

# ENEMIES AT THE GATES

The hodgepodge of weather extremes makes it difficult to predict pest pressures in 2013. GCI's experts offer their best predictions.

BY JOHN TORSIELLO



**L**ike a sleuth in an episode of the crime show “CSI”, David Phipps, a member of the Golf Course Superintendents Association of America Field Staff, is keeping his sharp eyes and ears to the ground as he helps superintendents in their ongoing battle with turf pests.

His research during 2012, a time in which the country was hit by all sorts of weather calamities, from drought to hurricanes, shows that 2013 may be a difficult year to predict in terms of what pests will be the biggest problems and where. But early indications are that it might not be pretty.

“In the early days I could almost predict to the week when I was going to see an outbreak, whether it was bill bug or crane fly. Either way, they were predictable. Now it seems we are in the midst of changing weather conditions and year to year we never know what to expect. It has almost become a wait and see approach but we have to be proactive. I believe it will be more of the same but in greater populations.”

Phipps says, somewhat alarmingly for superintendents, that “pests are on the move” and it will be “imperative” that they be tracked. “Regions may start seeing increasing populations of seldom seen pests and superintendents will need to be vigilant at monitoring their surrounds.”

He says IPM and local scouting are the “tried and true method,” but adds a warning caveat, “We need to take it a step further and utilize and/or develop regional programs to provide a wide data base to track pests so we can be prepared.”

Superintendents around the country are also on the alert and ready to meet their enemy at the gates.

“Here in Atlanta, we had almost no winter

last year which was good for rounds of golf but made for some interesting adjustments agronomically,” says Anthony Williams, director of grounds at Stone Mountain Golf Club by Marriott in Stone Mountain, Ga. He reported his area is 10 inches behind normal rainfall and it appears that many pests he does not generally see as issues are building populations way beyond IPM thresholds.

“I was at the putting green the day before Thanksgiving and a mole cricket crossed the sidewalk as I was evaluating the green. We seldom see mole crickets this far north. I utilized an effective biological control for this one mole cricket but it is a sign of the times. He adds, “Now more than ever the successful superintendent must be vigilant through active scouting and monitoring critical benchmarks as Mother Nature changes the scheduling and execution of our core programs.”

On Long Island, N.Y., an area hit hard by Superstorm Sandy in mid-autumn, Brian Benedict, superintendent at The Seawane Club in Hewlett Harbor, N.Y., is concerned with the annual bluegrass weevil. “Although it’s an older pest it seems like we are losing ground to resistance to selective insecticides. We had a huge infestation in 2012 and I attribute that to a mild 2011-12 winter. I am actually hoping for a big freeze this winter desiring to kill off the insects.”

Paul Brandenburg, superintendent at Furman University Golf Course in Greenville, S.C., reports several pest concerns as 2012 ended.

“We ultra dwarf guys, some of us dealt with pink snow mold last year and that was new and definitely weather related. Mini ring (a strain of rhizoctonia) is always a concern. Sod webworm is always a concern. Most of us spray preventively for spring dead spot and fairy ring.” In bent grass, dollar spot, brown patch and pythium remain the big concerns and pythium volutum seems to be on everyone’s radar, he adds, perhaps due to more prolonged heat and humidity in the area.

Dr. John Inguagiato, assistant professor of turfgrass pathology at the University of Connecticut in Storrs, takes a pragmatic approach to the issue.

“Predicting next year’s turf disease challenges can sometimes be about as accurate as

a reading from a carnival psychic. As we all know, disease outbreaks, particularly foliar ones, are largely dependent on the weather conditions before and during infection. Therefore, it is difficult to accurately forecast what diseases are going to be problematic next year.”

Dr. Jim Kerns, turfgrass pathologist at the University of Wisconsin in Madison, concurs. “It is very difficult to predict what diseases or insects will be problematic next year,” Kerns says. “Diseases in particular are governed by the environment and we have no idea what next year will hold for us. Ultimately we continue to see issues with dollar spot, anthracnose and pythium root diseases. However, next year may hold a different set of problems.”

Says Dr. Gwen K. Stahnke, extension turfgrass specialist at Washington State University in Pullayup, believes that because it was so dry this past season in many areas of the country, if areas of a course were not watered, superintendents may have more problems with weeds in those areas where open areas were created. “It is an ideal place for annual bluegrass or moss to invade during the winter.” She reports that several areas of the country have entered microdochium patch weather,” and that disease will be popping up from now until the rain stops in July, most likely.

“I have seen a lot of adult crane flies on our research farm, so people should be monitoring areas where they have had problems in the past, or watch areas where they were watering in August through September and it remained wet. That is where the eggs were laid. Also monitor the feeding of birds. They actually cause more damage than the crane fly larvae themselves. The crane fly larvae will feed over the winter, so monitor and treat in February if there is a severe problem.

She adds that during late October, the state of Washington had its first outbreak of a disease called rapid blight that was first found in California in 1995 and identified at the University of Arizona in 2002. The causal agent was found to be an aquatic organism called *labyrinthula terrestris*. The organism is associated with saline irrigation water and an accumulation of salt in the soil. It is not temperature dependent and the symptoms look very much like microdochium patch.

Dr. Stahnke says, “As we use more re-

cycled water with more salts for irrigation, we will need to be aware of the build-up of salts in the soil. Normally, the PNW gets at least one flush of rain to move the salts through the root zone naturally. This is not something to be alarmed about, just something we need to monitor. Rapid blight affects most grasses with the exception of creeping bentgrasses, slender creeping red fescues and alkaligrass. Irrigating with clean water before salts build up will solve the problem. There are several fungicides that will control this pest.”

Some cool season pythium outbreaks on greens during fall, Stahnke says.

“We have had this problem for the past three years, so superintendents know that when the temperatures cool off and the excess rainfall comes, that this could be a problem,” she says. “The first year we lost about \$500,000 worth of greens. There are specific fungicides to apply for this water mold as a preventative and curative method.”

That excess shade over greens seems to be a key factor in promoting the disease, but excess moisture in the root zone, mowing too low, and a stressed plant also need to be present to get infection, Stahnke says.

Kerns: “There are a few new problems out there. John Kaminski is doing some nice work on a disease called thatch collapse, which is somewhat like a fairy ring disease. Of course bacterial diseases have been a hot topic lately, but most of the research right now clearly shows that this issue is related to extreme heat stress. Thus combating heat stress is probably the best way to combat this particular bacterial disease. Nematodes are a major issue because we have an extremely limited supply of effective nematicides. Nematode issues are not new, but they are

becoming an emerging problem because we relied heavily in the past on conventional nematicides like Nematicur.”

Keith Happ, senior agronomist for the USGA’s Mid-Atlantic Region, is hoping for a “real” winter in the Mid-Atlantic Region. “Last year’s mild winter was a blessing for golf but resulted in a few issues that are not normally a problem for turf managers in our region. Scouting and testing this season will be very important,” he says.

He agrees turfgrass management issues are becoming bigger concerns for a majority of superintendents... everywhere.

“Annual bluegrass weevil, for example, used to be a problem only in the Northeast. Now it is a concern in the Mid-Atlantic and North Central region. Same for nematodes. It was something you would read about on warm season grass down South. We have turfgrass management issues that overlap

preventative but don’t act before you are sure what the issue is. For weevil control, for example, we have great growing degree models that help target product applications. We have a number of phenotypic indicators as well that help get the most from control procedures. We can’t just put the intended application on the calendar anymore and assume that the date selected for treatment will provide the expected result. Site specific applications may be more the norm rather than blanketing the property with an application for insect control.”

The best approach to predicting what diseases are going to be problematic in the future is to reassess the disease history on a course, Dr. Inguagiato says.

“Recall what diseases were most prevalent and where on your course over the past few years. Consider site factors such as poor drainage and air movement or soil

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—Jim Kerns, University of Wisconsin

regions now. We deal with many of the same maladies that other region do. As the saying goes, if it is going to occur, it will happen in the Mid-Atlantic region.

Okay, enough of this doom and gloom. There are ways to combat any pests that may cause problems in the future.

Says Happ, “Control procedures and products applications are becoming much more specific. While this is a BMP there is also the concern of resistance. We already have documentation/confirmation of weevil resistance to pyrethroid insecticides. We had our first confirmation in the Mid-Atlantic region of grey leaf spot on tall fescue. Ryegrasses have been developed and selected for tolerance to the grey leaf spot fungus but they are not resistant. Sustainability is going to hinge on research and continued development of grasses that will perform under wide ranging environmental conditions.”

He advises superintendents to “test, scout and sample,” adding, “Be

pH that may predispose those locations to a particular disease. If those conditions have remained the same, or worsened, chances are you will likely see disease in those same spots next year.”

Fungicide resistance continues to be an important factor influencing fungal pathogens’ ability to cause disease. Dollar spot, anthracnose, gray leaf spot, and microdochium patch (in the Pacific Northwest) are all diseases where the causal agent has been found to be resistant to single-site mode of action fungicides. Rotating among these materials and tank mixing with multi-site fungicides remains an important strategy to delay further resistance issues.

Many improvements to correct site conditions can be made during the offseason. Soil testing and adding amendments, installing drainage, removing trees and other actions now will help minimize conditions favorable for disease development next summer. (continued on page 47)



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(PESTS continued from page 41)

that is seriously close.

Getting 0.39 inches (1 cm) away from your subject is the primary reason I don't recommend the clunky DSLR cameras for shooting turf. The small body of the point and shoot allows you to get right into the canopy and capture the subject effortlessly. This is great for trying to get close to the plant to identify signs of the pathogen for digital identification. This works for any fungus that produces fruiting bodies, such as gray snow mold, anthracnose, and red thread.

**SHOOTING FOR A PROPER DIAGNOSIS.** So you received that perfect camera for the holiday and you mastered the macro function during the winter by taking pictures of spiders in your shop. Now you're ready to road test that camera. Capturing images for a disease diagnosis is a multi-step process.

Proper identification of any turfgrass disease requires a clear visualization of the symptoms as well as the signs of a pathogen. The same holds true for an insect pest as well, although identifying those critters usually relies on the macro mode to capture a close-up of the insect.

What I look for three images in a digital diagnosis. I like to see a broad spectrum view of the problem area. Think about a standing position shot of the entire section of the green, tee, or fairway impacted by the problem. This not only gives me some information about the site (Is it surrounded by trees?

Is it in a low lying area?), but also provides me a wider view of the problem.

Next, I like to see an image taken from the standing position, but that gets a closer perspective of the symptoms. Think of this shot as those you see where the tips of the photographer's shoes make it into the picture. As you get really good you can even eliminate those from the view. Finally, it is back to the Macro mode mentioned previously. Get down close and get an image of either a lesion or some other symptoms on an individual plant or even find a sclerotia or some other sign of the pathogen. Get one of those and a diagnosis may be confirmed with 100 percent certainty.

**SAVE YOUR MONEY AND PRACTICE.** As with any hobby or skill, it takes practice and patience to get the best shot. Be sure you take the time to learn the various functions of your camera and the settings that will get you the best results. Practice shooting during the winter months until you're confident that can translate that experience into the field. Once you've developed the skills and techniques to capture the best quality images, you will realize that spending thousands of dollars on expensive equipment isn't necessary.

Feel free to send your images to Turf Diseases on Facebook, Twitter or via email ([upload@turfdiseases.org](mailto:upload@turfdiseases.org)) to get a second or even third set of eyes on the problem. **GCI**

The offseason also provides an opportunity to re-evaluate fungicide programs and make adjustments for next year. Regional 30-year weather averages can be helpful for developing a baseline fungicide program. Select fungicides to cover more than one disease and be sure to rotate and tank mix modes of action. Several new fungicides, including a new multi-site fungicide, have recently become available, with more coming soon.

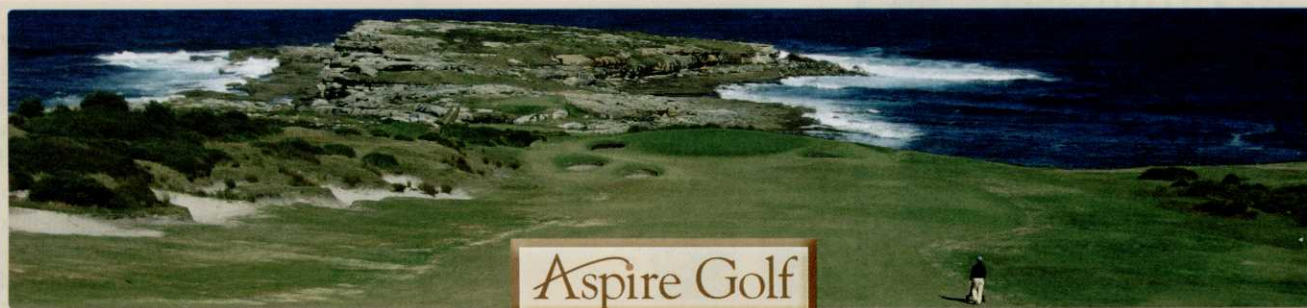
Kerns adds, "The most important thing is to focus on plant health. In order to make your plants more tolerant of stresses don't limit nitrogen, manage the water using soil moisture meters, conduct the key cultural practices such as light, frequent topdressing and venting."

With regard to nematodes and bacterial diseases, these problems are related to physiological stress, Kerns says. Consequently, anything to limit stress will limit problems associated with these two organisms.

"Things like light, frequent topdressing, venting, alternating mowing and rolling, raising mowing heights slightly, maintaining a consistent supply of nitrogen, etc. will all help to limit stress and in turn limit problems associated with nematodes, bacteria and other fungal pathogens as well," Kern says.

He concludes, "I take a very simplistic approach to turf grass management. What does the plant need? Basically light, food, water and air, so how can we ensure that the plant has access to these necessities? By employing the cultural practices listed above and potentially evaluating the microclimate too." **GCI**

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