



# CHIPS & PUTTS

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1936

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POCONO TURFGRASS ASSOCIATION

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*Let it  
Snow...*

## Did You Know?

A square yard of well-maintained golf course turf contains an average of 300 earthworms.

The average number of steps on a putting green is 56. That means an 18 hole golf course averaging 200 round a day withstands nearly 2.5 million spike marks a day and 72.5 million a month.



Despite the extreme cold temperatures, the **Second Annual S.N.O.W. Meeting** at Elk Mountain Ski Resort was well attended. Thirty skiers enjoyed the perfectly groomed slopes. Those in attendance appreciated the warm hospitality of the halfway house. Frequent stops were the key for the day. Just getting to the mountain proved to be an adventure for a great many of the travelers. Route 380 North had remnants of cars and trucks and those travelers who would have to delay their plans to wait for a tow truck.

As luck would have it, on January 24 the same day as our Superintendents Need Other Weather meeting, a few of the local ski shops held a demonstration day. A few of the superintendents took advantage of the demo day and got to try what is new and advanced in skiing technology. This activity was nothing new for our commercial people. During the growing season, superintendents are always looking for a good demo day, week, or as long as we can keep the new equipment at our courses.

Numerous friends and family members attended this outing. Andy Jubinski thought it was a great idea to bring his club's Controller to the outing. Ray commented that it is great that turf conversation and camaraderie can be held even in a winter freeze. He was very impressed. This proves that even in the lowest temperature and deepest snow, grass is always on our minds.

These are two of the many photos that were taken on our S.N.O.W. day. One of these is from the top of the mountain. This sight was set up by John Vojick, who was late getting to the top with the camera. This sent the crowd into a freezing frenzy, and some decided to escape to lower altitudes and a warm building. Those who stayed are shown here. How many can you recognize? The answer to "Who are they?" will be in the next issue of Chips and Putts. The photographer for the Top of the Slope Gang was "Mother Goose".

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## President's Message.....

Hopefully, most of you had a rare opportunity over the past few weeks to actually get a glimpse of what lies beneath the everlasting blanket of snow....TURFGRASS! For what it is worth, it was a great experience, even if it was very short-lived.

It has been one of the "long winters" that we all had been hoping for, early and frequent snowfall to keep play off the course and replenish all our watersheds. "We need a long winter to recharge ourselves and our courses after a very long and difficult summer."

However, this "long winter" has gone on long enough. The snow-pack (I can't believe I am saying snow-pack) has limited many of us from getting our winter projects completed, or for that matter, started! Well...spring is not that far away. Is it? Let's hope.

The PTGA Board of Directors has met a few times over the past few months and has really put together a strong meeting schedule at some great golf courses. There will be some very good speakers and topics at these meetings. We hope to see many of you in attendance this year.

We will continue to encourage all of you to get involved with helping to keep the PTGA growing and getting stronger. As always, if you would like to help our organization, please contact any of the Board of Directors or our Executive Secretary to express your interest.

See you all at the meetings!

*Ron Garrison, CGCS*

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## From the Editor's Desk.....

I took time from plowing and shoveling to write this message. All this snow is going to make spring all the more enjoyable. I like the snow cover, but it's getting a little out of hand.

Anyway, on a positive note, this year's monthly meeting schedule is coming together nicely so I hope to see you all at a meeting. Finally, I'd like to mention that we could always use help with the newsletter, so if anyone has any ideas for topics to write about, let us know.

*Eric Reed*



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## Management Practices Associated with Anthracnose and Abiotic Stress on Golf Course Turf

By: Bruce B. Clarke and James A. Murphy Rutgers Cooperative Extension

Anthracnose is a destructive disease of weakened or senescent turf. The disease occurs throughout the world on almost all turf grass species but is particularly severe on annual bluegrass (*Poa annua* L.) and creeping bentgrass (*Agrostis stolonifera* L.). The causal agent, *Colletotrichum graminicola* (Ces.) G. W. Wils., spends most of its time as a saprophyte in the thatch or in infested plant material. However, when environmental conditions are conducive to infection (i.e., high humidity or extended periods of leaf wetness) and the plants are under stress, the fungus may become pathogenic and infect leaf, stem, or root tissue. The disease can occur almost any time of year but is most common between April and September in the Northeast and Mid-Atlantic States. Although close-cut greens are most frequently affected, anthracnose can occur on turf maintained at any mowing height.

### Symptoms and Signs

Anthracnose first appears as small patches of yellow to reddish-brown turf, 1 to 2 inches in diameter. As the disease progresses, large irregularly shaped areas may develop on infected greens, tees, or fairways. On individual plants, the pathogen may first infect older or senescing leaves causing yellow leaf lesions. When plants are weakened by mechanical or environmental stress, the pathogen may also attack stems and leaf sheaths resulting in a "basal stem rot". Lesions on the stems and leaf sheaths are at first water-soaked, but quickly turn black as the tissue is destroyed. At this point, the main shoot may be easily pulled from the infected crown and the entire plant may die. Upon close examination with a magnifying glass or 10 x hand lens, affected foliage and stems are often covered with small, black reproductive structures called acervuli.

Acervuli first appear as small black protrusions just underneath the epidermis. Once mature, however, these structures produce long black spines (setae) that are frequently used as a diagnostic feature for anthracnose. Each acervulus contains dozens of one-celled, crescent-shaped, asexual spores called conidia. It is the conidia that are moved by wind, water, or other mechanical means to uninfected turf and cause infection.

### Recent Epidemics

During the past few years, we have seen an increase in the incidence and severity of anthracnose on golf courses throughout the east coast and mid-western states. In many cases, epidemics have been so severe that fungicides were unable to effectively control the disease when used at labeled rates or at recommended intervals of application. This often has resulted in extensive damage and major disruptions in play, particularly on greens. As a result, many superintendents have begun to question why anthracnose has become so difficult to control. To answer this question, we consulted with other agronomists and pathologists from the affected regions. From these discussions, it became apparent that certain management practices commonly employed on golf courses could enhance abiotic stress and thus predispose turf to anthracnose. Although it is doubtful that any particular factor is responsible for the recent increase of anthracnose in the United States, it is likely that various combinations of factors may enhance the severity of this disease and make it more difficult to control.

### Factors Contributing to Abiotic Stress and/or Anthracnose

#### Plant Stress

Even though *C. graminicola* can attack both annual bluegrass and bentgrass turf, anthracnose is more often a serious problem on the former species. Annual bluegrass is at best a weak perennial that is known for its prolific production of seed heads, particularly between late-April and early-June. While seed heads are unsightly and may adversely affect the playability of a green, they are also a sink for carbohydrates (sugars), and thus often deplete the carbohydrate reserves of the plant by early summer. If environmental conditions are also stressful at this time (e.g., hot, humid weather), then annual bluegrass may be particularly susceptible to anthracnose.

#### Fertility

Of the 17 essential nutrients required for plant growth,

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(Continued from page 3)

nitrogen is often the element that has the greatest impact on plant vigor. Over the past twenty years, there has been a strong trend towards reducing the amount of nitrogen applied to golf course greens, tees, and fairways. In some cases, this has resulted in turf that is deficient in nitrogen at certain times during the growing season.

The practice of "spoon feeding" turf with a 0.1 to 0.125 lb N/1000 sq ft, when plants are of low vigor, may not be sufficient to maintain a healthy, disease-free playing surface. Moreover, deficiencies in phosphorous or potassium may also predispose turf to anthracnose. Some superintendents have also abandoned the practice of applying moderate rates (e.g., 314 to 1-1/2 lb N/1000 sq ft) of a slow release nitrogen fertilizer on greens in the fall or spring, thus further reducing the supply of this important nutrient. On fairways, clippings removal has become a common practice. However, if fertility levels are not adjusted to compensate for the nutrients removed, then nutrient deficiencies may develop. Clipping removal can remove 25 to 60% of the applied nitrogen per season.

### Irrigation

Drought stress appears to predispose turf to anthracnose. Not only can low soil moisture reduce plant vigor, thus weakening the plant's natural defenses against disease, but *C. graminicola* can readily colonize weakened turf: The tendency to maintain dry turf and soil to improve playability and to enhance the competitiveness of bentgrass may actually stimulate disease development on annual bluegrass. Wilt stress,

particularly from mid-day to late afternoon, is something that should be avoided. Wilt at this time will exacerbate damage induced by high temperature stress. Tree root competition is also a factor that has been associated with decreased turf vigor and potentially enhancing anthracnose.

### Mowing

Low mowing height has been reported to increase many turfgrass diseases (e.g., summer patch, leaf spot, bentgrass dead spot, etc.). Many of the superintendents that have had severe outbreaks of anthracnose over the past few years have been maintaining greens at or below 118 inch. Where annual bluegrass is a major component of the putting surface, low mowing can deplete the carbohydrate reserves of this species often already weakened by environmental stress.

Mowing frequency may also affect anthracnose. The increased wear caused by double and triple cutting, particularly at a very low cutting height, can result in greater wounding and may potentially enhance the incidence of stress related diseases. Note that double cutting at a higher cutting height is preferable to mowing at a lower height to achieve greater putting speed. Several of the agronomists questioned also felt that the use of grooved front rollers increases wounding, compared to smooth rollers. The impact of grooved rollers on anthracnose, however, is currently unknown.



## Pesticides

After reviewing the scientific literature, it is apparent that few good fungicide studies have been conducted for the control of anthracnose. This is partially due to the inability of researchers (until recently) to consistently reproduce the disease artificially in field trials where uniformity of infection is required to accurately assess fungicide efficacy. Similarly, studies conducted on golf courses naturally infested with *C. graminicola* have also yielded limited information, often because of the simultaneous occurrence of other turfgrass diseases. As a result, only six or seven reliable studies have been reported over the past 15 years. From this information, it would appear that only four fungicide classes or groups can effectively suppress anthracnose.

Information pertaining to the influence of plant growth regulators and herbicides on anthracnose is also very limited. However, it would appear from a study conducted in Kentucky that products such as Primo or Dimension may slightly increase this disease. Clearly, more research is required before more definitive conclusions can be drawn.

See next months issue on: **Addressing the Problem**

(Continued from page 1)

The results of the day were the best. No accidents and No injuries. Steve "Crash" Chirip returned again this season for some perfect runs and departed early to prepare for a weekend with the family. Since cell phone service is almost none existent at Elk Mountain, the day is an escape from reality. A great time was had by all. A special thanks goes out to all the vendors who supported this endeavor: Andre and Son, Grassroots, Philadelphia Turf, Plant Food Co., Syngenta, and United Horticultural Supply. Please support all our suppliers as they enjoy lending their support to us. Remember to line up equipment demos early.

I would like to thank the Social Committee Members, Darrin Larkin, Superintendent of Panorama Golf Course, John Vojick of Andre and Son, and Steve Chirip of Plant Food for all their help.



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## The Reason for Drought the Last Few Years

**From:** Karl Danneberger, The Ohio State University

In the most recent issue of *Science* Drs. Hoerling and Kumar with the National Oceanic and Atmospheric Administration (NOAA) published a research article on the reason for drought from 1998-2002 (Hoerling, M. and A. Kumar. 2003. The perfect ocean for drought. *Science* 299:691-694.) The droughts that occurred during 1998 through 2002 and spanned the United States, southern Europe, and Southwest Asia were linked to cold sea surface temperatures in the eastern tropical Pacific and warm sea surface temperatures in western tropical Pacific and Indian Oceans. These two phenomena worked together to produce widespread drying through the mid-latitude. The climate changes that occurred starting in 1998 changed what had been the wettest decade since the 1890's. For more information you can go to [NOAA](http://NOAA).



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## A Good Old-Fashioned Winter

By Stanley J. Zontek, Director

It's hard to believe that as little as five months ago this region of the country was suffering through one of the worst droughts in history, along with well above average temperatures. It was hot and dry. Now, it's cold and wet. Who says superintendents' prayers are never answered. All this goes to show is that this region of the country seems to be in a period of weather extremes.

In another four short months a new U.S. Open Champion will be crowned, crabgrass should be growing well, and goosegrass germination will be following closely behind. Begin planning now for next season. The following are a few suggestions:

1. **Soil Tests.** If you haven't taken soil tests for a few years, take them this spring.
2. **Water Tests.** Now is a good time to run a winter water test from your lakes, wells, stream or any other water source (except city water). The winter is a good time to establish baseline numbers on water purity when the water should be at its purest. The only exception may be sodium levels from runoff due to salt treatment of roads. By running a water test now and another test in mid-summer you will have a good idea of the ranges of water quality used to irrigate your golf course.
3. **Management Program.** It always is a good idea at this time of the year to begin marking on the calendar when you think you may need to make that first application of a preemerge herbicide, that spring application of an insecticide for surface or root-feeding insects, when various preventative fungicide sprays may need to be applied, etc. Investing in a large wall calendar is an excellent management tool to keep things organized.

This calendar can double as a golf calendar. By now the Golf Committee should be arranging their spring and summer events so you will know when not to aerate, topdress or otherwise interfere with play.

4. **Improve communications.** Now is the time to renew working relationships with other golf course department heads. The golf professional, club manager, general manager and golf course superintendent all need to function as a team. Now is a good time to reach out and say, "I am doing my planning work for the upcoming spring and summer. I would like to have your input on...."

Invoices for the 2003 Greens Section Turf Advisory Service visits have been sent out along with course profile sheets. Please take a few minutes to complete these forms and consider subscribing for the coming year. IT IS THE 50TH ANNIVERSARY YEAR FOR THE GREEN SECTION TURF ADVISORY SERVICE. Celebrate with us this year by taking a visit!

If you have not received an invoice or a course profile sheet, give our office a call at: 610-696-4747. Pat and Marti will be able to answer any administrative questions.

As always, if there are any agronomic questions, you can visit with Stan, Darin and Keith via phone, fax, and e-mail or stop us at any of the conferences we will be attending this winter.

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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# POCONO ROUNDUP

NEWS AND VIEWS FROM THE POCONO TURFGRASS ASSOCIATION



## Congratulations!

Our Congratulations and Best Wishes go out to Carl Swartzlander, Golf Course Superintendent at Frosty Valley C.C. Carl has retired after 40 years in the business.

*Though for the Day  
Character is what you really are—  
Reputation is what others think you are.*

The Simplot Partners/Pocono Turfgrass Winter Educational Meeting will be held on Thursday, March 6, 2003. The location is the Galleria at the Split Rock Lodge. For more information or to put in your reservation, call Jim MacLaren at 570-443-7154. Pesticide Credits will be issued at this meeting.

The Dues Notices have been sent out. The deadline for returning your dues payment is April 1, 2002. Anyone not making the deadline will not have his name in our Membership Directory for 2003. Don't wait. Send in your dues today!

Please make every effort to sell your raffle tickets. We are counting on you to make our major fundraiser a great success!



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