



# CHIPS & PUTTS

OFFICIAL PUBLICATION OF THE  
POCONO TURFGRASS ASSOCIATION

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## THE NEW GENERATION OF FUNGICIDES OF MICROBIAL ORIGIN HERITAGE & COMPASS

By now, most golf course superintendents in the U.S. have applied or, at least, heard of the new fungicides, *Heritage & Compass*. What most people may not realize is that *Heritage & Compass* represents a new generation of fungicides whose active ingredients are derived from a microbe. Use of natural products as fungicides, however, is not entirely new in the turfgrass market. Cycloheximide, which was sold under the trade name of Acti-dione, was used in the 1960's and '70's on turf to control dollar spot, leaf spot, and other diseases. Cycloheximide was a by-product in the production of the antibiotic streptomycin. Streptomycin was derived from the bacterium *Streptomyces griseus*. Cycloheximide was expensive to produce and could be phytotoxic to turf, thus its registration was withdrawn in 1981.

Fungicides of microbial origin can be produced by fermentation (i.e., growing large quantities of a desired microbe in an aerated vat) or the antifungal properties of the microbe can be identified and synthesized in the laboratory. Regardless of how the products are produced, they must undergo the same U.S. Environmental Protection Agency registration rigor that is required for all other pesticides.

### HERITAGE (AZOXYSTROBIN) ZENECA

*Heritage* represents a new class of chemistry referred to generically as beta-methoxy-acrylates from ZENECA. The origin of the first identified compound (i.e., strobilurin A) was a fungus from the mushroom family named *Strobilurus tenacellus*. The common chemical name for *Heritage* is azoxystrobin. The strobilurin-based compound was stabilized by adding molecules to the structure to ensure that it was not rapidly broken-down by solar radiation. Because the original compound was

slightly changed in the laboratory, azoxystrobin is best described as a synthesized analog of a natural substance.

*Heritage* can be taken up by roots and moved via the xylem throughout the plant. When sprayed on leaves, it penetrates and moves through the leaf, where some molecules enter the xylem and move upward in the plant from the point of uptake. Because *Heritage* only moves upward from the point of uptake, it is not truly systemic and therefore it is best described as being an acropetal penetrant. The fungicide provides disease control by interfering with respiration of sensitive fungal pathogens. It blocks electron transfer in the cytochrome bc complex and thus it is single site specific. That is, it only blocks one biochemical event, which means that the probability for resistance to occur increases greatly when compared to compounds with multi-site activity.

*Heritage* is remarkably broad spectrum and is one of the few turf fungicides with a diverse target list, which includes both root and foliar pathogens as well as *Pythium* diseases. Its demonstrated target strengths include brown patch (and other *Rhizoctonia* diseases such as yellow patch and zoysia patch), summer patch, take-all patch, anthracnose, red thread, gray leaf spot, and *Helminthosporium* leaf spot. There is not a great deal of evidence, however, that it is strongly effective against snow molds or *Pythium* diseases as it is against the aforementioned diseases. *Heritage's* greatest known

### In this issue.....

- Some Dates to Remember
- Skytop Meeting Notes
- Greenskeeper Diary





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

How about this weather? How about the water bill? Restrictions are here, and I hope we are doing our part in water conservation. We are doing hand watering, both with irrigation and by hauling water to localized hot spots with the sprayer. Wetting agents are helpful to get the water down in the ground with shorter sets with sprinklers to prevent run off. Should you have some helpful hints or ideas, give us a line. We'll be glad to print them.

The GCSAA's 1999 Chapter Delegates meeting will be held September 10-12. We will be sending Ronald Garrison, CGCS, as our representative. Key components of the agenda will be Professional Development, GCSAA candidates presentations for the year 2000 elections, GCSA mission and visions, membership growth strategy, compensation and benefits survey coordination, Food Quality Protection Act, and much more. I'm sure Ron will be bringing back lots of information for all of us.

Speaking of the Food Quality Protection Act, the GCSAA is asking superintendents and others in the golf industry to take action to stop the EPA's unreasonable and unfair implementation of this act. The EPA has begun this safety assessment, but is using "assumptions" and "models of pesticide" instead of real data!

Two important classes of chemicals under the gun right now are Organophosphates (such as Dursban) and Carbamates (Turcam). You may take action by writing, calling, or e-mailing your U.S. Representative in Congress to sign on as a co-sponsor of H.R. 1592. This bill will help save valuable pesticides. Contact Carrie McKeel at 800-472-7878, Ext. 619 or e-mail at [cmmckell@gcsaa.org](mailto:cmmckell@gcsaa.org), if you have any questions or need help in writing your letters.

Great meeting last month. Thanks to Tom Williams and his staff at Skytop. Hope to see everyone soon!

*Jack Bird*

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

As this is being written, we are in a drought emergency. This was announced as we were at Skytop on July 20. That evening and in the next day's news there were thumbnail sketches of what could or couldn't be watered that applied to the general public. To get more specific as to our particular profession, we had to make phone calls among ourselves or access the PA DEP on the Internet. The regulations that were available were written in 1991 with various amendments made along the way. For those of you who availed yourselves to these regulations, I am sure you found it to be the most asinine, convoluted, confusing, complex, puzzling, and perplexing document known to man.

Reading through the document, something jumped out; Syringe means a 15 minute cycle (most people don't do a 15 minute irrigation event), you can syringe only heat sensitive grasses (poa and bent). Who doesn't have poa on the fairways.

The regulations are to be enforced by the local constabulary who we all know can detect the difference between poa, ryegrass, bent and *Digitaria sanguinalis*. We could go on and on, but do we want to? We all want to abide and comply to some sort of restriction, but let's make it realistic.

A suggestion for the future might be to put every golf course on a water meter and when a water restriction is implemented, say for example, the state would say cut your consumption by 20%, then the onus would be on the individual to use the water as he/she sees fit. Maybe the next step would be 40%, etc. This way you could water whatever you wished whenever you wished, but you could prove conservation by meter readings and conserve your own water.

In reality what should happen is a consolidated group of golf course superintendents (Allied Association of G.C. Superintendents which would include the Delaware, Susquehanna, and the Allegheny River Basins) should gather in Harrisburg with the proper authority and hash this situation out once and for all.

**Let's take the lead and be pro-active instead of re-active.**

*Jim MacLaren*



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## 1999 MEETING SITES

August 16, 1999	Pocono Farms C.C. (Clam Bake) Gene Huelster
September 21, 1999 (changed)	Eagle Rock Resort Doug Witcraft
October 19, 1999	Bethlehem Golf Club Tom Wilchak



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Call The GCSAA Foundation for more information at (800) 472-7878 ext. 465.

\*Variety names must match qualified seed list. Mixture tags must carry a M16 or M16M prefix. Turf Seed product Blue Tags are redeemable for \$.50 each, while Penn Pals™ product tags are redeemable for \$1.00. Rebates will be split evenly between the Affiliated Chapter and The GCSAA Foundation. Direct rebate offer to GCSAA Foundation, 1421 Research Park Drive, Lawrence, KS 66049.



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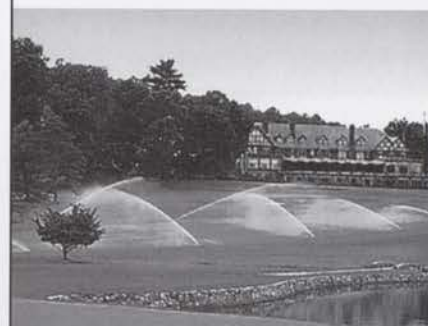


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We would like to acknowledge Turf-Seed, Inc. and Tee-2-Green Corp. for their contributions through this philanthropic program.

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## GOLF WINNERS AT SKYTOP LODGE

### Two Man Captain & Mate



#### First Flight

1st Tony Grieco, CGCS  
John Chassard

2nd Mark Eisele  
Steve Whipple

Closest to the Pin #8 Doug Witcraft  
Longest Drive #6 Ed Zimmerman

#### Second Flight

1st Mike Condor  
Willie McCausland

2nd Jim Carville  
Jeff Siglin

#16 Ryan Batz  
#15 Tony Grieco, CGCS

## THANK YOU TO SKYTOP LODGE

The Pocono Turfgrass Association would like to thank Tom Williams, Golf Course Superintendent; Jeff Siglin, Project Manager; and Ed Mayotte, General Manager; and all those from Skytop Lodge involved in making our day enjoyable. Even with the plethora of projects going on, the course played exceptionally well! The general consensus was, we should return in a couple years (maybe in September) to reap the fruits of their labors and enjoy the vistas of an autumnal day on the plateau of Skytop.

## FINANCIAL CONDITIONS OF OUR ASSOCIATION

From Tony Grieco, CGCS – Association Secretary

Our Association remains in good financial standing. I have spoken in the past of some imbalance of how money is received and spent in our Association. I have worked hard to correct these imbalances and insure a sound financial foundation for our future. Dues continue to be an issue.

Recently, we have been robbing Peter to pay Paul. Paul thinks this is great, but Peter (our bread and butter guy) is really getting mad! To correct this problem, dues must be increased. Whether we do this in small increments annually or chunks every five years or so, is the only question that remains.

Your opinion is important to us, so do not hesitate to let it be known.

Lee A. Kozsey  
Senior Territory Sales Lead

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(Continued from page 1)

weakness is dollar spot. It not only does not control dollar spot, but it can actually enhance this disease. Hence, *Heritage* must be tank-mixed with another fungicide whenever dollar spot is active.

## COMPASS (TRIFLOXYSTROBIN)

**NOVARTIS**

*Compass* is the trade name for the fungicide containing the active ingredient trifloxystrobin, a new strobilurin fungicide from NOVARTIS. *Compass* represents a major advance in harnessing the fungicide power of strobilurin chemistry and brings with it a new dimension in the effective control of turf diseases.

Trifloxystrobin has very favorable human and environmental safety profiles. The very broad and balanced spectrum of activity of trifloxystrobin delivers excellent control of important turfgrass diseases including brown patch, leaf spot, anthracnose, summer patch, pythium, gray leaf spot, and many others. Furthermore, its powerful disease control, combined with excellent safety to turf, will be labeled for all turfgrass species and all application areas.

*Compass* is a mesostemic fungicide with locked-in properties. This new type of activity is characterized by a high affinity of the fungicide to the waxy layers of the plant surface, (translaminar activity) and novel redistribution properties. This unique combination of features brings long-lasting, weather-protected disease control to turf.

Trifloxystrobin is a mesostemic fungicide that delivers effective disease control. The locked-in behavior of *Compass* on plant surfaces is clearly different from that of contact fungicides. *Compass* is not translocated in the vascular system of the plant, as are systemic fungicides.

The outstanding disease control effects of trifloxystrobin are brought about by unique redistribution properties and translaminar activity. Furthermore, *Compass* is strongly associated with the wax layer and is effectively locked onto the plant's surface. This forms a secure reservoir of fungicide that provides long-lasting, weather-protected disease control.

The lock-in properties that *Compass* exhibits defines a new class of fungicides: MESOSTEMIC.

### What is a Mesostemic Fungicide?

A mesostemic fungicide is one that has a high affinity with the plant surface and is absorbed by the waxy layers of the plant. It redistributes at the plant surface by superficial vapor movement and redistribution. It penetrates plant tissue, has translaminar activity, but there is little or no transport within the vascular system of the plant.

### COMPASS MESOSTEMIC ACTIVITY

- ⇒ SURFACE REDISTRIBUTION: *Compass* is redistributed locally on the surface of the turfgrass plant.
- ⇒ PENETRATION of WAXY CUTICLE: *Compass* has a high affinity with the plant surface and is absorbed by the waxy layers of the plant.
- ⇒ TRANSLAMINAR ACTIVITY: *Compass* penetrates plant tissue using translaminar activity, but there is little or no transport within the vascular system of the plant.
- ⇒ VAPOR PHASE REDISTRIBUTION: Uniquely, *Compass* redistributes on the plant surface and adjacent blades by limited vapor movement and re-absorption.

### CAUTIONS WITH HERITAGE, COMPASS

Strobilins (*Heritage* & *Compass*) are subject to the possibility of development of insensitivity (resistance), as with most modern fungicides. Measures should be taken to preserve the benefits that they offer in the long term. These measures should include, alternating or mixtures of fungicides that are not cross-resistant, limiting the number of sprays in a growing season of common chemistry, using the product in a preventative schedule, and following agronomic practices that help reduce disease pres-

### EDITOR'S NOTE:

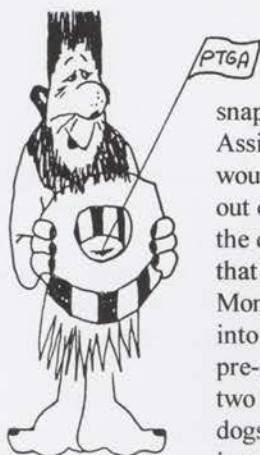
The Editor acknowledges Dr. Peter Dernoeden and Dr. Mike Agnew for their information in compiling this article.





## Diary of a Greenskeeper

### FRIDAY



In at dawn and fell over the barn dog before I could snap on the light. Friday is the day we do everything! Assistant late again; sometimes I wonder about him. He wouldn't even hold still when I had to cut the bubble gum out of his hair. Got mad 'cause I cut his head band. This is the day I was going to spray because I missed last Friday that should have gone on the Friday before that. Maybe Monday. Maybe by Monday the cutworms will have turned into moths and flown away. Looped around the course in the pre-dawn light and saw four joggers, a mushroom picker, two ball hoppers in the pond, three members walking their dogs, an old Italian lady picking dandelions and a partridge in a pear tree. Threw a rock at the last mentioned. I love the

course early in the morning; so peaceful, quiet, and tranquil. I think I'll call the State Police and have these people arrested for disturbing the peace. Lady member stopped to ask why we have brown dry spots on #2 fairway. Explained to her that there were rocks just below the surface and it dried out. She asked who put the rocks there.

## TURF MANAGEMENT ADVISORY

DCW Consulting 8/1/99

Average minimum soil temperatures are good indicators of a variety of plant relationships/stresses. We track average minimum temperatures and compare them to seven day norms and thirty day norms (thirty years of data). The result of this effort is a comparison of conditions today with thirty years of data for a site.

For instance, we have exceeded average minimum soil temperature norms for the past thirty days by 6.9+ degrees at some sites in CT, Eastern PA, and DE. Some sites in KY, MA, NJ, and VA are 5.1+ above the norm. However, coastal SC is only 2.5 degrees above normal.

This variance from the norm has intensified many warm season diseases/problems in areas where they may not be typically experienced.

**(Editor's Note:** If anyone needs weather data for a specific site to fortify the fact that your grass experienced premature plant senescence, contact Dennis Watkins at DCW Consulting (570-775-6653). The pertinent data can be supplied for your site for a nominal fee.



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*A message from your golf course superintendent and GCSAA*

## MEETING DATES TO REMEMBER

Joseph M. Duich Endowment Tournament  
Tuesday, October 5, 1999, Saucon Valley C.C.

25th Annual Western PA Turfgrass Tournament  
Monday October 11, 1999, Fox Chapel G. C.

23rd Annual Joseph Valentine Memorial Golf Tournament  
Monday, October 18, 1999 Gulph Mills G. C.

Penn State Golf Turf Conference  
November 9-11, 1999, University Park, PA

Eastern PA Turf Conference & Trade Show  
January 11-13, 2000, Valley Forge, PA

Northeastern PA Turfgrass & Grounds Maintenance School  
January 27, 2000, The Woodlands, Wilkes-Barre, PA

Western PA Turfgrass Conference & Trade Show  
February 9-11, 2000, Monroeville, PA

## Close at Hand GCSAA Seminars

- |            |   |
|------------|---|
| 10/4/99    | Protecting Natural Resources on the Golf Course<br>Syracuse, NY                       |
| 11/18/99   | Human Resource Management<br>White Haven, PA  |
| 12/6/99    | Maximizing Job Satisfaction<br>Atlantic City, NJ                                      |
| 12/14/99   | Bentgrass Summer Stress Management for Cool/Humid Regions<br>Baltimore, MD            |
| 12/15/99   | Personal Stress Management<br>Baltimore, MD   |
| 1/11/2000  | Turfgrass Ecology<br>Mars, PA   |
| 3/7-8/2000 | Physical Problems of Turfgrass Soils: Identification & Correction<br>Valley Forge, PA |
| 3/14/2000  | Turfgrass Stress Management<br>Sunnehanna, PA   |



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## POCONO ROUNDUP

NEWS AND VIEWS FROM THE POCONO  
TURFGRASS ASSOCIATION

### WELCOME!



We would like to welcome the following new members to our Association:

**John T. Ames**, Class AF, Stihl, Inc.

**Kevin Driscoll**, Class AF, Lofts Seed, Inc.

**Patrick J. Ziagos**, Class B, Shadowbrook Golf Course

*Life is a grindstone.  
Whether it grinds us down or  
Polishes us up depends on us.*

## IN MEMORIAM



We are saddened to announce the passing of William "Bill" Smith on July 13. Bill was co-owner of E & M Golf Supply. He died suddenly while on vacation in Wildwood, New Jersey. His wit and wisdom will be missed by all. Our sincere condolences go out to his wife and family.



### Vietnam Moving Wall

August 18-24, 1999

Tannersville Elementary Center

*Never think of the future,  
It comes soon enough.*



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