Do We Really Need Starter Fertilizer?

The thinning of turfgrass is inevitable once Fall sports practice begins. Here in New York and other cool season areas, the wear and tear of soccer, field hockey and football extends into the latter half of Fall when cooling temperatures inhibit seed germination and establishment. Spring seeding is usually the next option. Sports turf managers are familiar with the cycle of autumn sports damage and the need for spring reestablishment. Applications of starter fertilizers are often an integral aspect of this annual cycle.

In recent times these high phosphorus-containing materials have become the subject of justifiable environmental concern because of the risks associated with phosphorus runoff in surface waters. Excessive nutrients disrupt aquatic ecosystems resulting in eutrophication. Even low levels of phosphorus can be detrimental to water quality by stimulating vegetation and algal blooms, making the water unsuitable for drinking and recreation. The subsequent death and decomposition of this accelerated growth reduces dissolved oxygen, killing fish and other organisms. Although eutrophication does occur naturally, it is often triggered by nutrients associated with human activities.

Obviously, as sports turf managers we strive to make the world a better place, not to contribute to environmental degradation. While research has shown that a dense stand of turf impedes runoff, our routine applications of high-phosphorus “starter” fertilizer may pose risks because we’re applying when turf cover is thin or even non-existent. Nutrients applied to thin turf or bare soil can readily become mobile, fields are typically graded to promote surface drainage and high rainfall amounts increases the potential for runoff and threatens environmental quality.

continued on page 4
The 2009 edition of the Pest Management Guidelines for Commercial Turfgrass is now available. This annual publication provides up-to-date pest management information for those producing sod or maintaining turfgrass in New York State. It has been designed as a practical guide for sod producers, landscapers, turfgrass managers, pesticide dealers, and others who advise those producing sod or maintaining turfgrass.

In addition to the annually updated pesticide and pest management information, highlighted changes in the 2009 Turfgrass Guidelines include:

- Revised pesticide safety information
- Addition of moss control options
- Addition of plastics recycling information

The 2009 Pest Management Guidelines for Commercial Turfgrass can be obtained through your local Cornell Cooperative Extension office or directly from the Pesticide Management Education Program (PMEP) Educational Resources Distribution Center at Cornell University. To order from PMEP, call (607) 255-7282 or send an email to patorder@cornell.edu. Cost for this publication is $21, shipping included. To access the publication on the Cornell University website, go to http://ipmguidelines.org/turfgrass/.

New York State Turfgrass Association
Calendar of Events

2009

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<th>Date</th>
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<tr>
<td>August 12</td>
<td>Cornell Turfgrass Field Tour</td>
<td>Bethpage, NY</td>
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<td>August 19</td>
<td>10th Annual Sullivan County Challenge - Steve Smith Memorial Tournament</td>
<td>Grossinger Country Club, Liberty, NY</td>
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<td>August 24</td>
<td>Central New York GCSA Poa Annual Golf Tournament</td>
<td>Pompey, NY</td>
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<td>September 17</td>
<td>Adirondack GCSA Poa Annual Golf Tournament</td>
<td>Lake Placid Resort Golf Club, Lake Placid, NY</td>
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<td>September 21</td>
<td>Northeastern GCSA Poa Annual Golf Tournament</td>
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<td>September 22</td>
<td>Finger Lakes AGCS Scholarship/Research Golf Tournament</td>
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<td>September 28</td>
<td>Metropolitan GCSA Poa Annual Golf Tournament</td>
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<td>October 1</td>
<td>Winning Fields Seminar</td>
<td>Doubleday Field, Cooperstown, NY</td>
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<tr>
<td>December 7-11</td>
<td>Cornell University Short Course</td>
<td>Cornell University Campus, Ithaca, NY</td>
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2010

<table>
<thead>
<tr>
<th>Date</th>
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<tr>
<td>January 12-14</td>
<td>Empire State Green Industry Show</td>
<td>Rochester Riverside Convention Center, Rochester, NY</td>
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<td>February 23-24</td>
<td>Southeast Regional Conference</td>
<td>Holiday Inn Suffern, Suffern, NY</td>
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<td>March 1</td>
<td>Western Regional Conference</td>
<td>Millennium Airport Hotel, Buffalo, NY</td>
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<td>March 18</td>
<td>Adirondack Regional Conference</td>
<td>Crowne Plaza Lake Placid Resort, Lake Placid, NY</td>
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For more information go to www.nysta.org or contact our office at (518) 783-1229.
Cornell University Turf Team Launches New Web Site With Advanced Features

http://www.hort.cornell.edu/turf

- Weekly podcasts of ShortCUTT the weekly e-zine distributed during the growing season. Download and listen to this week’s news on your computer or personal mp3 devices.

- Forecast is up-to-date weather for the turf industry.

- Purchase turf industry trade periodicals important to the continued development of turf research.

- Access the Turf Pesticides and Cancer Risk Database and the Pesticide Management Education Program (PMEP).

- Portals to articles for both the turf professional and private homeowner. Click through the continuously growing list of informative articles and research updates.
Feature Story

continued from page 1

Conventional Wisdom

If soil tests indicate adequate phosphorus, do we need additional P in the seedbed? Pick up most any turfgrass textbook and take a look at the section on establishment. Odds are there will be something that reads like this: “It is important to use a starter fertilizer because seedlings need a lot of phosphorus to develop. This application is recommended even if soil tests show adequate P levels because the seedlings’ immature roots must have P right there where they can access it.”

Hash Mark Science

Following a preliminary study I contacted A. Martin Petrovic, Ph. D. of Cornell. Marty was characteristically generous in his guidance, support and encouragement.

The experiment was simple. I had two football practice fields. (These were no puny, university test plots but a robust 2.6 acres of sports turf.) These bruised and battered practice fields were seeded in late March with a perennial rye blend at a rate of ten pounds per thousand square feet. These fields would be needed again for practice in August. Soil tests indicated existing P levels at 19 pounds per acre, by all standards more than adequate. I divided each field in half: one cross-field on the 50-yard line and the other lengthwise, goal to goal. On one side of each field I applied triple super phosphate at the substantial rate of 75 pounds of P per acre (8 LB 0-45-0 / 1000 ft²) in early April, just before germination. The other side received no P. It had been apparent in the preliminary study that applied nitrogen was absolutely essential for vigorous establishment so the entire 2.6 acre study area was fertilized with a controlled release 20-0-5 at a rate of 1 pound of N per thousand square feet just as the seed began to germinate.

Results and Conclusions

There was absolutely no difference anywhere in the study area. The rye established equally well across the two fields. The entire area got equally beaten up by PE classes and baseball outfielders and showed no detectable differences in response. There was no discernible disparity in density. No visible variation in vigor. No observable benefit from the added P.

The potential for problematic phosphorus concentrations in runoff and the risks of surface water contamination with resulting ecological threat compel us to exercise caution in the use of high P starter fertilizers. As stewards and green industry leaders, we’re obliged to be responsibly prudent in the management of all inputs, including nutrients. I’m hopeful that this experiment encourages further study (with other species, in different climates, soils, how much P is enough, etc.).

So, if soil tests indicate adequate phosphorus, do we need to apply additional phosphorus when seeding perennial rye?

It does not appear that we do.

Kevin Trotta
2009 SUMMER
CORNELL TURFGRASS FIELD TOURS

DATES AND PLACES NEAR YOU!

JUNE 24 ROCHESTER
JULY 15 ITHACA
AUGUST 12 BETHPAGE

DEC CREDITS AVAILABLE

- **June 24, Rochester, NY** Walk and talk with Cornell Turf Team around the U of R Campus discussing the latest research and how to apply it at your facility or with your clients.

- **July 15, Ithaca, NY** Join us for an informal and informative walking tour of the Cornell Turfgrass Research plots and the RTJ Golf Course discussing the latest research in cultural and pest management.

- **August 12, Bethpage, NY** With another US Open in the books, the Bethpage State Park remains the highlight of public golf in the US. Come tour the landmark environmental research in its’ 9th season on the Green Course. This tour with the Cornell Turfgrass Team and Bethpage Staff will highlight the latest research on reducing pesticide and fertilizer use.

- DEC and GCSAA credits will be available.

- Registration available at [http://www.hort.cornell.edu/turf/](http://www.hort.cornell.edu/turf/)

- For More Information regarding the Cornell Turfgrass Short Course contact Maxine Welcome at MW45@cornell.edu or by calling 607-255-5439
Trac software for turfgrass was released in November 2008. Some of you have tried it and love it, while in other shops it’s still sitting on the shelf. And some of you still need to get a copy! In this article, I’ll give you a view of what Trac software is and how it can help you. I’ll also provide some pointers on getting started and customizing the files for your use—as well as underscoring some common pitfalls.

What is Trac Software?

Trac is easy to use Excel-based software, created to record annual pesticide and fertilizer applications. Four files are customized for the turfgrass industry: TracGolf, TracGrounds, TracSod and TracLawn. The files contain information on over 100 turfgrass pesticides registered in New York State, based on the Cornell Pest Management Guidelines. The user enters information on applications, locations and applicators, and Trac automatically generates pesticide report forms. All turfgrass files are currently distributed on a single CD.

What are the system and user requirements?

Trac requires Windows 98 (or above), or Mac OS 9 (or above), but will not run on the Vista operating system. The computer must have Microsoft Excel up to Office 2007 on a Windows operating system, or up to Office 2004 on a Macintosh. Trac will not run on Mac Office 2008. The user needs a basic knowledge of Excel, but novice users can obtain many tips from the Trac Software Manual contained on the CD.

How does Trac work?

Those familiar with working on an Excel spreadsheet will find Trac software easy to use. You simply “fill in the blanks” on data entry worksheets. One sheet asks for basic information, such as name and address of the business. Another sheet allows you to enter application information, such as the spray date and pesticide used, et cetera.
The latest research-based turfgrass information delivered to you every Monday during the growing season via email.

**Free to NYSTA members**

Supply email to shortcut@nysta.org

---

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Keep this great NYSTA member benefit free.

Sponsor a week for only $150!

For more information (518) 783-1229 or www.nysta.org.
The less-often considered benefits of Trac software are more subtle. A concise tally of pesticide applications gets you thinking about where, when and why you are applying. Are there certain properties, or holes on a golf course, that are being treated more than others? Why are you using particular products? Were you applying more than you realized?

How can Trac help me?

The obvious and immediate benefits of using Trac software are that record keeping should be easier and more accurate. Drop down lists are provided for pesticides and pests, and other features that are common to many users—such as tee, greens and fairway designations in TracGolf. The software also generates drop down lists specific to your golf course, school or business. These lists save time in repetitive entries, and also prevent typing errors.

Trac improves accuracy in reporting by feeding your application and site-specific information directly into the DEC applicator annual report form.

The less-often considered benefits of Trac software are more subtle. A concise tally of pesticide applications gets you thinking about where, when and why you are applying. Are there certain properties, or holes on a golf course, that are being treated more than others? Why are you using particular products? Were you applying more than you realized? More or less than last year? The Trac SprayData worksheet prompts you to enter your target pest and “decision support” (e.g. scouting report, historical records, etc.). We often get into habits—good or bad—when we manage turfgrass. Even listing the areas you typically treat, or “pest management units” can make you rethink your IPM program. Trac is a new tool that can help you examine, assess and compare your pest management inputs. Especially if your records have been hand-written up to this point, you’ll find that data in Trac is much easier to summarize and compare.

Common Problems

Most of our tech support phone calls and emails for Trac for Turfgrass have come in two categories: trouble with
Excel basics, and inability to type into the pesticide applicator report form. If you are completely unfamiliar with using Microsoft Excel, it will take you a little longer to get comfortable using Trac. However, the user’s manual has many good tips and shortcuts for navigating Excel. More experienced users can also find advanced tips for customizing worksheets and output in the manual. The FAQ, Excel Shortcuts and Trac Tips on our website may also be useful, http://nysipm.cornell.edu/trac/. For the more personal touch, you may be able to get help from your bookkeeper or family member—Microsoft Excel is a commonly used application.

Secondly, we’ve received several calls from frustrated users saying, “I’m trying to type in the pesticide applicator report, but the cells are protected. Would you please give me the password”? The answer is that the cells are protected, because you are not supposed to be typing there. It’s important to understand that the pesticide applicator report is an output form - it is based on all the data entered on other worksheets. If you override these cells, you undermine the whole premise of Trac. Sure, we could give you a blank form to type into—but that’s no better than filling the form out by hand.

Most of the worksheets are protected, so that you don’t inadvertently ruin the formulas and macros. However, you can usually unprotect them without a password. Sometimes this is useful for advanced tasks such as customized filtering and sorting. There are specific instructions for many of these functions in the user’s manual and on the web site. The bottom line is, if it’s password protected, leave it alone. If it’s a protected worksheet, proceed with caution and be sure you have a backup.

Why was Trac developed?

Trac software was originally developed by the NYS IPM Fruit Coordinator, Juliet Carroll, to help fruit growers face the demand for traceability of their products and a myriad of reporting requirements to processors and other buyers of those crops. Although turfgrass managers face different demands than food producers—the record keeping focus of Trac was highly adaptable to the turfgrass industry. Dr. Carroll, in collaboration with Jennifer Grant of the NYS IPM Program, created four new files customized for Golf, Lawn Care, Grounds management and Sod production. Development was funded by the New York State Turfgrass Association and the New York State IPM Program.

How can I get a copy of Trac Software for Turfgrass?

NYSTA members receive a complimentary copy as a member benefit.

For additional copies, go to the NYS IPM Program web site’s Trac page, http://nysipm.cornell.edu/trac/ and click on “Obtain Trac Software for Turf”. All four files, TracGolf, TracLawn, TracGrounds and TracSod, as well as the user’s manual, are contained on one CD. It can be obtained for a $25 shipping and handling fee.

Jennifer Grant, Ph.D.
Until longer-term approaches can be developed, insecticidal control must form the backbone of our rapid response. To date, biological control, cultural control and host plant resistance have had scarce offerings for crane fly IPM.

Experience from Europe and areas of previous establishment, such as the PNW, serves as a starting point to develop best management practices for invasive crane flies in NYS. Nevertheless, that experience must be tailored to our growing conditions, production practices and pest ecology. In contrast to the PNW, both species appeared in NYS at the same time, infestations exploded to injurious levels within 3 years, and there is still a chance to proactively thwart their spread, thereby buying time to develop management strategies.

Until longer-term approaches can be developed, insecticidal control must form the backbone of our rapid response. To date, biological control, cultural control and host plant resistance have had scarce offerings for crane fly IPM. Recommendations for insecticidal control will more rapidly give turfgrass managers the tools to prevent or suppress outbreaks. To date, we have evaluated control products in four field trials that were conducted over a 2-year period to target *T. paludosa* larvae. Two preventive autumn and two curative spring experiments were performed to define opportunities for each phenological control window. Applied in late autumn against small 1st and 2nd instars, the most efficacious (≥70% control in both trials) products were bifenthrin, carbaryl, chlorantraniliprole, clothianidin and trichlorfon. Applied in spring against large 4th instars, the most efficacious products were clothianidin and dinotefuran. Variable results were obtained for a host of other chemistries and biopesticides.

Several insecticides, therefore, will significantly reduce field populations of *T. paludosa* and offer alternatives for preventive and/or curative control. But, one of the most serious consequences of crane fly establishment is the need for an additional insecticide application. Current control windows are either too early (late April to May) or too late (late September to October) to overlap the traditional periods of preventive (June to early August) and curative (late August to early September) white grub control. This scenario forces turf managers to contemplate an additional insecticide application, implying a costly new economic and environmental burden to the turfgrass industry.

Recently, data from disparate studies is revealing that certain long-residual insecticides persist long enough to suppress
summer white grub populations even though they were applied in early spring to target a co-occurring pest. For instance, applied as early as 6 April for billbug control in Ohio, clothianidin, imidacloprid, indoxacarb and thiamethoxam gave 95-100% control of Japanese beetle. Applied as early as 11 April for annual bluegrass weevil control in New Jersey, imidacloprid and clothianidin+bifenthrin gave 90-100% control of Japanese beetle and northern masked chafer. And applied as early as 11 May in New Hampshire, imidacloprid and clothianidin+bifenthrin gave 85-100% control of European chafer.

This approach should be explored for its promise in areas of NYS that suffer – or will suffer - from both crane fly and white grub populations. Like white grubs, invasive crane flies are bound to become widespread locally. Based on our studies to measure local incidence, within one or two seasons after initial detection, 22-98% of golf course greens and tees are already infested. Control of both pest complexes may mean broad applications across whole lawns and fairways. We thereby propose to assess the feasibility of making a single insecticide application to control invasive crane flies and white grubs that occur at the same site but at different times. We will examine tandem control in both the spring and autumn, i.e. early spring applications to target crane flies with carry over to summer grub populations, and summer applications to target white grubs with carry over to late autumn crane fly populations.

Daniel Peck, Ph.D.
Healthy Ecosystem

Infestations in turfgrass have already risen to highly damaging levels in NYS. In spring 2007 we recorded up to 70, 120 and 50 larvae/sq. ft in highly damaged lawns, fairways and putting greens.

Tandem Control of Invasive Crane Flies and White Grubs: Prospects for Scoring a Twofer

Not one, but two invasive crane fly species were detected in western New York State in 2004. *Tipula paludosa* and *Tipula oleracea* are native to Europe, but have now established in three geographic regions of the U.S., most recently in the Great Lakes. Known as “leatherjackets,” crane fly larvae can be problematic in any grass-based system. They inhabit the soil where they damage roots and stems below and above ground, leading to extensive thinning and dieback. All turf and forage grass species are acceptable hosts. Therefore, from sod farms to home lawns and golf courses, all 3.4 million acres of managed turf in NYS should be considered susceptible. Beyond turf, other horticultural systems will also be affected. In the Pacific Northwest, affected systems include peppermint, turnips, seedling nurseries, cereal crops, grass seed production, pastures and hayfields. In their native Europe, larvae damage pastures, winter cereals and other crops such as beets, brassicas, cabbage, clover, corn, lettuce, strawberries and turnips.

Infestations in turfgrass have already risen to highly damaging levels in NYS. In spring 2007 we recorded up to 70, 120 and 50 larvae/sq. ft in highly damaged lawns, fairways and putting greens, respectively, in the greater Buffalo and Rochester areas. The magnitude of populations caught the industry off guard. Lawn care providers and golf course superintendents are forced into rescue treatments that often rely on broad-spectrum carbamate insecticides. In addition, one species was also detected in sod farm turf for the first time in 2007. This appearance was inevitable, but it now fuels the idea that crane flies will likely move via infested soil media. The threat encompasses risk of infested sod, outbreak at the site of installation, establishment in a previously infested area of the state, as well as overall regulatory concerns. Our survey data reveal two zones of geographic establishment: both species in the western Erie Canal corridor and one on...