



# CHIPS & PUTTS

OFFICIAL PUBLICATION OF THE  
POCONO TURFGRASS ASSOCIATION

Founded in  
1936

VOL. 10, NO. 1

MARCH 2004

## Attention Vendors:

We are in the midst of updating our "Chips and Putts" Directory. Due to all the changes in Vendor personnel this year, we would like to update this section ASAP.

We are asking for your help!

Please send any contact name/number/vendor category changes to Charlie (fertseedchem@aol.com) or Melinda (mmel500@aol.com) via Email or fax. We would like to have the changes completed by the next issue. Thank you!

Charlie Koennecker



## April Meeting: Woodstone Golf Club Superintendent, Chris Butler

This year's meeting schedule starts off with a bang. Superintendent Chris Butler and the staff at Woodstone were gracious enough to host the April Meeting. Woodstone GC was designed and built all 'in-house'. Construction started in 1998 and was finished for the club opening in May 2000. It is a 7000+yd, par 72, private golf club (we will be playing the 6,381 yd Men's tees). The club has L-93 bentgrass greens and tees, and Southshore bentgrass fairways. The course features 90 bunkers and some beautiful elevation changes. Some recent projects include: Clubhouse expansion/renovation, and additional tee construction/expansion.

Prior to Woodstone, Chris started his career at Woodland Hills GC as summer help. He is a graduate of Delaware Valley College. After school, he became an assistant superintendent at Bedford Golf and Tennis Club in Westchester County, NY. He decided to leave NY after a year and return to his roots in the Lehigh Valley. He became the assistant at Center Valley GC. After 3 years at Center Valley, Chris left to become the Superintendent at Woodstone. He is currently starting his third season at Woodstone. Chris currently lives on the course with his wife Jodi, and daughter Kaitlyn (age 3.5). He is entering this season without an assistant, who left on April 2, and he is currently accepting resumes.

Dr. David Spak from Bayer E.S. will be speaking on Poa Seedhead Suppression. The meeting will be sponsored by Bayer. Please plan on attending!





**Officers & Directors  
2004**

**President's Message.....**

It appears that the 2004 golf season is upon us. I hope everyone accomplished what they had hoped for in the off-season, and I wish you the best for this upcoming season. Your Pocono Board has been hard at work once again to put together what promises to be another enjoyable year. Next month's newsletter will feature our annual State of the Association report.

Best Wishes to Rich Sweeney, who has moved on to Bermuda pastures in Virginia. Rich was the person responsible for this past year's return to a solid educational foundation. He will be missed. Also, welcome to Charlie Koennecker, who has stepped up to the plate as our new newsletter editor. I have assured Charlie that the biggest challenge with the newsletter is sifting through the pile of member contributions every month. We are also excited to have Lee Kozsey on board with the newsletter. Lee has promised to get our newsletter into national title contention.

*Eric Reed*



**From the Editor's Desk.....**

The season is here! The forsythia is in bloom, seedheads are popping, aerators are punching, and meeting notices are arriving. As the season takes shape, keep in mind, the past two seasons have seen the extremes. Super dry, then super wet. As we continue to ride the roller coaster of the weather cycles, keep in mind there is a mid point somewhere. Let's hope this season is just that. We could certainly use a 'normal' season. The golf business has seen the extremes and it is time for a return to normalcy! Returning to normal depends on how you define normal. For most, it is longer hours, lower budgets, less resources and more government intervention. Adjusting to these changes is paramount for success in any business. By getting involved with YOUR association, you can make these adjustments easier. Your association is currently helping to fund turfgrass research, and addressing statewide water issues, among other things. These projects help you, the superintendent, do a better job. We will have more on the state of your Association in the next issue. For now, let's hope for good weather, good health, and a 'normal' season ahead. See you at Woodstone!

*Charlie Koennecker*



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## How to Suppress Seedheads on Annual Bluegrass Putting Greens

By: *J.A. Berger, T.L. Watschke, M.D. Soika of Penn State University*

To some degree, annual bluegrass (*Poa annua*) is present on most putting greens in the Mid-Atlantic. In fact, annual bluegrass can be the predominant species.

Although botanically, annual bluegrass is a winter annual and considered a weed in most turfgrass communities, it is often the desirable species on putting greens. When a turfgrass manager chooses to cultivate annual bluegrass as the dominant population, it's not considered a weed. In fact, if the desired turfgrass is annual bluegrass, then creeping bentgrass (*Agrostis stolonifera*) or any other turfgrass present in the sward should be considered a weed. Some of the highest-quality putting surfaces often consist of more than 80 percent annual bluegrass.

If annual bluegrass is the species of choice, the turfgrass manager must manage the seedhead production of the annual bluegrass because it can adversely affect the playability of the putting surface. In addition, when annual bluegrass produces a seedhead, carbohydrates are diverted to the production of that seedhead at the expense of growth in other areas of the plant. This diversion of carbohydrates is evident shortly after the seed matures and shatters from the plant.

At this time, the annual bluegrass has become weakened and less competitive. As a result, the turfgrass manager must take extra care in the cultivation of the annual bluegrass to provide the necessary quality for the playing surface.

Mechanical cultivation (verticutting) can eliminate some of the seedheads on a putting green after emergence. Groomers or brushes attached to the greens mower will remove some of the seedheads, but these tactics do not prevent the formation of seedheads. When such mechanical means are employed, the equipment must be properly adjusted to avoid damage to the turfgrass plants. This mechanical removal of seedheads will need to continue until the seedhead production ceases.

Plant growth regulator (PGR) use has become more commonplace over the past several years and can be effective for the suppression of annual bluegrass seedheads.

PGR application timing is critical for success. Annual bluegrass will begin to form seedheads in the spring of the year. Therefore, the PGRs must be applied at the "boot" stage of development, which is prior to the seedhead emergence from the turfgrass plant. To determine the seedhead growth stage, a sampling of the annual bluegrass is necessary. Turfgrass managers who have managed

the same site for several years have noticed earlier seedhead emergence on certain greens. Consequently, these greens can be used as an effective monitoring tool.

To determine the "boot" developmental stage, select an annual bluegrass plant from the site and remove the outer leaves. At the "boot" stage, a small stem will be evident growing from the crown of the plant. The annual bluegrass plant may also have a noticeable bulge at the base. This is the seedhead forming and also considered the "boot" stage of development.

If the seedhead is visible (beyond "boot" stage), PGRs cannot suppress that seedhead. The window of timing ("boot" stage) for PGR application can range from one or two days to a week. Therefore, daily monitoring of the development stage is required. If the PGR application is made too early, then the annual bluegrass may produce seedheads later in the spring if a second PGR application is not made.

In most areas of the Mid-Atlantic region, one properly timed PGR application will effectively suppress annual bluegrass seedheads. Multiple PGR applications may be required where the seedhead production persists beyond the limits of a single PGR application.

There are several other factors to consider when using PGRs to suppress annual bluegrass seedheads on putting greens. Some PGRs can be phytotoxic, causing a temporary yellowing or tip burn of the turfgrass. The phytotoxicity, combined with the amount of annual bluegrass seedhead suppression (plus other factors) can affect the overall quality of the putting surface. Quality is subjective. The turfgrass manager must decide the acceptable level of quality required for the putting surface.

Many researchers have documented the effectiveness of Embark Turf and Ornamental Growth Regulator (mefluidide) for the suppression of annual bluegrass seedheads. Embark T/O is a "class C" PGR (Watschke and DiPaola). This class of PGRs are mitotic inhibitors that prevent cell division, which is required for seedhead formation.

When applied alone, Embark T/O can suppress 85 percent or more of the annual bluegrass seedheads. However, there can be some temporary (seven to 10 days) phytotoxicity (turf yellowing) associated with the application. To reduce this temporary phytotoxicity, Embark T/O can be tanked mixed with Ferromec AC Liquid Iron (15-0-0), which contains nitrogen, iron and sulfur. When Ferromec is added, a general trend has been observed in



which seedhead suppression decreases by 10 percent to 15 percent. In the Mid-Atlantic region, a single application of Embark T/O, with or without Ferromec, usually suppresses seedhead formation for the season. However, some turf managers prefer two applications applied about four weeks apart because of the potential for prolonged seedhead development. Normally, seedhead suppression will last for about six weeks from a single application of Embark T/O.

There is inconsistency associated with the effectiveness of Proxy (ethephon) on the suppression of annual bluegrass seedheads. On the West Coast, acceptable seedhead suppression has been documented when Proxy is used but it appears less effective when used on the East Coast. Proxy is a "class E" PGR. This class of PGRs acts hormonally in the plant to prevent growth.

Primo Maxx (trinexapac-ethyl) provides little annual bluegrass seedhead suppression. Primo Maxx is a "class A" PGR. This class of PGRs blocks the production of gibberellic acid late in the production pathway in order to encumber the 1103-elongation of plant cells to reduce plant growth. Seedhead production is primarily driven by cell division, not cell elongation.

However, when Proxy and Primo Maxx are tanked mixed, annual bluegrass seedheads can be suppressed on putting greens.

In a two-year study at Penn State, this PGR combination has consistently provided more than 85-percent suppression of the annual bluegrass seedheads on putting greens with only slight phytotoxicity. In this study, multiple applications of the Proxy/Primo Maxx tank mixed combination, applied three weeks apart, provided greater than

90 percent seedhead suppression. Additionally, when MacroSorb Foliar (an L-amino acid bio-stimulant) was added to the tank mixture, the small amount of phytotoxicity was reduced even further while annual bluegrass seedhead suppression remained constant.

Turfgrass managers who choose to cultivate the annual bluegrass populations on putting greens can use PGRs to suppress the seedheads. This tactic will improve the overall annual bluegrass plant health and provide the golfer with a higher-quality playing surface.

*Borger is a research support technician at Pennsylvania State University. Watschke is a professor of turfgrass science at Penn State and undergraduate coordinator for the turfgrass science major. Soika is a research support technologist in the Department of Plant Pathology at Penn State.*

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## Frequently Asked Questions on Act 220

### Basic Information about Act 220

#### • What is Act 220?

Act 220, also known as the Water Resources Planning Act, was signed into law in December 2002, requires the Department of Environmental Protection (DEP) to update the State Water Plan and conduct a statewide water withdrawal and use registration and reporting program. This water resources inventory will allow the DEP to determine how much water Pennsylvania has, how much is being used, and how much will be used in the future.

#### • Who needs to register under Act 220?

Act 220 states each public water supply agency and each hydropower facility, irrespective of the amount of withdrawal, and each person whose total withdrawal or withdrawal use from one or more points of withdrawal within a watershed operated as a system, either concurrently or sequentially exceeds an average rate of 10,000 gallons per day in a 30-day period, shall register with DEP the source, location and amount of withdrawal or use or both.

#### • Which sources should be registered?

Each source, such as, but not limited to, wells, interconnections to public water supplies, and surface water withdrawals, that use more than 10,000 gallons per day over a 30 day period MUST be registered. If the combined water use of all your sources equals more than 10,000 gallons per day averaged over any thirty-day period, then all of the sources must be counted.

Also, registration is **source** specific **not** necessarily site specific. For example, a school district with 7 schools that all draw from the same 2 sources would only have to register the two sources; a farm operation which several buildings at different sites but all withdrawing from the same well would only have to register one source-the well. If you still have questions, call the Act 220 Hotline at 1-888-457-6653.

#### • What is the purpose of Act 220?

The State Water Plan has not been updated in over 25 years and does not tell us which areas have critical water needs. As a result, we don't know who is running out of water until wells and local supplies dry up.

#### • Are there any fees involved?

There are no fees associated with registering under Act 220.

#### • What are the penalties for not registering under Act 220?

Act 220 provides for enforcement, including enforcement and civil penalties. For further details, refer to Act 220 at <http://www.legis.state.pa.us/WU01/LI/BI/BT/2001/0/HB2302P4697.HTM>

### Pre-Registration

#### • Where can I get pre-registration forms?

Pre-registration forms may be downloaded from the web at:



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[www.dep.state.pa.us](http://www.dep.state.pa.us) Keyword "Water Resources" Or call the Act 220 Hotline at 1-888-457-6653.

**• Why is pre-registration necessary?**

Pre-registration allows the DEP to know if you want to register for Act 220

using the internet or paper forms. If you want to register using paper forms, a summary sheet, instructions, paper forms, and a summary sheet will be mailed out to you soon after the department receives your request. Those who indicate they want to register over the internet will get these materials, as well as a PIN and a password that is necessary when registering online.

**Registration**

**• I have determined my farm, business, etc, has to register under Act 220. Who from this organization should fill out the registration form?**

It is up to each organization to decide who should fill out the registration form. It should be noted that whomever performs this function when filling out the paper form will have to fill out a certification section that verifies the information is true and correct. Similarly, those using the web must agree to a trading partner agreement, which lists the conditions for electronic reporting.

**• What is the deadline for registering?**

Those who have pre-registered must return their registration forms by March 16, 2004. The department will continue to accept registrations after that date. Any applicable water use that begins after February 16, 2004 must be registered within 30 days of the applicant's initiation.

**• How can I get more paper registration forms?**

Download them from the Act 220 Resource Site at [www.dep.state.pa.us](http://www.dep.state.pa.us) Keyword "Water Resources" or Call the Act 220 Hotline at 1-888-457-6653.

**• I am already registered with a river basin commission (DRBC or SRBC) and/or have submitted Annual Water Supply Reports in the past. Do I need to still register under Act 220?**

Yes, even those registered with a river basin commission or those who have submitted an Annual Water Supply Report to the DEP must still register under Act 220.

**• Where can I get more information?**

Contact the Act 220 Hotline at 1-888-457-6653.

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*A message from your golf course superintendent and GCSAA*



## Disease Alert: Unidentified Creeping Bentgrass Disease

Some golf course superintendents in the Eastern United States have been battling an unidentified disease in creeping bentgrass putting greens. The problem has been most prevalent in newly constructed (5 years old and younger) greens. Most cases of this disease have occurred in the Southeast, but some have been observed in the Mid-Atlantic and Northeastern states. Although the disease has been referred to as "summer crown rot", this designation is not official because the pathogen has yet to be identified.

Two golf courses in the Raleigh, N.C., area observed mild symptoms of this disease in the fall and spring during relatively cool weather. One case occurred in November 2003 and another in March 2004.

In samples from these fall and spring cases, a Pythium species was observed causing significant damage to the new root growth. Last fall, we identified the suspected pathogen as *Pythium volutum*. We have not yet identified the isolates collected this spring. Research is ongoing to determine whether this *Pythium* species causes this disease.

Our current theory is that this disease is caused by a *Pythium* species that does most of its damage in the spring and fall when temperatures are cool. Low nitrogen fertility and close mowing seem to induce expression of the symptoms in the spring and fall, but severe symptoms do not appear until summer when heat and drought stresses overwhelm the infected turf. Any other factors that reduce root growth in the fall and spring, or increase the amount of stress on the turf during the summer, will likely increase the severity of this unidentified disease.

If our theory is correct, then spring and fall will probably be the best time to control this disease with fungicides. Superintendents in the Southeast who have had severe cases of this disease should consider initiating a preventive *Pythium* program as soon as possible. Those in the Northeast and Mid-Atlantic who have had this problem can probably wait until creeping bentgrass root growth begins this spring.

We have shown that the following fungicide treatments are effective for curative control of this disease:

- Subdue Maxx (1 fluid ounce/1,000 square feet, not watered in)
- Chipco Signature (4 ounces/1,000 square feet, not watered in)
- Terrazole 35WP (3.25 ounces/1,000 square feet, watered in with 1/8" of irrigation)
- Heritage 50WG + 3336 50WP (0.4 + 8 ounces/1,000 square feet, watered in with 1/8 inch)

Equivalent products containing the same active ingredients will perform similarly. Of these treatments, the true *Pythium* fungicides have proven most effective curatively and will probably perform best preventively as well. Because Heritage + 3336 was only moderately effective on a curative basis, this treatment should probably not be used for preventive control. More research is needed to identify the most effective rates and intervals for preventive control of this disease.

We have found that the following program is most effective after symptoms of the disease appear:

1. Heritage 50WG + 3336 50WP (0.4 + 8 ounces/1,000 square feet, watered in with 1/8 inch)
2. Terrazole 35WP (3.25 ounces/1,000 square feet, watered in with 1/8 inch)
3. Subdue Maxx + Nitrogen (1 fluid ounce/1,000 square feet + 1/8 pound/1,000 square feet, not watered in)

These treatments are typically applied three to five days apart and have been shown to provide up to three weeks of disease suppression.

**Lane P. Tredway, Ph.D.**  
*Extension Specialist in Turfgrass Pathology*  
 North Carolina State University

This article found on [www.gcsaa.org](http://www.gcsaa.org)



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