

CUTT

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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

This Times

1. **Do We Really Need Starter Fertilizer?**
2. **Clippings**
2009 Pest Management Guidelines for Commercial Turfgrass Now Available
2. **Calendar of Events**
6. **Trac Software for Turfgrass: Record Keeping Made Easier**
12. **Healthy Ecosystem**
A “Twofer” Controlling Grubs and Crane Flies



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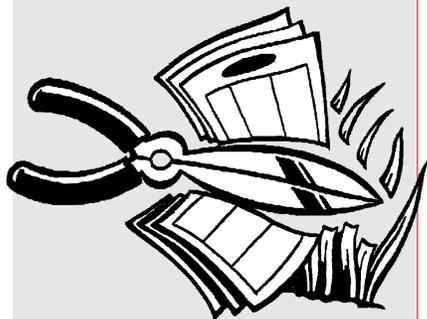
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CUTT

Clippings

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.



2009 Pest Management Guidelines for Commercial Turfgrass Now Available

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 web site, go to <http://ipmguidelines.org/turfgrass/>.

New York State Turfgrass Association Calendar of Events

2009

August 12	Cornell Turfgrass Field Tour Bethpage, NY
August 19	10th Annual Sullivan County Challenge - Steve Smith Memorial Tournament Grossinger Country Club, Liberty, NY
August 24	Central New York GCSA Poa Annual Golf Tournament Pompey Club, Pompey, NY
September 17	Adirondack GCSA Poa Annual Golf Tournament Lake Placid Resort Golf Club, Lake Placid, NY
September 21	Northeastern GCSA Poa Annual Golf Tournament Mohawk Golf Club, Schenectady, NY
September 22	Finger Lakes AGCS Scholarship/Research Golf Tournament Ravenwood Country Club, Victor, NY
September 28	Metropolitan GCSA Poa Annual Golf Tournament Meadow Brook Club, Jericho, NY
October 1	Winning Fields Seminar Doubleday Field, Cooperstown, NY
December 7-11	Cornell University 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

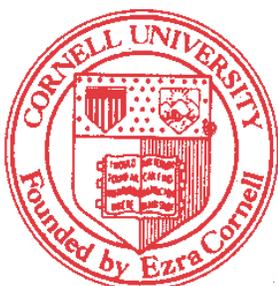
For more information go to www.nysta.org or contact our office at (518) 783-1229.



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.



Cornell University Turfgrass Program - Internet Explorer provided by Dell

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

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Cornell University Department of Horticulture

CORNELL Turfgrass

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 Dr. Frank Rossi
 fsr3@cornell.edu
 607/255-1629



Turf team:
 •Marty Petrovic
 •Dan Peck
 •Jennifer Grant

Essential pocket reference:
Turfgrass Problems
 Picture Clues & Management Options - Pocket handbook helps you ID and manage 80 cool-season turf problems, including damage, diseases, insects, and weeds. Order from NRAES.

The book on sports turf:
SPORTS FIELD MANAGEMENT
 Maintaining Safe Sports Fields
 Sports Field Management - The definitive resource for sports turf groundskeepers in New York and surrounding areas. Order from NYSTA.

Soil testing information - from Cornell Nutrient Analysis Lab

TracTurf® software - For lawn care, turfgrass, athletic field and golf course record-keeping and reporting.

CUTT archives - Cornell University Turfgrass Times.

Register now for 2009 Field Tours:
 •July 15, Ithaca, NY
 •August 12, Bethpage, NY
 More info.

Cornell Turfgrass Program

Cornell resources for turf professionals:

- Subscribe to ShortCUTT - Weekly (during the 35-week growing season) newsletter from Cornell Turfgrass Program sent via email. Features pest alerts, expert updates, observations around the state, Frank Rossi's 'Gazing in the Grass' column, and more. Also available as an audio podcast.
- Forecast - Weather for the turf industry - Up-to-date growing degree maps and other information to help you manage disease, irrigation, stress and more.
- Pest Management Guide for Commercial Turfgrass
- Plant Disease Diagnostic Clinic - How to submit a turf sample and turf factsheets.
- Green Industries Calendar - Programs, conferences, and other events for landscape, turf, nursery and greenhouse professionals.
- Pesticide Management Education Program (PMEP) - Promotes the safe use of pesticides

Listen while you work:
 ShortCUTT audio pod via Cornell turfgrass b
 RSS feed iTunes

The latest from the Cornell turfgrass

Week 14 - ShortCUTT 29, 2009
 This week: Register for Field Tour July 15. Alga turf. Annual bluegrass management. Fungicide and rotation. Moss c...

Week 13 - ShortCUTT 22, 2009
 This week: Register for Field Tour July 15. Lanc weed IPM. Manage fung resistance. Red thread turf. Dealing with wet s...

Week 12 - ShortCUTT 15, 2009
 This week: Register for Field Tour July 15. Ove sports turf. Manage dol foliar diseases. Week 1 ShortCUTT for June 15

RSSBox powered by rssinju

Regional associations:

- New York State Turfgrass...
- Northeastern Golf Course Superintendents Associat...
- Adirondack Golf Course Superintendents Associat...
- Finger Lakes Association Course Superintendents...
- Central New York Golf Cou Superintendents Associat...
- Metropolitan Superintende Association
- Long Island Golf Course Superintendents Associat...
- Sports Turf Managers of N...

“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.”

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

CORNELL Turfgrass

- **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/>
- For More Information regarding the Cornell Turfgrass Short Course contact Maxine Welcome at MW45@cornell.edu or by calling 607-255-5439

CUTT

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.

Trac Software for Turfgrass: Record Keeping Made Easier

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

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 files were designed for New York’s turfgrass industry, so there are advantages such as listings of many pesticides registered in NY that can be selected. When you select a pesticide trade name from the drop down list, the software automatically fills

Record-Keeping and Reporting Software



TracLawn
version 2008
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Authored by J.E. Carroll & J.A. Grant

Every effort has been made to provide correct, complete and up-to-date pest management information for New York State in this software, which was released in October 2008 and is based on the 2008 Pest Management Guidelines for Commercial Turfgrass (web link at left). Changes in pesticide registrations, regulations, and guidelines that occur after release are regularly available in county Cornell Cooperative Extension offices and from the Pesticide Management Education Program (web link at left).

This software is not a substitute for pesticide labeling. Accuracy of reports is the responsibility of the end user. Always read the label before applying any pesticide.

This software was made possible by funding from:
The New York State Department of Agriculture and Markets
The New York State Turfgrass Association

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Cornell Cooperative Extension
New York State Integrated Pest Management Program
630 W. North St., Geneva, NY 14456-1371

Open the next worksheet and begin entering data.
Refer to the Trac Software Manual for detailed instructions.

Trac Technical Support: jec3@cornell.edu Juliet Carroll

...useful web links below...

[Trac Frequently Asked Questions](#)

[2008 Pest Management Guidelines For Commercial Turfgrass](#)

[New York State Current Product Registrations](#)

[Cornell Pesticide Management Education Program](#)

[New York Pesticide Information Retrieval System - NYPIRS](#)

[IPM for Landscapes, Parks, & Golf Courses](#)

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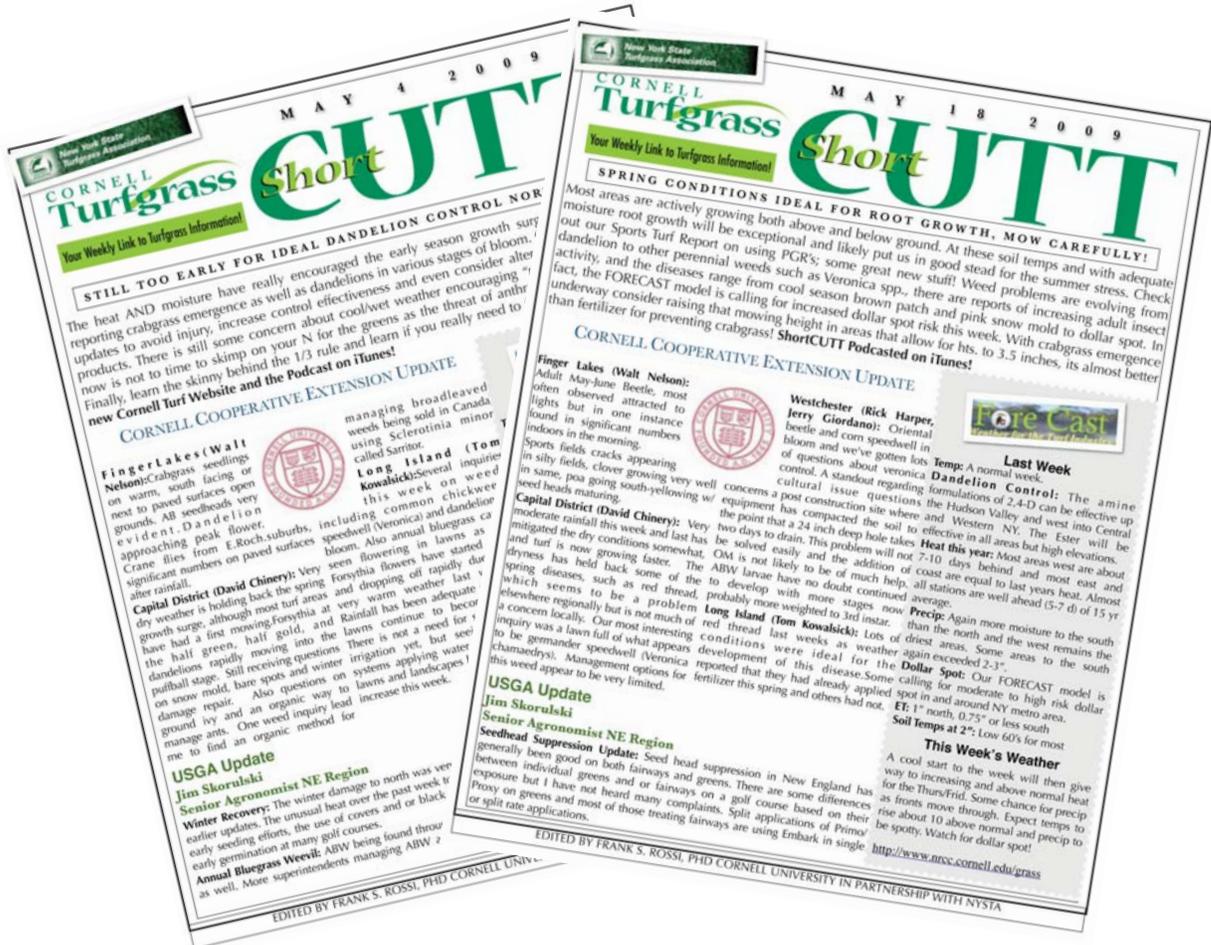
over 100 turfgrass pesticides registered in New York State, based on the Cornell Pest Management Guidelines. The user enters

continued on page 8

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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?

continued from page 6

in the EPA registration number, REI (re-entry interval) and % active ingredient. If products you use are not on the list, you can enter them—just once! After your pesticides have been selected they appear as a drop down list when you are recording individual applications.

Drop down lists are created from much of the data entered: if you've listed 10 areas on a campus where you maintain turf, those ten areas will always show up in a drop down list. The four Trac for Turfgrass files also have exhaustive lists of diseases, insects and weeds of turf found in NY. Trac automatically fills in the DEC spray report forms from the data entry worksheets. Furthermore, the files are dynamic. If you change a practice, or add an area or a customer during the season—simply add it in, and the various worksheets will automatically be updated.

How can Trac help me?

The obvious and immediate benefits of using Trac software are that record keeping

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 should be easier and more accurate. Drop down lists are provided for pesticides and

2009		Crop Protection Chemicals - Turfgrass, Lawn		Turfgrass, Lawn - Crop Protection Chemicals - Turfgrass					
Chemicals in the SprayData Trade Name drop-down list.		Enter the unit and cost per unit for each chemical you use in the columns below. The cost of each chemical applied will then calculate on the Spray Data worksheet.							
Add chemicals in rows 95-124.		Verify information on the Label you Possess		Verify information on the Label you Possess					
Trade Name	Applied Unit	Cost Per Applied Unit	Formulation	EPA Reg #	Active Ingredient	REI-Hrs	PHI-Days	Type	% A.I.
3336 F			F	1001-69	thiophanate-methyl	Until Dry	n/a	F	41.3%
3336 GC			F	1001-70	thiophanate-methyl	Until Dust Settles	n/a	F	2.1%
Acclaim Extra			EC	432-950	ethofumesate	Until Dry	n/a	H	6.6%
Ace Soil & Turf Insecticide			G	8660-21-9688	carbaryl	Until Dry	n/a	I	6.3%
Ampro Ant Block			Bait	73242-2	hydramethylnon	None Listed	n/a	I	0.9%
Anderson's 1% Bayleton			G	9198-111	triadimeton	None Listed	n/a	F	1.0%
Autro Insecticide			EC	279-3141	permethrin	Until Dry	n/a	I	36.8%
Balan 2 5G			G	62719-96	benlate	None Listed	n/a	H	2.5%
Banicade 4 FL			EC	100-1139	proflamime	None Listed	n/a	H	40.7%
Banicade 65 WG			WSP	100-834	proflamime	None Listed	n/a	H	6.5%
Bassagran T & O			EC	7969-45	bentazon	Until Dry	n/a	H	44.0%
Battle GC			L	100-1088-10404	cyfluthrin	Until Dry	n/a	I	9.7%
Bifenxth Pro .2% GC			G	51036-389	bifenxth	Until Dry	n/a	I	0.2%
Botanigard 22 WP			WP	70010-8	Beauveria bassiana	4	n/a	I	22.0%
Botanigard ES			EC	70010-6	Beauveria bassiana	4	n/a	I	11.3%
Cavalier 50 WSB			WSP	1001-63	thiophanate-methyl	Until Dry	n/a	F	50.0%
Cavalier F			F	1001-69	thiophanate-methyl	Until Dry	n/a	F	41.3%
Cavalier G			G	1001-70	thiophanate-methyl	Until Dust Settles	n/a	F	2.1%
Certainty Turf Herbicide			G	524-534	sulfosulfuron	Until Dry	n/a	H	75.0%
Compass			DG	432-1374	trifluroxystrobin	Until Dry	n/a	F	59.0%
Compass SC T & O			EC	62719-291	spinosad	Until Dry	n/a	I	11.0%
Corral 2 68 G			G	538-188	pendimethalin	Until Washed in then Dry	n/a	H	2.7%
Corsair Selective Herbicide			G	228-375	chlorsulfuron	Until Dry	n/a	H	75.0%
Deltagard GC			G	432-837	deltamethrin	Until Dry	n/a	I	0.1%
Dimension			EC	62719-426	dithiopyr	Until Dry	n/a	H	12.7%
Dimension Ultra 2 3C			L	62719-468	dithiopyr	Until Dry	n/a	H	22.4%
Dimension Ultra 40 WP			WSP	62719-445	dithiopyr	Until Dry	n/a	H	49.0%
Dyltox 80 T & O			SP	432-1289	trichlorfon	Until Dry	n/a	I	90.0%
Eagle 20 EW			L	62719-463	myclobutamil	Until Dry	n/a	F	19.7%
Eagle 40 WP			WSP	62719-417	myclobutamil	Until Dry	n/a	F	40.0%

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.



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.

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.

Healthy Ecosystem

continued from page 12

Long Island. The longer we can contain invasive crane flies, the longer we have to improve our diagnostic, decision-making and intervention tools.

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,

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 ($\geq 70\%$ 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



T. paludosa larvae

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

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.

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.



Tipula oleracea

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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 2004¹. *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

continued on page 10