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WISCONSIN ENTOMOLOGY REPORT

Could there be a single-application solution? The answer to this question is YES, based on some recent research from our lab. We investigated this topic in 2009 and 2011 at Bergamont Golf Course (Oregon, WI) using controlled infestations of 2nd/3rd instar black cutworm larvae. In both years, the anthranilic diamide, chlorantraniliprole (Acelepryn, DuPont®), provided the most consistent control of BCW larvae. A single (June) application of chlorantraniliprole still provided ~80% control of larvae after 70 days in each year. We also evaluated two neonicotinoid insecticides (thiamethoxam and clothianidin), which provided variable control of BCW. In 2009, thiamethoxam (Meridian, Synegnta™) provided excellent control, and performed just as well as chlorantraniliprole through nearly 90 days. In 2011, things started well, with chlorantraniliprole, thiamethoxam, and clothianidin all providing excellent (>90%) control of BCW a week and a half after application. However, unlike chlorantraniliprole, which provided consistent control in 2011, thiamethoxam and clothianidin provided more variable control throughout the summer, and at times provided <50% control.

Why these differences in control?

Our data showed that thiamethoxam worked well in 2009, but had variable control in 2011 (clothianidin was not evaluated in the first year of the study). It's possible that Mother Nature had a hand in things. The summer of 2009 ended up being the 7th coolest summer ever recorded in Wisconsin, and the coldest in Madison's history. In July of that year, Madison had an average temperature of 65.7°F, a maximum temperature of 82°F, and only 7 days with temperatures that reached 80°F. Overall, the summer of 2009 was consistently cool. In contrast, the summer of 2011 was one of the hottest recorded in the Midwest. In July of 2011, Madison experienced 23 days with temperatures of 85°F or greater, 8 days of 90°F or greater, and a maximum temperature of 97°F. It's possible that the hot conditions in 2011 affected pesticide degradation, which led to more variable control.

While the verdict isn't entirely in yet on thiamethoxam and clothianidin, it looks like a single application of chlorantraniliprole may be a viable option to manage black cutworm on your bentgrass putting greens.



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Wait 'til Next Year...a 2011 TDL Year in Review

By Paul Koch, Turfgrass Diagnostic Lab Manager, O.J. Noer Turfgrass Research and Education Facility

That makes two in a row. Two consecutive years that were alternately cold and hot, wet and dry, barely bearable and downright nasty. Following the difficulty the region experienced during the summer of 2010, this was an unwelcome development as many budgets were again slashed and customer expectations refused to fall along with them. While we unwind and wait for the first flakes to fall, let's take a moment to look back on the year that was from the eyes of the Turfgrass Diagnostic Lab.

Though snow mold was prevalent in some pockets of the state, mainly throughout central Wisconsin, widespread disease breakthrough was not observed. It appears that most facilities survived the winter without PCNB, a forced lesson as a result of the Environmental Protection Agency's (EPA) stop sale order in August of 2010. The big story in the spring of 2011 aside from the cold May wasn't snow mold or ice damage recovery, but rather mysterious reddish-colored putting surfaces. The purely aesthetic discoloration appeared to be related to plant growth regulator applications made shortly before a frost or freeze, though the evidence to support this is purely anecdotal. This phe-

nomenon has been observed in past springs, but not nearly to the same degree as in 2011. Fortunately, once temperatures warmed the discoloration disappeared and no visible long-term effects were observed.

As spring slowly changed to summer, the rains began for certain areas of the state and didn't really stop until summer had nearly ended. Rains pounded areas of northern Wisconsin and far southern Wisconsin with seemingly daily bouts of a half inch or more, saturating the soils and causing anaerobic conditions in some soils and severely inhibiting the rooting depth of a large portion of annual bluegrass and even some creeping bentgrass turf (Figure 1). One superintendent in central Wisconsin likened it to southern Florida in the summer, when daily afternoon thunderstorms sweep through and drench the area. When the temperature and humidity skyrocketed along with the rainfall totals in mid-summer a trying summer became even worse for many. In addition to worries over flooding and annual bluegrass rooting depth, hot weather diseases such as Pythium blight, brown patch, Rhizoctonia leaf and sheath spot, and anthracnose became prevalent across the region of the second consecutive year (Figure 2). Most superintendents protected their grass adequately from the disease onslaught until the heat wave broke in late July.

Rather than rejoicing with the cooler temperatures and lower humidity, though, many superintendents experienced rapid wilting and losses of annual bluegrass. Ironically, the high soil moisture and humidity that was promoting disease activity and stressing the plants actually was helping the plants in a way. The annual bluegrass plants with the shallow rooting depth were protected in a way because the humid conditions inhibited plant transpiration rates, making it difficult for the plant to cool itself but also making wilt less likely. Once the humidity dropped, wilting of the annual bluegrass was almost impossible to prevent and afternoon handwatering became a daily ritual for many facilities in late July and August. Despite all the trouble keeping turf alive, pine trees dominated discussion in most maintenance shops for much of the summer. This unfortunate diversion of time and resources will serve as a reminder for the future that what seems like a 'can't miss' product can still strike out, be taken out of the lineup, sent to the minors, and banished from the organization.

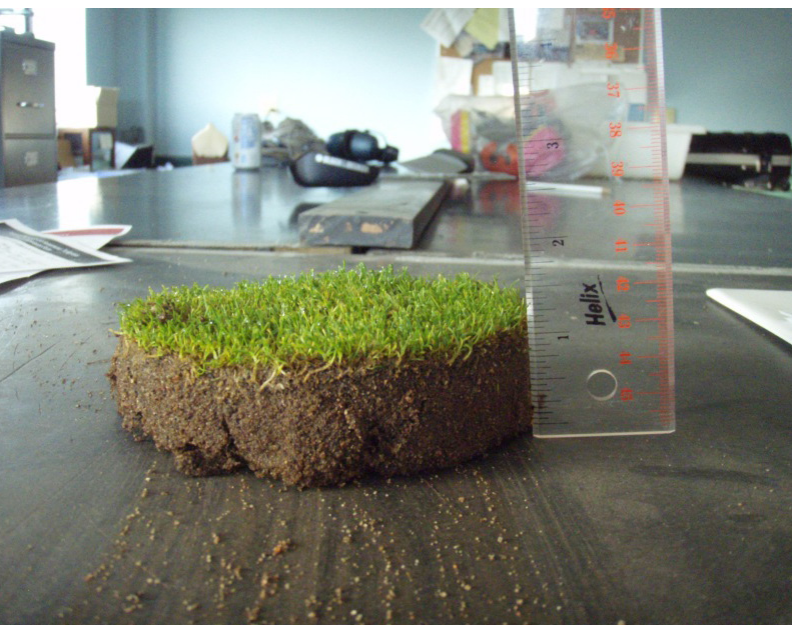


Figure 1: With annual bluegrass rooting depth at many golf courses under one inch, it was difficult to keep the turf alive in July and August.



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Figure 2: A basal rot anthracnose outbreak in August on creeping bentgrass left many superintendents in the region frustrated.

August had generally pleasant weather, but a hidden disease began to cause widespread damage to annual bluegrass. Due to the hot, humid, wet weather of the previous months the summer patch fungus (*Magnaporthe poae*) caused widespread damage to bluegrass roots in general and the symptoms became evident in late July and continued through September. Unfortunately, once the symptoms of summer patch become evident the only short-term control strategy is to increase irrigation frequency on the affected plants to make up for the plant's decimated root system.

A pleasant, if not slightly dry, fall was a welcome relief for the state's superintendents. Cultivation was undertaken to increase oxygen flow to the roots, and recovery projects that weren't touched during the heat of the summer were completed that will hopefully lead to stronger, healthier turfgrass going into 2012. While the conditions consisting of prolonged heat and humidity probably weren't quite as severe in 2011 as in 2010, it was still a second consecutive miserable year for many in the turfgrass industry. The TDL sample submission breakdown shows as much (Table 1). As we look forward to weeks of catching up on reading and general maintenance around the shop and the course, we can actually gain inspiration from *The Grass Roots* editor and other fans of that baseball team to the south. Though last year didn't go as planned, and neither did this year, there is always hope that next year will be the year that everything comes together for a safe, productive, and enjoy-

able year. Let's hope we don't have to wait as long as Cubs fans have been waiting though.

Thanks to our 2011 contract members

As I have stated numerous times over my 6 year tenure at the TDL, the lab does not receive a single penny of support from the University or state of Wisconsin. I recently had a conversation considering the state of turfgrass diagnostics with a turfgrass professor from the eastern part of the country, and our conversation centered on the decreasing number of turf-specific diagnostic labs around the country. Entire regions of the country, including golf-heavy areas such as California, no longer have university-based turfgrass diagnostics. As you are all aware, having a turf-specific diagnostic lab is critical because of the unique recommendations for dealing with potential disease that a turf diagnostician must make as compared to disease problems in other agronomic or horticultural crops. The reason for the decreasing number of diagnostic labs is actually quite simple, diagnostics is just not profitable.

The TDL charges \$100 for a commercial diagnosis, which is very similar to what most other turfgrass diagnostic services charge. We average about 100 commercial samples a year, which is more than only one or two other labs in the country. Simple math then shows that in a given year a turfgrass diagnostic service will bring in about \$10,000 of revenue. This math doesn't add up to much, and certainly not enough to pay a turf-specific diagnostician, which is why turfgrass diagnostic labs are decreasing in number.

So why is it that the TDL is not only surviving, but thriving? Efforts by both Dr. Kerns and myself over the last several years to make the TDL a more regional presence has paid dividends as samples from coast to coast were shipped to Verona, WI in 2011. Like other labs, we supplement our revenue by testing fungicides and then relaying the results to you in the form of the winter and summer research reports. But with more money coming in from fungicide testing than diagnostics, many universities have opted to either reduce their focus on diagnostics or eliminate it entirely.

So again, why has the TDL succeeded and continued to grow for all these years since its beginnings under Dr. Doug Maxwell in the 1990's? There are numerous explanations, but in my mind a critical factor is the support of our contract members. No other turfgrass-specific diagnostic lab in the country, to my knowledge, has a contract system similar to ours. Other labs have tried to initiate systems like ours, but they have failed due to lack of industry, and specifically golf superintendent, support. We don't have that problem in Wisconsin, as we have nearly 70 contract members that provide over \$20,000 in support of the TDL (Table 2).

TURFGRASS DIAGNOSTIC LAB

This by no means covers all the expenses required to run the TDL, but it shows the deep support that the turf industry in Wisconsin has given to the TDL even amongst the most trying of times for most facilities. As the manager of the TDL I am deeply thankful for all those who support the TDL, including the recent WGCSA donation of \$1,975 and Horst Distributing's continued donation of Aquatrols Turfbucks. But I am most grateful to the contract mem-

bers who continue to commit dwindling dollars in the face of increasing scrutiny to the TDL year after year. To put it simply, without the support of so many contract members, there would be no TDL. For more information on contract memberships with the TDL, or to sign up for a new membership or renew a continuing one, visit the TDL's website at www.tdl.wisc.edu.

2011 TDL Diagnoses				
Diagnosis	Professional		Homeowner	
	2011	2010	2011	2010
Take All Patch	6	6	0	0
Abiotic	42	53	25	34
Microdochium Patch	2	1	0	1
Leaf Spots	3	10	10	15
Insects	0	0	2	7
Anthracnose (Foliar and Basal Rot)	13	9	0	0
Fairy Rings	3	7	1	1
Necrotic Ring Spot	1	1	8	3
Summer Patch	6	13	28	15
Brown Patch	3	2	0	13
Brown Ring Patch	3	3	0	0
Rough Bluegrass (poa trivialis)	0	0	6	5
Typhula Blight	1	4	6	2
Snow Scald	0	0	0	0
Weed ID	2	0	15	19
Dollar Spot	2	3	0	1
Pythium foliar blight or root rot	4	7	1	1
Other	7	1	3	7
TOTAL	91	123	106	124



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Thank you to the 2011 TDL contract members!!!

Names in bold are \$1000 contract members

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Seasons End

By Brett Grams, WGCSA Chapter Manager

I would like to wish everyone a happy holiday season. 2011 was another challenging year for many of us so I hope you can make time to catch up with friends and family and hopefully decrease your stress levels from the golfing season.

Like all of you I use this time of year to look forward and plan for next season. Membership renewals are going to arrive in the mail soon, budgeting and planning for our 2012 events is also completed at this time. I am happy to report our meeting and events calendar is nearing completion. Please use our website to keep up to date on our events and plans for 2012. The PAR4 Research committee is also planning for our 3rd annual auction which will again coincide with the Masters. Also be on the lookout for information on our Assistants meeting in February and for those of you who are going to the GCSAA's GIS and conference please note that we will be having our Wisconsin Room at El Segundo Sol on the strip in Las Vegas Wednesday February 29th from 6 to 8 pm.

This time of year is also a great time to reflect back on the year that is soon coming to a close. I am very proud to work with our board of directors. These volunteer leaders make time to ensure our chapter is serving our diverse membership needs. I want to personally thank the entire Board of Directors for their service in 2011 and specifically Mr. Mark Storby of Oneida Golf and CC as he completes his service on the board, most recently as our Secretary. Thank you to our *The Grass Roots* Editor David Brandenburg for his many hours spent making sure this magazine remains as strong as ever. All attendees of our monthly meetings are thankful to all host Superintendents, facilities and staffs for making our 2011 events a success.

In 2011 our Industry Partnerships with our valued Affiliate Company Members was stronger than ever. Special thanks to Milorganite for being our Title Sponsor of our WI Hospitality Room in Orlando as well as underwriting the WI Golf

Turf Symposium for the 46th consecutive year! Also, multiple thanks to Reinders who donated the proceeds of the final Reinders - Daconil Program this year. This has been a generous addition to our Scholarship and Research funding for many years.

We are very thankful to our Platinum Level Partners for 2011. This level of sponsorship supports all of our association efforts including the Grass Roots, website, monthly meetings, WI Room at GIS, directory, and prizes at events all at the highest level. This year's generous Platinum Level Partners are BASF, DHD Turf and Tree, JW Turf, Reinders, and Syngenta. We also had the generosity of Burris Equipment as our Gold Level Sponsor and our Silver level sponsors for 2011 were Bruce Company, John Deere Golf, Midwest Turf and Spring Valley.

In addition to the companies mentioned above who taken part of our package offerings we have over twenty other company members that have supported the WGCSA with various sponsorships or advertising opportunities. Please consider these generous companies as you make your buying decisions and let them know that you appreciate their generosity and support. Thanks to the companies that support the WGCSA we can keep the cost of attendance at events low and can continue to provide much needed revenue to fund research and other programs that enhance our profession right here in Wisconsin.

Lastly, thanks to all 430+ member of the WGCSA. Since our humble beginnings 81 years ago we have continued to offer networking, leadership, and educational meetings that benefit our members and our profession. Thanks to all of you who participated in our events and attended our meetings this year. I challenge all of us to attend our meetings and educational events as strong participation ensures a stronger association and a stronger profession for all.

WGCSA MISSION STATEMENT

The Wisconsin Golf Course Superintendents Association is committed to serve each member by promoting the profession and enhancing the growth of the game of golf through education, communication and research.

WGCSA VISION STATEMENT

The Wisconsin Golf Course Superintendents Association is dedicated to increase the value provided to its members and to the profession by:

- Enhancing the professionalism of its members by strengthening our role as a leading golf organization in the state.
- Growing and recognizing the benefits of a diverse membership throughout Wisconsin.
- Educating and promoting our members as leaders in environmental stewardship.
- Offering affordable, high value educational programs at the forefront of technology and service.
- Being key to enjoyment and the economic success of the game of golf.