewardship Fund is to support science-based research aimed at striking a balance among the desires and expectations of turf end-users, sound and integrated management practices, and protection of man and the environment. Improving the accuracy and speeding the delivery of reliable pest identification will lead to a more successful resolution of pest problems while reducing pesticide use."

Daniel C. Peck, Ph.D., Assistant Professor of Soil Insect Ecology and Turfgrass Entomology, presents an overview of the turfgrass research facility to the NYSTA Board during a meeting at the New York State Agricultural Experiment Station in Geneva.

Peck hopes to further enhance environmental stewardship through improved diagnostics by implementing a series of objectives designed to build capacity in New York State for the identification of turfgrass pests. These include:

1.) Gathering baseline information on current demand, availability and accessibility of diagnostic services through phone interviews and investigations on current services and approaches by other states.

2.) Tailoring management information to the environmental and regulatory scenarios in New York State by providing updates for Cornell Pest Management Guidelines for Commercial Turfgrass, developing a series of on-line fact sheets and creating a web page for turf extension information and tools.

3.) Expanding opportunities for diagnostic services in New York State by developing an on-line identification key, advancing DNA identification techniques, and conducting a one-day training workshop at the 2010 Empire State Green Industry Show.

4.) Building demand for those services within New York State through a series of promotional and instructional publications.

5.) Defining the short-term impacts and long-term prospects for a statewide diagnostics program for the insect pests, diseases and weeds of turf. This will be measured in terms of the number of extension contact hours and visits to web-based resources.

According to Peck, "In pest management, diagnosis is the correct identification of the culprit(s) behind a plant health issue. This project is needed because pest management practitioners need to 'nail the culprit' – be it insect, weed or disease – in a reliable, quick and informative fashion. Better diagnosis is a new avenue for reducing pesticide use because it limits applications against

the wrong target. It will therefore lead to environmental and economic benefits."

The role of the New York State Turfgrass Association will be to communicate information to our members through diagnostic sessions at our annual and regional conferences, web site postings, training workshops, and announcements in our member newsletters. Elizabeth Seme, NYSTA Executive Director said, "Last March, the New York State Turfgrass Association Board of Directors had the opportunity to tour Cornell University's New York State Agricultural Experiment Station (NYSAES) and hear presentations by the scientists there. We were especially impressed by the cutting-edge research taking place in the Entomology Department. Dr. Peck has proven to be an authority in the Northeast on the European crane fly and annual bluegrass weevil. We're proud to be able to award him with an ESF grant for his current project and are confident that NYSAES has the scientists, researchers, cooperative extension agents, laboratory technicians, and IPM specialists to handle all aspects of this endeavor."

Dr. Thomas J. Burr, NYSAES Associate Dean and Director expressed his appreciation for the Turfgrass Environmental Stewardship Fund grant in a letter sent to NYSTA President, Owen Regan. He wrote, "The support NYSTA has and continues to provide Dan Peck and other researchers in the College is critical for the development of excellent turf research and extension programs. The funding will allow Dan and his laboratory staff to assess the breadth and needs of turf diagnostics across New York and further develop and evaluate key diagnostic methods that will be critical to the future of the turfgrass industry."

The New York State Turfgrass Association is proud to support the New York State College of Agriculture and Life Sciences mission to create a "learning community dedicated to wide access, independent learning and new technologies…that will have a local and global impact on the way Earth's inhabitants live, learn and thrive."

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Wright Receives Environmental Stewardship Award

September 1, GSA New York presented its Environmental Stewardship Award to Thomas V. Wright, the Superintendent of Parks and Grounds at the historic Mohonk Mountain House, high on the Shawangunk Ridge in New Paltz, New York. Presented annually, the award is "given to an individual who exemplifies the role of environmental steward in the management of natural resources that support outdoor recreation and sports opportunities."

Built on the deep-blue waters of Lake Mohonk in 1869, the grand 265-room Mohonk Mountain House is one of America's oldest family-owned resorts. Tom Wright is responsible for the management of thousands of acres of unspoiled natural beauty that offers guests 85 miles of hiking trails, swimming, boating, ice skating, cross-country skiing, snowshoeing, tennis, horseback riding, rock climbing and a golf course that has been called one of the "Top 10 Environmentally Friendly Courses in the USA" by Links magazine. He has been successful in providing for the recreational needs of Mohonk's visitors while demonstrating an exceptional commitment to protecting the unique environment of the Shawangunks, called one of Earth's "Last Great Places" by the Nature Conservancy. In his work he guards the Mohonk tradition of environmentalism - unwavering for 140 years of continuous Smiley family ownership.

Mohonk President Bert Smiley, Thomas Wright, GSA-NY Captain Kevin Trotta

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Letter to Senator Antoine Thompson

While I applaud the New York State Senate in their efforts to protect the health and safety of citizens of the State of New York, it is my professional-scientific opinion that the proposed law to ban the sale and use of lawn fertilizers that contain phosphorus will not significantly reduce the problems of phosphorus in the surface waters in New York State.

RE: NYS Senate Bill S3780-Relates to phosphorus in household cleansing products and lawn fertilizer

Dear Senator Thompson,

My position at Cornell University is a turfgrass scientist and as a member of the Cornell University Nutrient Guidelines Committee I am responsible for the fertilizer recommendations for turfgrass sites in New York State. I am an expert on the environmental fate of fertilizers applied to lawns and development of best management practices to protect water quality (see attached CV). I felt compelled to write to you stating my professional opinion on the proposed law to restrict the sale or use of phosphorus fertilizer on lawns and non-agricultural turf in New York State. While I applaud the New York State Senate in their efforts to protect the health and safety of citizens of the State of New York, it is my professional-scientific opinion that the proposed law to ban the sale and use of lawn fertilizers that contain phosphorus will not significantly reduce the problems of phosphorus in the surface waters in New York State. It is not my role as a university professor to recommend approval or rejection of such a law but to provide an unbiased scientific review of the law and its impacts. What follows is a point by point review of the following proposed law:

§ 17-2103. Sale or use of phosphorus fertilizer restricted.

1. No person shall use or authorize any person by way of service contract or other arrangement to use in this state any phosphorus fertilizer on lawn or non-agricultural turf, except when:

(a) A soil test indicates that additional phosphorus is needed for growth of that lawn or non-agricultural turf; or

(b) The phosphorus fertilizer is used for newly established lawn or non-agricultural turf during the first growing season.

"Phosphorus fertilizer" means fertilizer in which the available phosphate (P205) content is greater than 0.67 percent by weight. Phosphorus fertilizer does not mean compost or bio-solids.

Based on all the available scientific literature (Soldat and Petrovic, 2008), I believe that the only way the phosphorus in a lawn fertilizer will end up running off in to surface water is:

1) if the fertilizer is misapplied to a hard surface like a driveway, side walk or in the road (that is not cleaned up) that is connected to the storm drain system; or

2) there is heavy rain shortly after the fertilizer is applied that results in runoff, or

3) when soils become saturated during wet times and the soils have extremely high phosphorus level, or

4) when water runs off the lawn, phosphorus in the grass leaves leaches out and moves with the water. The phosphorus in the grass leaves is not highly influenced by how much phosphorus is applied or the amount in soil, thus, explaining why there is very little correlation between the amount of phosphorus applied to lawns and the amount of phosphorus that runs off.

The first three conditions seldom occur in New York, but if they do, it can result in large amounts of phosphorus in runoff. The fourth I believe is where most of the small amount of phosphorus that runs off

from lawns comes from.

Concerns about the effectiveness of soil testing to reduce phosphorus runoff from lawns:

While I am a strong proponent of using soil testing to base fertilizer application on, basing the application of phosphorus containing fertilizers on soil testing may not result in the intended improvement in water quality, especially as the proposed law would be based on plant need level. Granted if a soil test indicates no phosphorus was needed this would prevent the first condition listed above that could lead to phosphorus runoff from lawns, miss-applying fertilizer to an imperious surface tied to storm drain system. There are two numbers related to soil test levels of phosphorus that should be pointed out: the amount needed for sufficient plant health-sometimes referred as the agronomic level. The second is the environmental impact level above which the soil phosphorus level is very likely to result in phosphorus runoff especially if more phosphorus fertilizer is applied. There is a big difference in the amount of phosphorus in runoff from at high soil test from an agronomic perspective (4 lbs/acre on the Cornell soil test report) and levels that are high enough to create a significant and meaningful increase in the amount of phosphorus in runoff from lawns, the environmental threshold (greater than 80 to 100 lbs/acre on the Cornell soil test report). Our research (Soldat and Petrovic, 2009) has shown that fertilizing lawns in NY with phosphorus when the soil test phosphorus level was above agronomic level but below the environmental level did not result in more phosphorus runoff. Thus if the goal is reducing phosphorus runoff from lawns, then the law should be amended to indicate lawns should not be fertilized with phosphorus when the level is above the environmental threshold.

Concerns about compost and biosolids not being restricted:

Composts, including manure based materials, and biosolids are sold as fertilizers and do often contain very high amount of phosphorus compared to nitrogen (1 part nitrogen to ½ to 1 part phosphorus), unlike most lawn fertilizers sold that have only a small portion of phosphorus compared to nitrogen (5 to 10 parts nitrogen to phosphorus). Fertilizer application rates are most often related to the amount of nitrogen, thus if compost or biosolids fertilizers are used much more phosphorus is applied than a typical lawn fertilizer which could result in excess phosphorus that could pollute surface water. Are the compost and biosolid fertilizers exempt from this law or just composts and biosolids that are used as soil amendments? In either case, whether as a fertilizer or soil amendment, they should not be exempt from this law because their use can result in very high soil phosphorus levels than have been shown to cause significant phosphorus runoff from lawns (Soldat and Petrovic, 2009). Therefore, if the goal is to limit the amount of phosphorus applied to lawns, all sources of phosphorus applied to lawns should be limited not to only just lawn fertilizers. Thus, any organic matter sources, including manures, composts and biosolids, should be tested and their use restricted (banned) if they contain phosphorus as is proposed for lawn fertilizers. Organic sources of phosphorus do not necessarily limit phosphorus runoff, especially when used are highrates.

Lack of evidence that such a restriction will improve water quality:

To my knowledge there is no scientific evidence that banning the fertilizing of

To my knowledge there is no scientific evidence that banning the fertilizing of lawns with phosphorus fertilizers will reduce the amount of phosphorus in New York watersheds that are impacted by too much phosphorus.

I believe the New York State Legislature should identify the areas (soils prone to large amount of runoff and that have high soil phosphorus level) most prone to large amount of phosphorus runoff and make restrictions on these areas. There should be a restriction on the mis-application of fertilizers to impervious sites like roads, driveways and sidewalks and if this happens it must be cleaned up.

lawns with phosphorus fertilizers will reduce the amount of phosphorus in New York watersheds that are impacted by too much phosphorus. There is one Minnesota case study comparing sub-watersheds that have phosphorus and phosphorus–free fertilized lawns on phosphorus runoff. First and foremost, governmental policies and laws must be based on science. A case study is not peer-reviewed scientific publication. The peer review process is designed to do two things: one being to validate whether the conclusions can be justified based on soundness of how the study was conducted, the statistical analysis is appropriate and the interpretation of the data is valid, and second to improve the overall quality of the final publication. This is not to say all peer-reviewed scientific publications are good and that non-peer review work is not valid but it is one of the few ways we have to evaluate the validity of a research study. Most scientific journal editions strongly discourage authors from citing non-referred work because of the reasons listed above (mostly importantly are the conclusions valid). Second, can the findings be extrapolated from a study done in Minnesota to New York? The site of the Minnesota study was a very high runoff prone lawn containing sub-watershed with little or no trees (tree leaves can be a significant sources of phosphorus in suburban watersheds in New York, Easton and Petrovic, 2008), which is likely appropriate on only a small portion of the three million acres of turfgrass in New York.

Most effective ways to reduce phosphorus runoff from lawns:

I believe the New York State Legislature should identify the areas (soils prone to large amount of runoff and that have high soil phosphorus level) most prone to large amount of phosphorus runoff and make restrictions on these areas. There should be a restriction on the mis-application of fertilizers to impervious sites like roads, driveways and sidewalks and if this happens it must be cleaned up. The Legislature should consider requiring best management practices with educational efforts to inform turfgrass managers and residential lawn owners on the best ways to protect the environment and to have healthy functional turf sites.

I would be glad to discuss these issues further with you and the Senate Environmental Conservation Committee if you feel it is necessary.

A. Martin Petrovic
Professor of Turfgrass Science

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2009 NYSTA Winning Fields Seminar, Cooperstown, NY

Over 115 people attended the October 1, 2009 NYSTA Winning Fields Seminar at Doubleday Field in Cooperstown, New York. This one-day seminar offered a variety of courses including management, maintenance, research and hands-on training for athletic field and general ground maintenance professionals. Trade Show exhibitors were there to answer questions and offer equipment demonstrations.

(left) Kevin Trotta, Global Sports Alliance, talks about conducting personal sports turf research.

(right) Joseph Potrikus, CSFM, Greener World Landscape Maintenance, LLC, talks about preparing fields in the winter for quick spring playability.

(left) Kevin Trotta, left, and Frank Rossi, Ph.D., Cornell University, speak at the Winning Fields Seminar about Environmental Turf Craft.

(right and below) Brad Gregus, Mar-Co Clay Products, show attendees steps to rebuild and level a baseball mound.

Healthy Ecosystem

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We have to be willing to step up to the table and justify what we do and make adjustments where it is needed to improve our environmental compatibility. It won't be perfect and there will be some challenges but that's how we grow.

IPM Program led by Joe Kovach, Ph.D., published the Environmental Impact Quotient (EIQ).

The EIQ was initially developed to compare fruit and vegetable production systems for the relative environmental risk. Interestingly, the greatest resistance came from the organic growers at the time. The organic production systems rely heavily on very frequent use of elemental sulfur and, when measured against a typical IPM approach to fruit production, posed significantly greater risk to the environment.

Recently, my colleague Jennifer Grant, Ph.D., Assistant Director of the NYS IPM Program, and I published a scientific paper using the EIQ adapted for use in turf. The goal was to compare the risk of traditional pest management programs with IPM and biologically-based pest management programs.

The EIQ is not perfect. There are some data gaps where assumptions have to be made. It is not adaptable to a specific site. For example, if you have a greater leaching problem than runoff, it will be difficult to adapt for that specific need. However, as an overall tool for assessing broad environmental impact that includes health effects, ecological effects, applicator effects, and even golfer exposure effects, it is an excellent choice.

Recently, the Quebec Provincial government published the Quebec Pesticide Risk Indicator model (QPRI). This model has two approaches, one for general human health and one for environmental effects. Again, one could easily find flaws with this approach but just like my search through the web for consumer product information, it is one tool I might use to make an informed choice.

The question that lingers with me is why don't we have a more widely accepted tool for comparing products for environmental risk? The conspiracy theorist side of me thinks many in the industry do not want one. If we had a widely accepted model, would local communities use it as de-facto regulation? Of course we can always sit and do nothing and wait for another group to do it for us so we can avoid the law of unintended consequences, i.e., develop a tool to help superintendents that then is used against them.

We have to be willing to step up to the table and justify what we do and make adjustments where it is needed to improve our environmental compatibility. It won't be perfect and there will be some challenges but that's how we grow.

Frank Rossi, Ph.D.

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Healthy Ecosystem

Selecting pesticides follows a similar approach to fertilizers. This is often referred to as the "Three E's", i.e., economics, efficacy and the environment.

Need a Screen

I must admit, I am one of those Consumer Reports (CR) "geeks." Before I make a significant purchase, I am often scouring the web looking for reviews. CR is my foundation, but I also like to read user reviews often posted on less famous sites. I gather as much information as I can and try to make an informed decision. In most cases, I am pleased with the choice but there have been occasions when I had a unique need that the product could not fulfill and I realized a limitation.

Equipment and product selection in the golf turf industry can follow the same procedure. There are a variety of sources from our own TurfNet to University research as well as chatting with colleagues and of course the ability to "demo" a piece of equipment.

My experience is that golf course superintendents have a clear idea of what will work for them and often stick with what works. At the same time, there is a growing percentage of superintendents willing to try new products and practices that may offer enhanced savings or improved environmental compatibility.

As I look at this process for the selection of products, such as fertilizers and pesticides, there appears to be an omission. Of course, we all have a general sense of the economic and performance aspects although they are not always clear cut. For example, slow release nitrogen sources have different release patterns and dispersal characteristics that may add value.

Environmentally speaking, we also have a good sense when we use a water-soluble nitrogen source that the release is rapid and may have a high leaching or runoff potential. We often tout our use of slow-release sources as a measure of environmental responsibility.

Selecting pesticides follows a similar approach to fertilizers. This is often referred to as the "Three E's", i.e., economics, efficacy and the environment. Unfortunately, while we have the readily accessible information on the first two "E's", there is a dearth of collected information on environmental effects of individual products.

Yes, there are Material Safety Data Sheets (MSDS) that provide general hazard information but they do not offer an easy to understand summary of the general environmental risk of a product. Why do we have this for most products and equipment but not for pesticides?

This does not appear to be an easy question to answer. To be sure, it is not exactly a straightforward situation such as with nutrients. That said, there is a great need for some method of selecting pesticides based on environmental effect.

The use of environmental risk models is not new to agriculture. There have been models published comparing the environmental risk of various production systems since the early 1980's. In 1992, Extension Scientists at the New York State

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