



PESPWire

The Quarterly e-bulletin of EPA's Pesticide Environmental Stewardship Program Summer, 2012

7th International IPM Symposium

“IPM on the World Stage” in Memphis, Tennessee

The Environmental Protection Agency presented four outstanding organizations with a 2012 PestWise Award at the 7th International Integrated Pest Management (IPM) Symposium on March 27, 2012 in Memphis, Tennessee. The awardees were recognized for their extraordinary commitment to IPM and environmental stewardship.

The awardees include: the National School IPM Demonstration Project, the County of Santa Clara, California, the University of Arizona, Arizona Pest

Management Center, and the IPM Institute of America. More information about the awardees can be found on [page 2](#).

The PestWise awards are a component of the EPA's Pesticide Environmental Stewardship Program (PESP), a premier

partnership program that works with the nation's pesticide-user community to implement pest management strategies and reduce the health and environmental risks associated with pesticide use.

Members of PESP are categorized into three tiers: bronze, silver, and gold,

- All Risk Reduction measures
- All Education/Promotion measures
- All Economic Benefit measures

- All Risk Reduction measures
- All Education/Promotion measures
- Encouraged to report on Economic Benefit measures

- Reduced use of higher risk pesticides
- Number of people and buildings impacted by their IPM program
- One Education/Promotion measure and
- One Economic Benefit measure

The visual above demonstrates the three tiers of the PESP Program.

based on their capabilities and growth in IPM implementation (see visual above).

The PestWise awards program was established to encourage membership participation, promote IPM accomplishments and provide members and public...([continued on page 2](#))

In This Issue

- 1 [7th IPM Symposium](#)
- 2 [Sherry Glick's SIPM Award](#)
- 3 [PestWise Awardees](#)
- 4 [Modern Mosquito Control Defined](#)
— A column by Joseph Conlon of the American Mosquito Control Association.
- 5 [Fight the Bite!](#)
— How to avoid mosquito bites.
- 6 [Integrated Mosquito Management \(IMM\)](#)
- 7 [Golf Course & IPM Systems Research](#)
— An interview with Dr. Jennifer Grant.
- 8 [Golf Courses & Environmental Stewardship](#)
— An interview with Greg Lyman of the GCSAA.

EPA's Sherry Glick Wins International Award of Recognition for School IPM

During the 7th International Integrated Pest Management (IPM) Symposium, Sherry Glick from the EPA's Environmental Stewardship Branch was presented the International Award of Recognition for School IPM on March 27th.

Sherry has been immersed in school IPM and passionate about risk reduction activities for over 20 years.

For the International Award, she was nominated by peers both within EPA and from EPA's partners who support School IPM implementation.

For example, Sherry works closely with IPM experts from universities (extensions and within academia), IPM Centers, non-governmental organizations...([continued on page 8](#))



(continued from IPM Symposium on page 1) ...organizations the opportunity to align with the goals of EPA's Administrator and Office of Pesticide Programs.

The partnership program fosters collaborative innovations among IPM stakeholders, and encourages solutions to pest management that improve human health and the environment.

The PestWise awards program is comprised of three competitive categories that are based on IPM

promotion, performance, and impacts accomplishments.

The IPM Innovator Award recognizes a public organization's accomplishments during the previous calendar year, specifically in risk reduction and IPM promotion beyond their own internal operations. The award is based on evidence of substantial impacts from effective programs that promote the following goals:

- (1) **Increasing public understanding of pests and pesticide risks**
- (2) **Promoting reduced-risk practices and IPM adoption**
- (3) **Expanding biopesticide use and technology transfer**
- (4) **Promoting IPM adoption by implementing the IPM Roadmap, and**
- (5) **Achieving strides in regulatory transition assistance**

The PESP Shining Star Award recognizes silver and gold tier members' accomplishments in implementing IPM principles. The award is based on evidence of impacts in risk reduction, education/promotion, and economic benefits.

The Sustained Excellence in IPM Award recognizes silver and gold tier members who have received multiple PESP awards for their continuing commitment to demonstrate the economic benefits associated with IPM, participated in education and outreach activities, reduced risk to human health and the environment through IPM implementation, and promoted environmental stewardship through the adoption of best management practices.

For more information about the IPM Symposium, and to view many of the documents presented at this event, go to the event's online [Abstract Book \(PDF\)](#).

IPM Innovator Award: National School IPM Demonstration Projects

The National School Demonstration Project ("the Demonstration Project"), a consortium of university extension services and other IPM school experts, non-governmental organizations, and school districts, is recognized as an IPM Innovator for increasing public understanding of pest and pesticide risk using high-level Integrated Pest Management (IPM) practices.

Specifically, the Demonstration Project has reduced pest complaints and pesticide use in schools and other public buildings by 71% to 93% without acquiring long-term cost increases.

The Demonstration Districts have initiated several projects that have collected verifiable IPM metrics and have held over 50 workshops and training sessions.

These events have educated hundreds of school staff and administrators across the country and impacted over 400,000 students and 26,000 faculty and staff across 14 states.



The Shining Star Award: Santa Clara County, California

Santa Clara County is located at the southern end of the San Francisco Bay Area in the State of California that has a population of approximately 1,781,642.

The County was recognized as a PESP Silver Tier Shining Star for their continued commitment to education and the adoption of a reduced-risk approach to park systems and urban landscape management.

In the 50,000-acre county park system, approximately 83% of road right-of-way vegetation and 20 out of 27 parks are managed using non-chemical methods.

The County has demonstrated efficacy and cost-benefit ratio of using rubber mulch and wood mulch in controlling weeds in recreational landscapes and right-of-ways.

This image shows the Santa Clara County IPM Pesticide Reporting Database.

The database can be found at the following link: <http://www.sccgov.org/sites/ipm/Pages/IPM-Pesticide-Use-Reporting-Database.aspx>

(continued on page 8)

Modern Mosquito Control Defined

By Joseph Conlon of the [American Mosquito Control Association](#)

As early as 1905, mosquito control pioneers recognized the value of a diversified approach to control—including, integrating surveillance, source reduction, personal protection, and chemical and biological control.

Since the 1950's, control programs have progressively adopted the use of nationally registered public health larvicides and adulticides to take advantage of mosquito vulnerabilities within an increasingly environmentally friendly context.

That tradition continues today. In fact, the American Mosquito Control Association (AMCA) has established a formal partnership with the EPA in investigating means of improving effective mosquito control while reducing reliance upon public health insecticides.

The integrated mosquito management methods currently employed by control districts and endorsed by the Centers for Disease Control and Prevention (CDC) and EPA are comprehensive and specifically tailored to safely counter each stage of the mosquito life cycle. Larval control, through water management and source reduction, where compatible with other land management uses, is a prudent pest management alternative, as is the use of environmentally friendly, EPA-approved larvicides.

When source elimination or larval control measures are clearly inadequate, or in the case of imminent disease, the EPA and CDC have emphasized the need for the application of adulticides by certified applicators who are trained in the special handling characteristics of these products.

The extremely small droplet aerosols utilized in adult mosquito control are designed to impact adult mosquitoes that are on the wing at the time of the application. Degradation of these small droplets is rapid, leaving little or no residue in the target area at ground level. These special considerations are major factors that favor the use of very low application rates for these products, generally less than 4 grams of active ingredient per acre, and are instrumental in minimizing adverse impacts.

The safety profiles of public health insecticides are undergoing increasing scrutiny because of concerns with how the specialized application technology and product selection protect the exposed public and environment. In fact, since 1980, well over 2,000 peer-reviewed scientific studies in various national and international journals have documented the safety and efficacy of these public health insecticides at label rates, in addition to their application techniques.

Despite intense pressures to eliminate the use of public health insecticides, the CDC, World Health Organization, and other public health groups agree that it is essential that these products remain available for disease prevention, and that editorial or irresponsible misrepresentation of the risks involved not lead to the greater risk of not having them available when truly needed. They simply must remain available for the control of vectors in the times of even greater public health emergencies.

The recent emergence and spread of West Nile Virus has underscored this need for safe, effective mosquito control to meet unforeseen threats. The continued increase in worldwide tourism and trade virtually guarantees further challenges from exotic diseases requiring ready control expertise to prevent their spread and establishment. ([continued on page 4](#))



*The above species is *Toxorynchites rutilus*. This species was featured in the movie "Jurassic Park" as the mosquito captured in amber from which dinosaur DNA could be extracted. Unfortunately, is the only genera of mosquitoes that does not bite.*



Surveys of mosquito larvae are standardized using counts per dipper. Photograph courtesy of Thomas Wilmot, Ph.D.



**Aedes* sp. larvae in a neglected retention pond. Proper maintenance of retention ponds makes them unsuitable habitats for mosquitoes.*



(continued from Joseph Conlon's Mosquito Management column on page 3)

We must remain prepared to meet these challenges – our citizens deserve no less.

The mosquito control profession enjoys a long and proud legacy of community service in its pursuit of improved quality of life and a society free from the ravages of mosquito-borne diseases that have afflicted our country in times past.

This goal remains the primary focus and is fully consistent with the very finest traditions of public health.

Gambusia, the type of fish pictured above, is a voracious predator of mosquito larvae, and is often used as a control measure. Photograph courtesy of James E. Johnson, United States Fish and Wildlife Service

Integrated Mosquito Management is a comprehensive mosquito prevention/control strategy that utilizes all available mosquito control methods, singly or in combination, to exploit the known vulnerabilities of mosquitoes to reduce their numbers to tolerable levels while maintaining a quality environment.

- IMM does not emphasize mosquito elimination or eradication. IMM methods are specifically tailored to safely counter each stage of the mosquito life cycle.
- Prudent mosquito management practices for the control of immature mosquitoes (larvae and pupae) include such methods as the use of biological controls (native, noninvasive predators), source reduction (water or vegetation management or other compatible land

management uses), water sanitation practices as well as the use of EPA-registered larvicides.

- When source elimination or larval control measures are not feasible, or are clearly inadequate, or when faced with imminent mosquito-borne disease, application of EPA-registered adulticides by applicators trained in the special handling characteristics of these products may be needed.
- Adulticide products are chosen based upon their demonstrated efficacy against species targeted for control, resistance management concerns and minimization of potential environmental impact.

See the two boxes below for interesting facts and tips on IMM.

Did you know...

The principles of IMM were first developed by Albert Freeman Africanus King, MD, an obstetrician, in a publication entitled, "*Insects and Disease – Mosquitoes and Malaria*" published in *Popular Science Monthly* in 1883 - long before the concept of IPM became popular, and 15 years before Ronald Ross proved that malaria was transmitted by mosquitoes.

Dr. King was one of three physicians who attended President Lincoln at his assassination.

The photo to the right shows a treehole where mosquitoes can breed in great numbers.

A good IPM technique is to fill this space with cement in order to prevent the accumulation of standing water. To

learn more about safely implementing Integrated Mosquito Management (IMM), visit:

<http://www.mosquito.org/control>

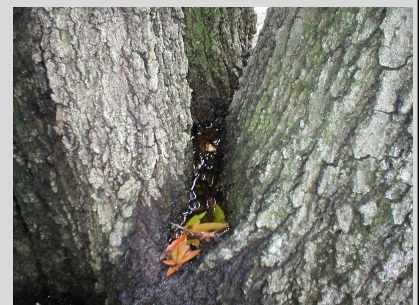


Photo courtesy of Joel Jacobson.

Fight the Bite!

The following information is pulled from the [Centers for Disease Control Website](#).

When dealing with West Nile virus, prevention is your best bet. Fighting mosquito bites reduces your risk of getting this disease, along with others that mosquitoes can carry. Take the commonsense steps below to reduce your risk:

- avoid bites and illness;
- clean out the mosquitoes from the places where you work and play;
- help your community control the disease.

Something else to remember: the chance that any one person is going to become ill from a single mosquito bite remains low. the risk of severe illness and death is highest for people over 50 years old, although people of all ages can become ill.



Get double protection: wear long sleeves during peak mosquito biting hours, and spray repellent.

✓ Avoid Mosquito Bites

Use Insect Repellent on exposed skin when you go outdoors. Use an EPA-registered insect repellent such as those with DEET, picaridin or oil of lemon eucalyptus. Even a short time being outdoors can be long enough to get a mosquito bite. For details on when and how to apply repellent, see [Insect Repellent Use and Safety](#) in our [Questions and Answers](#) pages.



✓ Clothing Can Help Reduce Mosquito Bites

When weather permits, wear long-sleeves, long pants and socks when outdoors. Mosquitoes may bite through thin clothing, so spraying clothes with repellent containing permethrin or another EPA-registered repellent will give extra protection. Don't apply repellents containing permethrin directly to skin. Do not spray repellent on the skin under your clothing.



Drain standing water from around your home.

✓ Be Aware of Peak Mosquito Hours

The hours from dusk to dawn are peak biting times for many species of mosquitoes. Take *extra* care to use repellent and protective clothing during evening and early morning -- or consider avoiding

Mosquito-Proof Your Home

✓ Install or Repair Screens

Some mosquitoes like to come indoors. Keep them outside by having well-fitting screens on both windows and doors. Offer to help neighbors whose screens might be in bad shape.

Help Your Community

✓ Report Dead Birds to Local Authorities

Dead birds may be a sign that West Nile virus is circulating between birds and the mosquitoes in an area. Over [130 species](#) of birds are known to have been infected with West Nile virus, though not all infected birds will die. It's important to remember that birds die from many other causes besides West Nile virus.

By reporting dead birds to state and local health departments, you can play an important role in monitoring West Nile virus. State and local agencies have different policies for collecting and testing birds, so check the [Links to State and Local Government Sites](#) page to find information about reporting dead birds in your area.

Mosquito Control Programs

Check with local health authorities to see if there is an organized mosquito control program in your area. If no program exists, work with your [local government](#) officials to establish a program. the [American Mosquito Control Association](#) can provide advice, and their book *Organization for Mosquito Control* is a useful reference.

A report overview of [Public Health Confronts the Mosquito](#): Sustainable State and Local Mosquito Control Programs by the Association of State and Territorial Health Officials is located on this website, including "[what you can do](#)" about mosquito control. the entire final report from the [Mosquito Control Collaborative](#) is also online.

More questions about mosquito control?

A source for information about pesticides and repellents is the [National Pesticide Information Center](#), which also operates a toll-free information line: 1-800-858-7378).

IPM Systems Research on NY State Golf Courses

A brief interview with Dr. Jennifer Grant



Quick profile:

Name: Jennifer Grant, Ph.D.

Title: Co-Director of the New York State Integrated Pest Management (IPM) Program

Professional focus: Jennifer is an entomologist by training, but has focused professionally on turfgrass, diseases, wildlife and weeds, in addition to insects.

Current research: Conducting “systems research” on golf courses in New York.

Tell us about your research:

“We have over 800 golf courses in New York State, so it’s one of the major arenas where we are trying to reduce pesticide use and reduce any potentially negative environmental impacts.

We have been running a project for 12 years now which is a systems approach of how to manage golf courses.

When we first started we were mimicking some legislation on Long Island (New York), specifically Suffolk County where several million people live.

Their pesticide laws were very restrictive – and focused on phasing out pesticides over a three-year

period.

We were interested in helping to determine what the quality would be like with fewer pesticides, and what the costs might be in quality, and dollars. We also wanted to help superintendents know what the best approaches might be.

To do this, we set up a large scale experiment on an operational golf course, the Bethpage Green Course – and to this day, we are still running that experiment.

We are not testing just one tactic, we’re using a systems approach. This means that we’re talking about a cultural shift in management practices.

Systems research is sometimes hard for people to understand what that means...it’s the whole suite of practices. A daily life example would be like comparing people on different diets: Weight-watchers, Atkins and people eating normally.

They each have different set of rules and guidelines. And that’s similar to how we set up our research. This approach is useful because it allows us to consider the reasons behind the cultural practices used by golf course superintendents.”

IPM at various levels:

“IPM by nature is very site specific. What they’re going to do on one course is different from what they’re going to do on another.

The Black Course at Bethpage is a championship course so they have different quality standards and tolerances, and expectations from their golfers.

So right there, where

there’s the same climate, the site specificity – quality expectations and management style come together for a different package.

In the Bethpage experiment, we experimentally divided the 18 greens – which are the hardest parts to manage so we focused on those.

There were three pest management systems—conventional, IPM and non-chemical—with six greens each.

We further divided these treatments so that half of the greens were managed using a standard cultural management system, and three used alternative practices that would reduce the stress on the turf grass plants.

When we went totally non-chemical on six greens in the first few years we really couldn’t maintain the quality, so we’ve gone toward a low-chemical, low-risk approach.

We have modified the systems over time. It keeps evolving – so for example, ...”

(continued on page 9)

A vacuum blower was used to detect adult annual bluegrass weevils and estimate their densities in linear tracts across fairways. Ultimately, this work will aid in reducing unnecessary chemical applications.

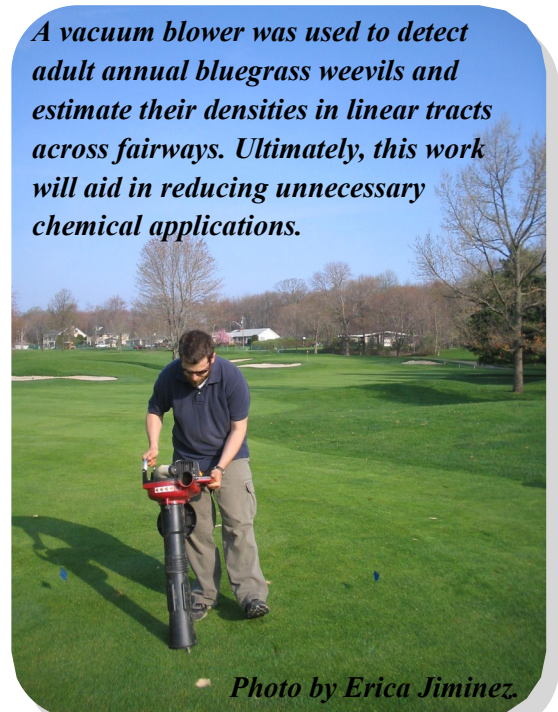


Photo by Erica Jimenez.

GCSAA Promotes IPM and Sustainability on Golf Courses

A brief interview with Greg Lyman



A quick introduction to Greg Lyman, GCSAA Director of Environmental Programs

Greg's background is in weed science and horticulture. Before working for the GCSAA, he worked as an environmental education specialist at the Michigan State University's Department of Crop and Soil Science for more than ten years. At MSU, Greg worked directly with representatives from several industries including golf course, lawn care, group maintenance and athletic fields.

"My role [at MSU] was to take all of our programs – in disease control, soils management and fertility – and identify environmental elements of what is being managed and find out how to maximize the value to the turf in terms of environmental protection and economic value – whether it was for a golf course, home lawn or corporate campus."

In his current position, Greg says he has learned that GCSAA members are intuitively committed to sustainability.

"This is one of the few games that is played on a plant. For golfers to really enjoy it, they need to be able to enjoy the landscape. They understand that they may be playing on the same course day after

day, but the conditions are changing constantly because of the environment – the plant response, season, weather, and that these are primary elements of the game."

Pests on the Course

"There are roughly 16,000 golf courses within the US with many different landscapes which need different inputs including land, water, energy, nutrients and pesticides.

They also need the professional management of these inputs. Superintendents' and golfers do recognize that the game is played out in the

powered people. They are able to integrate many techniques to reduce the damage from pests and minimize the inputs needed, including pesticides, to provide the desired golf conditions.

Many of these techniques involve optimizing the growing conditions and health of the turfgrass plant so that it can better withstand the pest pressure.

A landmark study conducted by Cornell University at the Bethpage Golf Course nearly ten years ago indicated that an IPM approach can provide acceptable playing conditions.

It can also reduce overall pesticide use

"Superintendents and golfers do recognize that the game is played out in the environment, so while in schools, biting insects, ticks and mosquitoes are called 'pests,' we just call them 'wildlife.'"

environment, so while in schools, biting insects, ticks and mosquitoes are called 'pests,' we just call them 'wildlife.'

[On golf courses] the usual suspects include mosquitoes and the occasional snake in play areas. [Wildlife] is just not that big of an issue.

But a great deal of work has gone into maximizing the wildlife capacity on golf courses.

Deer, turkeys, alligators, lizards, birds, raptors and sometimes elk can be routinely seen on many golf courses, and they all make way for passing golfers."

What do golf course superintendents need to know about IPM?

"Superintendents are the land managers, and these are solar-

during years of moderate pest pressure.

Since the time of the Bethpage study, the use of predictive models, newer turfgrass cultivars, scouting, monitoring and cultural practices are routinely used on golf courses.

(continued on page 10)



Lightweight rolling of putting greens is a cultural practice that has been shown to reduce the occurrence of anthracnose and dollar spot. Photo by Mike Morris.



(continued from Glick Award on page 1) ... and industry experts.

Sherry also supports strategic partnerships and collaborations between the EPA and other Federal Agencies including the Centers of Disease Control and Prevention, the Departments of Agriculture, Defense, Health and Human Services, and Education.

Sherry's abilities to energize and motivate others have fueled her collaborations with EPA's voluntary programs which recognize school IPM

as an integral part of EPA's Healthy Schools program. This program promotes and advocates for environmental health and protection for our nation's children.

Through Sherry's efforts, EPA's Tools for Schools Program now recognizes school IPM as a key component in their Healthy Indoor Air Quality Strategic Plan.

Since 2000, Sherry Glick developed and led a School IPM team within the Office of Pesticide Programs. This team designed and published brochures and websites to promote SIPM and was recognized in 2002 with an IPM recognition Bronze Medal award.

Even though priorities have sometimes changed within EPA, Sherry has consistently and steadfastly forged ahead to promote and advocate for more opportunities to increase the adoption of school IPM in our nation's schools.

Recently, more resources have been directed to children's health, and EPA's current administration, including Administrator Lisa Jackson, has made children's health a top priority. Building on EPA's priorities, Sherry and a diverse group of stakeholder teams have worked tirelessly to give school IPM more visibility and, importantly, to provide our nation's children with a safer learning environment.

All ten EPA Regions are involved and engaged with resources to work together in concert to collaborate with stakeholders to work towards realization of school IPM implementation in our nation's schools.

With Sherry Glick's personal commitment and dedication to children's health, she continues to work tirelessly to ensure that school IPM stays at the forefront of EPA and remains a top priority for the Office of Pesticide Programs.

(continued from IPM Symposium on page 2)

Sustained Excellence Award: IPM Institute of America, Inc.

The IPM Institute was founded in 1998 to foster recognition and rewards in the marketplace for goods and service providers who practice integrated pest management. EPA recognized the IPM Institute as a Sustained Excellence awardee for creating and marketing its innovative program for IPM certification to schools and pest control companies.

Through the Institute's IPM Star Program many schools are adopting IPM practices and reducing pesticide risk, while its Green Shield Certified program for pest control companies certifies verified practitioners of advanced IPM methods.

Gold Tier Shining Star Award: University of Arizona, Arizona Pest Management Center (APMC)

APMC was recognized as a PESP Gold Tier Shining Star for its extraordinary level of commitment to IPM.

The center has participated in several PESP workshops, served on the EPA School IPM Tool Box Committee, and is currently a member of both the School IPM Stakeholder Group and Agency's Pesticide Program Dialogue Committee (PPDC) Integrated Pest Management Sub-Work Group.

The university's school IPM programs have impacted 390,841 students, 587 schools, and 41 school districts in Arizona by reducing pests and pesticide risks to students, teachers and staff.

Through their educational programs, they have improved compliance to pesticide regulations, personal safety, and encouraged IPM adoption with five Arizona school districts receiving STAR certifications.

APMC's IPM in Public Housing Program has supported IPM education and implementation in 2,908 homes and improved the lives of more than 5,200 residents.

The Center's Community IPM Team has sponsored 22 meetings, workshops and presentations which have reached 668 stakeholders, including school personnel, homeowners, and turf and landscape professionals.

The Cotton IPM program has resulted in cumulative statewide savings to growers in reducing pesticide costs and yield losses estimated at over \$223 million.

Event Announcements:

56th Annual Conference of the Association of Structural Pest Control Regulatory Officials

Date: August 26, 2012, 8:00 AM – August 29, 2012

Location: Seattle, WA

National Pest Management Association – Regional Conference – Mid- Atlantic.

Date: July 26 – 28

Location: Hilton Head Island, South Carolina

Link: http://www.npmapestworld.org/events/documents/NPMA_Regionalconferences_Brochure_Mid-Atlantic_v08_pages.pdf

(continued from Jennifer Grant interview on page 6)

“...one of the treatments we used seven years ago may be very different from what we’re doing today. If something is not working, we throw it out and keep the effective tactics.”

Bethpage State Park, the U.S. Open, and IPM

“We were using the putting greens at the Bethpage State Park – a very well-known state park where they have a championship course which has hosted the US Open two times. The park superintendent firmly believed that this project would be beneficial to golf and to State Parks. They were willing to give us access to one course because they have five, so they could shoulder a loss in usable turf, and would hopefully never lose golfers. If the quality on one area decreased, golfers could simply choose a different course.”

IPM Tactics and Lessons Learned

“Over the last 5 years, we got to a place where we felt very comfortable and developed a good suite of low-risk practices. At Bethpage, the practices started to spread naturally to other courses, and we’ve been working very intensely to train managers in other state park golf course.

For example, we’ve recognized that wiping the dew off the greens or the fairway can be very helpful to minimize disease. It’s a great practice and some other golf courses

are getting into it. Dollar spot is one of the major diseases that plague golf courses in the Northeast US. Leaving the grass wet over those extra few hours gives the disease a good chance to get going. So golf course management can shift the work hours in their labor plan for this.

It may take extra labor and certainly extra labor earlier in the morning – like between 5 and 8 AM. Tee times are at daybreak, so if you are not ahead of the golfers, there’s a lot less that can be done once the course is populated by golfers, and there is a premium, or a re-arrangement of labor.

Advice for Golf Course Superintendents

“If you’re going to manipulate the cultural practices, the superintendents need to know everything about how it’s going to affect the playability of the game. A good way to start would be to think about the environmental impacts of the products you use. Management is often in the position where they are putting out a pesticide as an insurance, but they can back off and still provide excellent playing surfaces. We do have the data to say that we are able to manage with fewer and safer pesticides and still keep the course quality.

In the work we do, we use a tool – the [Environmental Impact Quotient](#) – which helps us to categorize our pesticides for which are softer and which are harsher on the environment and human health. And we try to get our managers to pick the softer products. They need to pick something that works, and they’re looking at cost, but this is a whole different area – we want to encourage people to look at the effects of the pesticides that they’re using.

What Do Golfers Think?

“In some ways, you hope that the golfers don’t notice. If the quality stays as good as before, if not better, then the golfers are happy. I’ve found that the golf audience is very receptive if you have something that really works.

Golfers can help make their management team aware of some of the options and be more tolerant – there’s a lot of pressure that they want professional level golf courses- they’re creating their own problems by expecting courses to be TV perfect.

Where to Turn for Additional Information?

Cornell University's Cooperative Extension - or Cornell Turfgrass has released a 98-page manual titled "[Reducing chemical use on golf course turf: Redefining IPM.](#)" It is \$30, available in English or Spanish, and provides information on how to adopt cultural practices and pest management systems to reduce pesticide and fertilizer use.

Request for Submissions

To submit a picture or article please send your photo with a description (including photo credit) to: pesp.info@epa.gov. The PESPWire editorial staff will review the submissions and choose several to be featured for future editions. Thank you for your continued readership. We look forward to receiving your submissions!

(continued from Greg Lyman article on page 7)

Ultradwarf bermudagrass varieties are becoming much more commonplace on southern golf courses as an alternative to bent grass putting greens.

An example of a cultural technique is the lightweight rolling of putting greens. This has been effective at reducing the damage caused by dollar spot, a common summertime disease on golf courses.”

How can GSCAA help superintendents learn more about IPM?

“GSCAA is committed to the advancement of the profession, so we provide educational opportunities and set the professional standards for golf course superintendents.

For example, we have a certification system that sets the level of competency in several areas such as agronomy and environmental management, and these include specific standards that deal with pest

management and pollution prevention. Mr. Lyman mentioned that the GSCAA also offers webinars and an annual conference held in the beginning of each year where association members collaborate directly with scientists from around the country to provide seminars to attendees.

Additionally, GSCAA produces Golf Course Management magazine that features case studies and highlights new research on innovative management techniques.”

How can golfers help?

“Ultimately, the golfers decide what conditions are appealing. It would be helpful if the golfers understood that the playability does not depend on a perfect-looking course.

Different turf types might look mottled or have different shades of green. To move away from a monotone green and

focus on the playability and enjoyment is important.

Some players do understand that some of the techniques like core aeration – poking holes in the turf – can be disturbing to the play of the game – but it helps to build a stronger plant which leads to better tolerance to pest damage throughout the year.

It’s the golf turf version of the mouldboard plow used in corn, soybean and wheat.

Also, during periods of stress – high heat and humidity during the summer, you are going to see more pest pressure from diseases - and it’s important for golfers to realize that that is part of the cycle.

We could go from a perfectly conditioned course and drastically improve the environmental condition and still have a very good quality [course](#).

What is best for the environment is what is best for the game. In order to have a desirable product for the clientele, there are inputs required.

We strive to strike that balance on continually improving our processes while still maintaining a quality product.

Our job (GSCAA’s job) is to help promote techniques to do this.”



Appropriate irrigation levels can reduce disease and thereby reduce inputs. Poor irrigation uniformity resulted in moist and dry areas on this kikuyugrass fairway. The only areas attacked by gray leaf spot were those with low moisture. Photo by Larry Stowell, PACE Turf, LLC.



Anthracnose is a destructive fungal disease that affects turfgrass throughout the United States, Canada and Western Europe as well as in Australia and Japan. Its severity can be significantly reduced through the use of cultural practices such as light, frequent sand topdressing and lightweight rolling. Photo by Larry Stowell, PACE Turf LLC.