



Winter 2009

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The Northeastern IPM Center is supported by the USDA's Cooperative State Research, Education, and Extension Service, and is jointly administered by The Pennsylvania State University and Cornell University.

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Living the Green Dream

Northeastern golf courses put IPM to work

Golf course managers work hard to maintain the beautiful green carpet of turf grass that players have come to expect. This “flawless” landscape comes at a cost: it’s generally attained through heavy reliance on pesticides, long considered a requirement for acceptable playing and aesthetic conditions.

In recent years, states and localities have begun to pass laws requiring reductions in chemical pesticide use on golf courses. Turf managers need strategies to comply with new mandates, lessen environmental impacts, and continue to attract players in a competitive industry. The Northeastern IPM Center has funded several projects to help them meet these challenges.

Golfers give IPM the green light

The public golf course at Long Island’s Bethpage State Park is a living laboratory where IPM researchers have explored the feasibility of managing turf with few or no chemical pesticides since 2001. Jennifer Grant (NYS IPM Program) leads this ongoing project, which has tested numerous pest management scenarios ranging from conventional to IPM to nonchemical approaches, as well as various cultural practices. Northeast IPM funds supported the project from 2005 to 2007.

Eight years of results have shown that the quality of IPM-treated turf is often as good as that of conventional treatments, though biologically based treatments have not provided consistently acceptable turf grass.

Meanwhile, environmental benefits have been impressive: a combination of IPM and alternative cultural practices brought up to an 85% reduction in environmental impact from conventionally managed greens (as measured by the environmental impact quotient formula).

A crucial measure of success has been the roll of the golf ball, which was not adversely affected under any of the treatment scenarios.



Cupcakes, anyone? Daniel Peck checks turf samples for the presence of white grubs. Photo by Dede Hatch

Hundreds of golfer satisfaction surveys have provided the best news of all: on average, golfers rated the IPM putting greens to be good to very good, and not significantly different from conventionally managed greens. When asked about their preferences for pesticide use on public golf courses, half of those surveyed said they want to see “greens kept at reasonably good quality, using pesticides judiciously only when needed”—in other words, they choose IPM. So, as it turns out, good public relations may be an added benefit for courses that adopt an IPM program.

Creative mixtures combat grubs

When it comes to white grubs, turf managers have come to rely on the “preemptive strike,” applying the pesticide imidacloprid to control the pest in its earliest life stages. The reason?

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Sales Tip Scales for Eco Apple Growers

Growers, scientists, and marketers have successfully boosted the market for IPM-grown apples through their collaborations in the Northeast. With IPM Partnership funds and leadership from a nonprofit called Red Tomato, the multi-state "Eco Apple" working group saw sales grow nearly five-fold over a three-year period.

What was the strategy? The group emphasized what makes Eco Apples special: locally grown products, superior quality control, and the use of advanced IPM techniques based on in-depth protocols.

Aggressive promotion by Red Tomato's dedicated staff has been key, supported by a web site, IPM video, brochures, and retail display materials. Distribution involves consolidating products from 13 growers into coordinated customer deliveries.

Since the working group was funded in 2006, the number of participating growers has doubled and sales continue to soar:

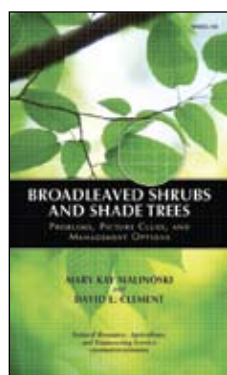
2005: \$400,000
18,000 cases
2006: \$643,000
25,000 cases
2007: \$1.47 million
59,400 cases
2008: \$1.92 million
86,876 cases

Regional Happenings

New IPM resources available in 2009

Colorado Potato Beetle Site: www.potato beetle.org.

A new web site, created by Univ. of Maine entomologist Andrei Alyokhin, will be of interest to anyone who studies or contends with the notorious Colorado potato beetle. Researchers will appreciate the searchable bibliography, while growers and crop consultants might want to check out the section on chemical control and insecticide resistance. Gardeners concerned about damage to their potatoes, tomatoes, or eggplants may find some answers, too.



Broadleaved Shrubs and Shade Trees: Problems, Picture Clues, and Management Options, by Mary Kay Malinoski and David L. Clement. Why didn't my azaleas flower this year? Why is my maple tree showing its fall colors in July? What's been chewing little round holes in the leaves of my roses? The answers to these questions and more can be found in this new guide, which will be an invaluable resource for home and master gardeners, extension and college educators, and landscape professionals. With more than 400 photos, the guide clearly illustrates problems so users can follow its easy-to-use problem key to zero in on the cause. Available in March 2009 from www.NRAES.org (NRAES-183); pre-printing discounts are available.

National Agricultural Library hosts our Center meeting

Last November, the Northeastern IPM Center met with its 30-member Advisory Council at the National Agricultural Library, which overlooks the expansive Beltsville Agricultural Research Center (BARC) in Maryland. The Center's advisors represent a wide range of IPM stakeholders—growers, land-grant researchers, environmental advocates, state agencies, and many more—who link the Center to regional needs and priorities. The annual meeting each fall gives members a chance to review the Center's programs, offer recommendations, and connect with each other.

With BARC as our host in 2008, we also had a chance to tour the grounds of the world's largest, most diverse agricultural research complex. The National Agricultural Library itself is a rich resource, with unique, historic collections and vast online offerings. Visit its web site at www.nal.usda.gov.



During our tour of BARC, entomologist Don Weber (left) explained that brassicas, like this tasty daikon radish, are especially useful as cover crops because they release compounds that may inhibit insects, nematodes, and weeds. Research ecologist Steven Mirsky (above on left) described soil and cover crop management practices that can enhance weed suppression in organic farming systems.

Smarter Lawn Care, Cleaner Water

Green-Blue Grants bring home healthier landscapes

Do you know where storm water goes when it leaves your yard? This question was posed to western Massachusetts home gardeners last summer as part of a program designed to show how lawn care practices can affect lakes, streams, rivers, and estuaries.

Residential lawns cover more than 20 million acres nationwide and receive more pesticide applications per acre than agricultural land. The EPA estimates that up to 70% of pollutants in surface waters are carried there by storm water run-off, so home landscaping decisions can have a huge impact on water quality.

The Massachusetts workshop was one of seven projects funded through the Northeastern IPM Center's Green-Blue Grants Program, which disbursed \$12,500 to promote clean water through residential integrated pest management. Nearly 1,000 homeowners and lawn care professionals in six states have received direct training through this program. Now, professionals are using their new knowledge on hundreds of clients' lawns, while posters and brochures spread the word to many more residents in the region.

IPM by the yard

In New Hampshire, landscapers and municipal decisionmakers attended a two-day program on ecologically based designs and low-impact landscaping practices. The training was then condensed for Extension volunteers, who taught homeowners to raise mowing heights, select grass species that require less fertilizer and water, and use other IPM strategies to protect the environment without sacrificing aesthetics.

Workshops for central New Jersey land care professionals included organic options and a special emphasis on the importance of communicating with clients. Homeowners also attended, and they engaged in open dialogue with the professionals. The exchange led many to plan further discussion with their own landscapers or to consider changing landscapers.

Delaware residents participated in two workshops that included education on using native plants to increase diversity and reduce the need for pesticide use.

Become a River-Friendly Resident

Do you... have native plants and beneficial insects in your yard in order to maintain healthy, diverse plant growth?

Do you... have a bird or bat house in your yard in order to help control insect pests such as mosquitoes?

Do you... tolerate some pests and weeds in your yard in order to reduce your need for chemical control?

Do you... minimize pesticide use in your yard in order to improve water quality?

If you are doing any of the above actions, you are on your way to being River-Friendly. If you aren't, now's the time to start! Contact us in order to find out how you can become a better land steward.

Your water. Your environment. Your voice.
www.thewatershed.org
609-737-3735
river-friendly@thewatershed.org

In central New Jersey's Stony Brook–Millstone Watershed, educational posters were displayed in buildings and libraries throughout 26 municipalities, with a combined population of approximately 300,000.

In New York's Putnam County, landscapers representing hundreds of clients were introduced to IPM lawn care. Two-thirds of participants said they'd reduce their use of herbicides, and all planned to offer more soil testing and zero-phosphorous fertilizers. In the state's capital district, 225 residents attended presentations on healthy lawns, and 42% of respondents to a follow-up survey had adopted at least one IPM practice, such as choosing the right grass for their site.

In Southern Maine, 150 lawn care providers took a workshop aimed at reducing nutrients and pesticides in Casco Bay. More than 90% of participants said they would add or expand natural and low-input lawn care services, and most planned to change the amount, frequency, or timing of their company's pesticide and fertilizer applications.

Products and publications from the Green-Blue Grants program will be posted at www.NortheastIPM.org/greenbluegrants.cfm.

www.NortheastIPM.org

New Alphabet Soup: AFRI Supersedes NRI

USDA's Cooperative State Research, Education, and Extension Service recently launched the Agriculture and Food Research Initiative (AFRI).

AFRI, which supersedes the National Research Initiative (NRI), will have six priority areas:

- Plant health and production and plant products;
- Animal health and production and animal products;
- Food safety, nutrition and health;
- Renewable energy, natural resources and environment;
- Agriculture systems and technology; and
- Agriculture economics and rural communities.

CSREES anticipates that AFRI's Request for Applications will be released early in 2009, and a detailed program announcement is available at www.csrees.usda.gov/funding/afri/pdfs/program_announcement.pdf. For more information, visit www.csrees.usda.gov/funding/afri/afri.html.



IPM for golf courses

(Continued from page 1)

Young white grubs are too tiny to target in scouting programs. By the time grubs reach the third instar stage—when they're large enough to sample—imidacloprid is ineffective at controlling them.

To find a solution, Daniel Peck (Cornell Univ.) tested various biological control products in combination with low rates of chemical insecticides to control third instar grubs, hoping to find new approaches for breaking down their defenses.

Sure enough, Peck found that certain strains of nematodes and fungi, which are harmful to grubs, could be successfully paired with reduced rates of insecticide for late season control. Although alone each tactic is ineffective against large late-season grubs, together they worked synergistically to kill a majority of grubs.

Having identified several promising combinations of products, Peck has leveraged his Northeast IPM funds to field-test these combinations and is now working to find ways they might be incorporated into more successful white grub IPM programs.

Outwitting weevils

Annual bluegrass weevil is a growing threat to northeastern golf courses. This native beetle can build to astonishing populations that stress or kill annual bluegrass in greens and fairways. Adult weevils invade from overwintering sites in two waves, so a single pesticide application may not control them adequately. Pyrethroid resistance adds to the difficulties of managing these pests.

Richard Cowles (Connecticut Agricultural Experiment Station) is working closely with colleagues and golf course superintendents throughout the Northeast on ways to suppress annual bluegrass weevil. With a new model for pest migration and population fluctuations, Cowles has concluded that it's preferable to scout and target larvae later in the season. Field trials in Connecticut, New York, and Pennsylvania are helping him fine-tune his approach, which favors spot treatments using pesticides that are less toxic to beneficial predators and to people.

More than 100 golf course superintendents have received instruction in this new approach, and early adopters confirm that it's working. Educational materials have been published by *Golf Course Management Magazine* and the U.S. Golf Association (<http://usgatero.msu.edu/v07/n15.pdf>).

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