



CHIPS & PUTTS

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Kovacs Awarded Patterson Scholarship

The PTGA would like to extend congratulations to Ben Kovacs, this year's winner of the Patterson Scholarship. Ben is a 2002 graduate of Delaware Valley College with a B.S. in Agronomy. His work experience includes two seasons on the grounds crew at Saucon Valley C.C. under Terry Laurent and an internship at Lehigh Valley C.C. for John Chassard. He is currently the Assistant Superintendent at Waynesborough C.C. The Association wishes him the best of luck.



Duane Schell to Host Clambake...

Blue Ridge Trail Golf Course in Mountain Top is the venue for the 2002 Pocono Turfgrass Association Clambake and four-man scramble tournament. Duane Schell has been the golf course superintendent at Blue Ridge since 1998. An Ault and Clark design, the course's back nine opened as Alberdeen Acres in 1992. Current owner Bob Tambur purchased the property in 1996 and completed the front nine as well as a new clubhouse, driving range, and full cart path. Duane employs 12 seasonal employees, as well as three full time staff. The golf course has blossomed to 35,000 rounds annually and has established itself as one of the premier public golfing facilities in the Wilkes-Barre/Scranton area. An added attraction this year is the global positioning system (GPS) now aboard each cart.

Duane is a 1995 graduate of the Penn State two-year Turf Program. He also received a bachelor of Science in Business Administration from Bloomsburg University in 1993. Duane credits Wayne Knelly with giving him his first taste of the turf industry in 1985 at Sugarloaf Golf Club where he worked until 1995. After interning for Terry Laurent at Saucon Valley, Duane moved on to Doylestown Country Club as John Mizikar's assistant superintendent in 1996. Duane is joined in life by Mary, his wife of five years, and their daughter Kyra. They are also awaiting the arrival of their second child in February 2003.



President's Message.....

As I write this message, I find it hard to believe that the anniversary of 9/11 is only a week away. I remember that day as if it were yesterday. Playing golf at Great Bear, the weather was excellent, the golf course was great. Everything seemed like it did not affect us in the Poconos, but almost every aspect of our lives has changed. Maybe some changes are not as noticeable as others, but they are there. Just think about it.

As I reflect upon the last year, I realize that I was unable to follow the changes in my life that I wanted to see happen. To be honest with you, I am very angry with myself about it. I wanted my relationships with family and friends to grow, to spend more time with them and less time at work. Well, just the opposite has happened. Unfortunately, I will never be able to capture that time I lost. I, along with many of you, was consumed with work this summer. Sometimes we are bound to lose a little turf or have some crabgrass where we thought we put down a preventative - well, stuff happens.

So, the point of this message is to take time for you. Whether it is spending time with your family or just by yourself. Let's take a step back and relax.

Gene Huelster

P.S. I have some textbook crabgrass (dinner plate size) where I thought I put down preventative. If you need some, don't hesitate to call.

From the Editor's Desk.....

I took advantage of today's rainy day to wrap up this month's issue. Sadly, you have 50-50 odds of guessing which rainy day this is. Some turf is already responding to the rain and cooler temps. You look at other areas and think there is no way there will ever be grass there again, but a couple more weeks and hopefully the drought scars will be a two-week old memory.

I joined the realm of "those who have it" this summer with respect to Basal Rot Anthracnose. What a humbling experience that was. We are following the USGA's recommendations with respect to promoting the health of the turf by raising the height of cut and fertilizing every week. My members are being very patient, but I cringe at the length of backswing that their putters now require.

Eric Reed



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Are You Misdiagnosing Bacterial Wilt on *Poa annua* Greens?

By Stanley J. Zontek, Dir

Since our last Web site update, an interesting development has occurred. More Mid-Atlantic Region golf courses are being diagnosed with bacterial wilt on *Poa annua* greens, caused by the organism *Xanthomonas campestris*. Those of us with some years logged in the industry remember bacterial wilt as a problem on vegetatively propagated strains of C-15 Toronto creeping bentgrass.

What was once a rare occurrence is now becoming more common. In the past two weeks, well over a dozen golf courses have been positively identified as having bacterial wilt. In almost every situation, the superintendents thought they were fighting anthracnose, another destructive disease of *Poa annua* greens. However, the fungicide control programs they were following were not working. The *Poa annua* continued to decline in spite of their best efforts.

Close examination of the grass with a macroscope showed few, if any, anthracnose fruiting bodies, the bentgrass was doing fine and yet the *Poa annua* continued to decline.

At least initially, most of the superintendents we visited were at least relieved to know that it was not anthracnose! The following are a few clues to help in the field diagnosis of bacterial wilt.

- Ø The only grass affected is *Poa annua*.
- Ø Decline occurs almost exclusively on greens.
- Ø The symptoms are most common when the grass is under intense stress: environmental (heat and humidity) and mechanical (close mowing) stresses.
- Ø The disease resembles mini dollar spot infection centers. The spots are never larger than a dime in size. Some are as small as your little fingernail.
- Ø Close examination with a 25-40 power macroscope shows a bleached, wilting grass plant without the characteristic acervuli (the black spiny fruiting bodies) of anthracnose.

Basal rot anthracnose, which can be active at the same time, can start as bright yellow *Poa annua* stems and patches where the base of the stem is black. However, as the disease progresses, you almost always see some acervuli. If acervuli aren't present, the *Poa annua* is declining, the bentgrass is thriving and you see a pattern of small dime size or smaller white spots, you may have bacterial wilt.

- Ø Positive diagnosis is obviously important. Send a sample to a plant diagnostic laboratory and indicate you think it may be bacterial wilt. The laboratory personnel must screen for this disease in a different way. The infected leaf is dissected, and if at the proper stage, the bacteria literally ooze out. This disease is a vascular wilt and does not injure the grass like other fungal diseases.
- Ø In the near future, the scientists at the University of Maryland, Dr. Peter Dernoeden and John E. Kaminski, will produce a fact sheet on bacterial wilt.

As always, if the agronomists of the Mid-Atlantic Region can be of assistance at all, you can contact Stan Zontek (szontek@usga.org) or Darin Bevard (dbevard@usga.org) at 610/ 696-4747 or Keith Happ (khapp@usga.org) at 412/ 341-5922.



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SOME FACTS ON AERIFICATION....

Give a veteran superintendent a dollar for every time he has heard, "Why do you punch holes in our greens just when they start to look good," and he would be a wealthy man.

Soil aeration is the process by which soil air is replaced by atmospheric air. Soil air differs from atmospheric air in that it has higher concentrations of carbon dioxide and water vapor, but less oxygen. The differences are due to the consumption of oxygen and the production of carbon dioxide by soil organisms. The magnitude of these differences depends on the rate of gaseous exchange between the atmosphere and the soil. This exchange is often associated with the movement of water into and out of the soil.

The primary purpose of core aeration is the physical removal of unwanted organic matter from the upper portion of the root zone. When core aeration is neglected, the upper portion of the profile can become an inhospitable place for plant roots to grow. The pore space in a dense organic layer will be dominated by small, water-filled capillary pores, large air-filled macropores will be lacking.

Therefore, the single most important issue of good soil management is oxygen. Without the positive flow of oxygen in the soil, all critical functions within the plant are shutdown or seriously impaired.

The basic principles of good soil management involve:

- Air Management
- Water Management


(Continued on page 7)

Bacterial Wilt

Xanthomonas campestris

By Peter H. Demoeden and John E. Kaminski
Department of Natural Resource Sciences and Landscape Architecture
University of Maryland at College Park

Bacterial wilt is a disease on the rise in annual bluegrass (*Poa annua*) putting greens. It primarily has been observed in the Mid-Atlantic and Northeastern regions of the U.S. This disease is favored by periods of heavy rainfall followed by cool nights, and warm and sunny days. The disease often appears in May, but may persist throughout the summer. In situations where the disease is chronically severe, greens composed primarily of annual bluegrass may have to be renovated. Bacterial wilt is caused by the bacteria *Xanthomonas campestris*, and is the only known bacterial disease of turfgrass.

Symptoms

Bacteria have no means of penetrating cells so they must enter plants through natural openings such as stomates and hydathodes, or through wounds. Once inside plants they can plug vascular tissues. Once the xylem elements of a large number of roots become plugged with masses of bacterial cells, plants begin to wilt. This blockage prevents the upward movement of water and nutrients and plants die primarily due to lack of sufficient water. Initial symptoms therefore appear as wilt and individual infected annual bluegrass plants quickly turn reddish-brown or yellow and die in whitish-tan spots about the size of a dime (Figure 1). Collapsed tissue in dead spots often form depressions or pitting and disrupt the playability of the putting surface. When many spots coalesce, large areas can be destroyed in a non-uniform pattern within a few days. When there is coalescence of numerous dead plants, the non-uniform browning can mimic anthracnose (*Colletotrichum graminicola*). Another symptom of bacterial wilt can be seen in annual bluegrass located along the perimeter of infected putting greens. These areas generally are mown less frequently (i.e., clean-up cut) and individual leaves of infected plants often become unusually elongated (Figure 2).

Diagnosis

The disease is extremely difficult to diagnose and the pathogen cannot be seen without the aid of a microscope. Annual bluegrass displaying the aforementioned symptoms should be sent to a turf pathologist for positive identification. In the laboratory, a diagnostician will indubate the sample overnight and look for oozes or streaming of bacterial cells on a microscope slide (Figure 3). Slow oozes from yellow or senescent tissues are common, but rapid streaming of cells from vascular bundles of mostly green leaves is the best indicator of bacterial wilt.

Management

The increased incidence of the disease may be due in part to the trend for very low mowing heights and higher frequency of topdressing and similar cultural practices which tend to injure the turf. Increasing mowing height reduces disease severity dramatically, but also slows the speed and therefore playability of putting



Figure 1. Infected plants die in dime-sized spots and often leave pits or depressions in the putting surface.

Terrapin Tips

- Infected plants die in tan-colored spots the size of a dime.
- Bacteria cells plug the vascular tissues and prevent upward movement of water and nutrients.
- Low mowing heights and injurious cultural practices intensify the disease.
- Products containing copper may provide short-term control

(Continued on page 6)



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greens. Mowing turf when leaves are dry may slow the progression of the disease. Should the disease be restricted to one or a few greens, a "dedicated mower" should be used. It is best to use a light-weight, walk-behind greens mower. The dedicated mower should be disinfested with a 10% Clorox solution or similar disinfectant after use, and the mower should not be used on disease-free greens. Topdressing should be avoided when the disease is active. This is because sand abrades and wounds tissue, creating ideal entry points for the bacteria. Similarly, it is important to avoid core aeration, vertical cutting and other abrasive practices. Products containing copper such as copper hydroxide (Kocide or Junction) may provide good, short-term control. Anecdotal observations suggest that rates in the range of one-half to two ounces per 1,000 feet are relatively safe. Apply Kocide/Junction in at least five gallons of water. Tank-mixing Kocide with chelated iron or slow release, liquid forms of nitrogen may mask discoloration.



Figure 2. Elongated plants in unmown areas often is an indicator of bacterial wilt.

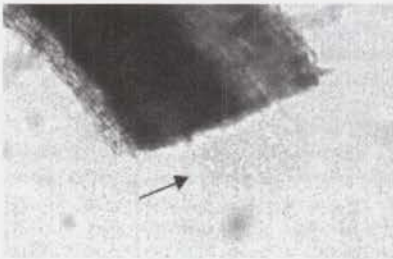


Figure 3. Bacteria ooze or stream out of infected leaves and roots.

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A message from your golf course superintendent and GCSAA



(Continued from page 4)

- Biological Management
- Nutrient Management

Effective soil oxidation helps break down long chained ligneous organic matter (a.k.a. thatch). In a golf green, tee, or fairway, aerification not only physically disturbs thatch, but also helps to stimulate the bacteria and fungi that will use this carbonaceous material as an energy source.

One of the most difficult parts of scheduling an aerification program is to determine how much aerification is adequate to manage the organic layer in the upper portion of the profile. There is no accepted rule of thumb for what percentage of surface area should be impacted each year, but it is safe to say there are more greens that have been aerified too little than those that have been done too much. However, the USGA has found that courses with successful, mature greens have been on a core aerification program where 15 to 20 percent of the surface has been impacted each year. If aerification has been neglected, a more aggressive program may be warranted.

Tine Size Diameter (inches)	Spacing (inches)	Number of Holes per sq. ft.	% Surface Area Impacted	# of Aerations Needed to Reach 20% of Surface Area Impacted
1/4	1 x 2	72	2.45%	8.1
1/4	2 x 2	36	1.23%	16.3
3/8	1 x 2	72	5.52%	3.6
3/8	2 x 2	36	2.76%	7.2
1/2	1 x 2	72	9.82%	2.0
1/2	2 x 2	36	4.91%	4.1
5/8	1 x 2	72	15.34%	1.3
5/8	2 x 2	36	7.67%	2.6



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POCONO ROUNDUP

NEWS AND VIEWS FROM THE POCONO
TURFGRASS ASSOCIATION

Congratulations!



Congratulations to **Jason Witcraft** and his wife, Laura, on the birth of their daughter, Alicia May. Alicia was born on Thursday, August 22.

Condolences

Our deepest sympathy goes out to the family of Edward S. Kern who recently passed away. Ed was a long time member of the PTGA, and the former owner/developer of Rolling Greens Executive Golf Course.

Thank you!

Dear President Huelster and staff:

We would like to thank Walter Whitney for his generous donation to our scholarship fund. Following is his letter, in part:

....Enclosed is my donation to the scholarship fund. This is a very good fund, as it helps a student with expenses, which are endless in college.

I hope to attend at least one meeting before going off to Florida for the winter. I always enjoy the agenda.

Sincerely,

Walter Whitney
(retired consultant)



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