



The Green Sheet

Central Pennsylvania Golf Course Superintendents Association

Volume 23 Issue 4

Founded ~ April 11, 1939

July 2016



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Be on the Lookout for Heat Stress Problems on Bentgrass/Annual Bluegrass Putting Greens

Pete Landschoot, Prof. Turfgrass Science, Penn State University

Because of the extreme temperatures forecast for late July, golf course managers in Pennsylvania should be on the lookout for problems associated with heat stressed putting greens. Heat stress can cause major turf loss during the summer months unless steps are taken to mitigate build-up of high temperatures in soil and turf canopies. Four types of heat stress problems that can occur in putting greens are: supraoptimal temperature stress, scald, wet wilt, and heat-related complexes.



Heat stress-related mechanical damage on putting green.

Supraoptimal temperature stress refers to detrimental effects on turf due to temperatures above the optimum for growth and other essential plant functions. When cool-season turfgrasses are exposed to high temperatures (typically above 86°F) the rate of photosynthesis declines, whereas the respiration rate of roots and shoots increases. If high temperatures persist, carbohydrates are depleted faster than they are produced, resulting in reduced stress tolerance and poor recuperative potential. The depletion of carbohydrate reserves is more evident in roots than in the shoots, and this is expressed as a decrease in root growth.

Another negative aspect of supraoptimal temperature stress is the production of free radicals in plant cells (superoxide, hydrogen peroxide, hydroxyl free radical, and others). Free radicals are oxidizing compounds that can damage cell membranes. Although plants have the ability to counteract the effects of free radicals through naturally occurring antioxidant enzymes, activity of these enzymes decreases during prolonged heat stress.

On hot, dry days, cool-season turfgrasses can undergo a metabolic process called photorespiration. This occurs when plants close their stomata to prevent excess water loss, thereby curtail-

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Remembering Our Friend, Jim MacLaren

On Sunday, June 5, 2016, Jim MacLaren passed away at the age of 73. Jim was born on February 27, 1943, and had been currently residing in Treasure Island, Florida, after his retirement.

Jim was a long time member of the Central Pennsylvania Golf Course Superintendents Association having joined in 1968. He was a President of Central Penn in 1980 and remained active over the years with association activities. Jim was the 1st recipient of the CPGCSA's David Rafferty Distinguished Service Award. He was also instrumental in the development/organization of the PAGCS (formerly the Allied Association), Pocono Turfgrass Association, and PTC.

Jim's employment in the Turf field included various Superintendent and Sales positions. After he retired, he was still only a phone call away to answer questions from past customers and friends.

In classic Jim MacLaren fashion, it was his adamant wish to not have any formal services upon his death.



When I think of Jim I have many fond memories. My first meeting with Jim was at a Central Penn meeting when he walked up to me and said something very sarcastic and then just walked away. I asked the guys I was with, who the smart ass was and they said Jim MacLaren from Lebanon Country Club. Following our first encounter we got to be good friends and spent many early mornings on the phone waiting for daylight so we could look at our courses and plan our day.

One of my wildest stories of Jim happened when we went to Atlanta to the 1983 GCSAA meeting. A group of us were going to meet at a restaurant on the outskirts of Atlanta. The first taxi left as ours pulled up. Bertie, Gloria and I got into the back seat and Jim got in the front and said to the driver " \$50.00 if you beat the other taxi to the restaurant". In no time at all we were going 80+ mph down the city streets. Our wives were hanging on to anything they could grab and we off to the races! We drove for about 15 minutes at high speeds when our driver announced that he was lost. After he found the way to the restaurant we arrived right behind the other taxi. Jim didn't give him the \$50.00 but he did give Bertie and me a ride we never forgot.

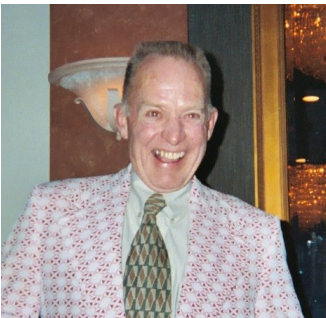


Kenny and Jim

This was Jim, always a fun to be around. A good and true friend.

Ken Dietrich

That smile and shit eating grin will never be forgotten. Jim was a very funny man with a great outlook on life. He never took himself too seriously but always would be there as a professional colleague delivering product at 5 in the morning so we could spray or offering an opinion on his vast knowledge of turf and experience. But most importantly he was always there as a friend and to put a smile on my face. I will always remember his days at Lebanon CC, Atlantic City CC, or pulling up to my shop in his pimped out red pickup truck pedaling turf product always with that grin from ear to ear.



Thank you Mr. MacLaren for that smile and the memories, you will be dearly missed!

John Chassard

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Jim MacLaren is remembered by many of us as a hard working, intelligent, tell it as it is guy, with a great “dry” sense of humor. I would like to speak of another admirable character trait that many of us have been a recipient – his generous nature. Barb and I have spend the last three Februarys in Treasure Island, Florida. When we learned last year that Jim was a year round resident of Treasure Island we made contact with Jim and his friend Betty Altero. An example of Jim's generous nature was his desire to pick up the check every time we dined together. After this occurred several times, I started to feel very uncomfortable concerning his insistence to take care of the bill. I unsuccessfully tried to get the check many times, but Jim was very quick at hand to get the check. I was frustrated ! However, a situation developed at a restaurant where Jim and Betty were frequent customers. So frequent that when Jim passed by the cashier on his way to be seated he just handed his credit card to the cashier. I saw this happening as I walked behind Jim. At last ! A chance for Barb and I to pay for the meal. I quickly and discretely gave my credit card to the cashier and silently pointed to myself to indicate I wanted to be charged for the meal. It worked. On discovering he didn't get charged for the meal his comment was “you know we are not a poverty case”. At last we got to show our appreciation for his giving nature. We like many others of the turf industry who have visited Jim in Florida have fond memories of Jim and his generous nature.



Terry Wueschinski



I have so many that I could probably write a book. Jim took me under his wing when I came to Lebanon and our fast friendship was born. He was a father figure, big brother, best friend, fellow superintendent, confidant and partner in crime all wrapped in one. I owe him a great deal of thanks for the success I have had in business. He taught me a lot and kept me from falling on my face more then once. He will be missed by so many. If you never got to know him, the stories just won't do it true justice but will give you a little hint to want it was like to be in his company!



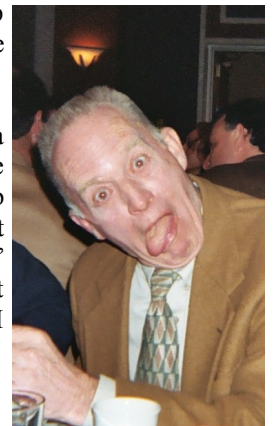
Jim and Shaun Barry



The best story that is not totally off the wall involves our trip to Vegas. As a “newbie” to the Central Penn, I “volunteered” to book all of the rooms for the Convention. With Jim’s help we reserved rooms at the beautiful Landmark Hotel, once owned by Howard Hughes during the Vegas heyday. I was going to show all of my new friends how great I was at helping and impress them with my fantastic rooms and beautiful views of the strip! Long story short the place was a dump (and was blown up right after we left – hence renamed the Landmine.))



Most of us had rooms that were dirty, smelly and had views of a dumpster. Greg Borzok and I spent many moments wondering if the elevator would ever make it up – or down to our floor. Great job impressing my fellow supers and their wivesexcept for Jim He invited us down to his “garden suite” every day! King sized beds, sitting room, with a full patio and wet bar that walked out into the pool. Somehow to this day I still think I was set up but will never know!



Rest in Peace buddy – I will miss you!

Jim Jones

Membership News

The following individuals have applied for membership into our association. If there are no written objections within the next seven days, they will be accepted into CPGCSA at the next meeting.

Adam Malasavage.....Class C
Assistant Superintendent, Bent Creek Country Club

John Wiblishauser.....Class AF
Technical Rep, Grigg Brothers Specialty Fertilizers

We would like to welcome the following individuals into our association

Ray Dietrich.....Class FM
Superintendent, Little Creek Golf Course

Chris Grasmick.....Class AF
Director of Sales, Golf Cart Services

Joshua Wakefield.....Class FM
Superintendent, Clubs at Colonial Ridge

Jeremy Weand.....Class AF
Territory Sales Manager, Lawn and Golf Supply Co.

In Memory

Mr. Richard A. "Dick" Kline, Sr., 80, of 10333 Fish and Game Road, Waynesboro, PA, passed away Thursday, June 30, 2016 in ManorCare Health Services, Chambersburg, PA.

Born June 18, 1936 in Waynesboro, he was the son of the late Delvin M. and Pansy E. (Bloom) Kline. Mr. Kline attended Washington Township schools. He was employed by Waynesboro Country Club, retiring in 2002 after 52 years of service.

Mr. Kline was a life member of Waynesboro Country Club and United States Golf Course Association. Dick has been a member of CPGCSA since 1969.

Our sympathies to the family of George Skawski on the passing of his father on June 22.

If you know of anyone who is interested in membership into the association, please have them contact Wanda at 717-279-0368.

Membership information is also available on the Central Penn website at:
www.cpgcsa.org

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Invite from Pocono Turfgrass Association

The PTGA's August meeting, which will be held at Glenmaura National Golf Club, will be held in Jim MacLaren's memory. Glenmaura was one of Jim's favorite golf courses.

Contributions can be made to the Pocono Turfgrass Association Scholarship Fund in Jim's name. We feel it is a final and fitting way of giving back to the people and industry Jim loved. We will announce the amount collected for the scholarship at the August meeting.

Checks can be made out to the Pocono Turfgrass Association, and mailed c/o Melinda Wisnosky, 309 Terrace Avenue, Harding, PA 18643.

Please note on the check that it is for the scholarship in Jim's memory.

Information on meeting registration will be forwarded in the near future.



Bill Mast

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Royal Manchester Golf Links Golf Tournament Results

June 13, 2016

- 1st - Scott Fischer/Steve Ehrhart
 Curt King/ Bill Brooks
- 4th - Chris Martin/ Wes Rowe
 Jason Prystup/ Matt Turner
- 7th - Jesse Hartman/ Randy Lauver
 Jim Byrne/ Josh Wakefield
- Closest to the pin #2 - Matt Turner
- Closest to the pin #15 - Eddie Scheck
- Long Drive - Lance Ernst

Thanks to Jesse Hartman and his staff at Royal Manchester Golf Links for a spectacular day of golf and camaraderie.

Participate in Dollar Spot Research at Penn State

Dollar spot is probably the most important or chronic disease of turfgrass on golf courses. As a turfgrass manager you understand how detrimental dollar spot can be both to the turf and to your budget. Dr. Kaminski's lab at Penn State is currently conducting research experiments focusing on pertinent issues relating to the turfgrass disease dollar spot and the causal agent. This new project, headed by graduate student Cameron Stephens, will focus on fungicide resistance management and seasonal variation in disease severity.

During his travels and discussions with turf managers, Dr. Kaminski has found that many superintendents are having trouble managing the disease at different times of the year. Previous research has shown that early season fungicide applications can help to reduce *Sclerotinia homeocarpa* populations and therefore delay the onset of symptoms. The development of severe dollar spot epidemics during the autumn months, however, remains somewhat of a mystery. The goal of the research is to better understand the influence of chemical application on the development of resistance as well as on the seasonal variation in dollar spot populations throughout the year.

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Heat Stress Problems ...continued from page 1

ing evapotranspiration (cooling of the plant) and carbon dioxide (CO₂) intake. CO₂ fixation continues after stomata close, causing CO₂ levels to decline inside the leaf. As CO₂ levels decline, oxygen (O₂) concentrations become elevated and react with a compound called RUBP to form a toxic substance called phosphoglycolate. Although the plant detoxifies phosphoglycolate through a series of chemical reactions, it uses valuable energy in the process, and can lose up to 25% of the carbon that was fixed during photosynthesis.

On hot, sunny afternoons, temperatures at the soil surface will often be a few degrees higher than air temperatures. When air temperatures climb above 90°F, soil temperatures in upper 0.5 inch of soil can exceed 100°F. A result of high soil temperatures is poor root growth. Optimum temperatures for root growth of cool-season grasses is around 50-65°F. When soil temperatures reach 80°F for extended periods, root initiation ceases. Roots stop growth and begin to lose ability to function properly when temperatures are greater than 86°F. Root hairs start to die and roots turn brown and fail to function properly when soil temperatures are greater than 95°F.

Scald is a phenomenon that occurs when standing water on greens (wet soils) accumulates heat slowly, and retains heat for long periods, especially when canopies are less than 1/8 inch. If water puddles on hot sunny days, turf can be killed within a few hours. When managers are faced with standing water on putting greens on hot days, they should attempt to remove the water with squeegees or some other tool.

Wet wilt is a condition that occurs when temperatures are high and when there is adequate or excessive soil moisture and low oxygen. In this case, roots cannot absorb water fast enough to meet transpirational (cooling) needs of turf. Wet wilt is likely to occur on hot, humid days, in wet soils, and where turf has a shallow root system.

Heat-related complexes are diseases, nematodes, drought, or traffic combined with high temperatures that result in turf thinning, root decline, or major turf loss. This type of heat stress is probably the most common cause of turf loss during periods of hot, humid weather during the summer, and requires preventative measures such as fungicide applications, traffic control, and/or cooling of soil and turf canopies. Vigilance and knowledge of disease signs and symptoms is important during extended periods of high temperatures.

Practices used to cool putting green turf

Common practices used to cool turf on golf courses include use of fans, syringing, and venting. Fans are often used around putting greens to increase air circulation and cool turf and soil. Research performed at Auburn University showed that fans can have a dramatic cooling effect on turf canopy and soil temperatures. These studies showed that in some cases, temperatures were reduced by as much as 20°F during the hottest part of the day when large, 5-7 horsepower fans were employed.

Syringing is the process of cooling turf by applying a film of cool water from a nozzle attached to a hose. The key to successful syringing is to only apply enough water to wet the turf canopy, and not add water to the soil. As the water on the leaf surface evaporates, plant temperatures are reduced. When syringing, the applicator has to move quickly over the putting surface and move the nozzle back and forth as he or she walks. Keep in mind that the benefits of syringing are short-lived, so multiple syringing cycles on greens during hot weather are usually necessary.

Venting is another maintenance process used to cool turf. Venting is accomplished by punching small holes in the turf with solid needle tines fixed to an aerator. Needle tines are very narrow, and cause little disruption of the turf surface. When done in early morning or evening, the many small holes in the putting surface allow hot air to escape and cool air to diffuse into the soil.

Practices to avoid on putting green turf during heat stress periods

Avoid abrasive management practices such as topdressing, brushing, grooming, etc. when temperatures are expected to approach 90°F or above. When mowing in extreme heat, don't make sharp turns on collars (or use mats to turn on), and consider making clean-up passes around the periphery of greens less frequently. Try to curtail as much cart traffic as possible on sensitive areas, such as approaches and annual bluegrass fairways. Even areas of heavy foot traffic should be monitored and rerouted if necessary.



Large fans strategically placed around putting greens can significantly cool turf canopies and reduce the likelihood of heat-stress problems.



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Golf Course Notification

The Mid-Atlantic region encompassing PA, MD, DE, VA, and WV is experiencing extremely hot weather conditions, with above-average temperatures over the last several weeks. There looks to be no relief in the near future, and golf courses should take caution to preserve turfgrass surfaces by utilizing conservative maintenance practices. Such practices include:

- raising mowing heights
- employing hand watering (syringing)
- reducing mowing frequency
- using fans to encourage air movement
- soil venting (needle tine aeration) where possible
- maintaining diligence with fungicide application programs

With relentless air and soil temperatures remaining high, turfgrass plants become more susceptible to stresses that can kill turfgrass stands and damage the playability of putting surfaces. Likewise, turfgrass roots are bound to shrink, debilitating the plants' ability to fight off stresses, uptake water, and simply survive. Increasing mowing heights helps salvage root mass as much as possible. Furthermore, reducing mowing frequency allows plants to take a "break," and keeps them stronger for fighting extreme conditions.

Air movement is essential during such periods, both above the surface and below. Increasing air movement with fans, and air exchange through soil venting, are best practices to help the plants stay cool, as well as keep roots as healthy as possible.

While we want to provide playing conditions that are the best for our golfing community, please exhibit patience and realistic expectations with course conditions. Golf Superintendents cannot control mother nature, but they do have the ability to adjust programs accordingly. Sometimes doing less (giving the grass "a break") is doing more when encountering such extreme mid-summer weather.

Sincerely,

A handwritten signature in black ink that reads "Chase Rogan".

Chase Rogan

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**2016 CPGCSA
Meeting Locations**

September 17
Penn State Football Game

October 3
West Shore Country Club

Mark Your Calendar.....



**Penn State
Turf and Ornamentals
Field Days
will be held from
August 10 -11, 2016**



The Green Sheet

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