

# TURFCOMMS



V. 7, I. 8

Mar. 28, '94

**PURPOSE:** To pass on what we learn willingly and happily to others in the profession so as to improve turf conditions around the country.

**BOY HAVE I BEEN CATCHING HECK LATELY:** See letter below from TGIF and then there was Gary Schinderle, Golf Enviro Systems, Inc. called telling me that he had been telling me about Humate (see last issue) for three years and I better put his phone number in the next issue. Gary's Company is national Distributor for S.L.S. Humates, call him at 1(800) 225-1311 {if in Colorado area} and tell him where you saw his # and that he owes me a free sample.

"Dear Dr. Hawes, 28 January 1994

It was with major concern that I noted your editorial in the December 27, 1993 issue of Turfcotts, concerning several issues relating to TGIF and TIC.

I hope to be able to address the points you raise, in some cases providing explanations, in others, corrections.

1. We do have a major backlog on processing online activation applications. This is in part due to software limitations and complexities, staff shortages, competing fulfillment pressures, as well as a rapid increase in new subscribers, like yourself, wishing to take advantage of the online option. This is regrettable and not in keeping with our efforts and intentions to provide rapid turnaround. We are attempting to eliminate this backlog, and fully intend to do so. My apologies for this unfortunate delay.

2. When an individual "subscribes" to the Center, it can be for many reasons, one of which is to gain online access to TGIF and the other databases. Only about 50% if (sic) TIC subscribers, however, request the use of this no-initial-extra-cost option. That may have been your primary motivation for becoming involved, but it is certainly not the only reason to become involved by subscribing.

3. Regarding USGA support for the TIC project: USGA has continued to support the project since the completion of grant funds from the USGA Turfgrass Research Program ended in February of 1993. USGA Green Section personnel, including National Director Jim Snow, sit on the Center's Advisory Council, which now provides the primary external visibility, fund-raising, and feedback focal point for moving the project forward. The USGA Green Section was the first Golf Corporate subscriber under the revised subscription structure which went into place in January of 1993. I would hardly categorize this as no support, which the final line of the paragraph certainly implies.

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4. Regarding Michigan State's level of commitment to the project, and, more importantly, the concept of collecting, preserving, and providing access to the printed record of turf science and management; the record speaks clearly for itself. It began more than 20 years before I arrived at MSU, and more that (sic) 20 years before the first USGA grant monies were directed towards beginning the process of building TGIF. TGIF is, after all, a database. It is based on a Collection, the O.J. Noer Memorial Turfgrass Collection, growing through the 60's and thereafter, beginning with Dr. James Beard's recognition of the need to have SOMEWHERE where the "library" interest of the discipline and profession were seriously and systematically worked on. The O.J. Noer Foundation has maintained a long ter interest and financial stake in the development of the Collection. In addition, many, many, individuals over a very long period of time have made this project a reality, even as most individual's involvement has come and gone. It began before your M.S. at Cornell (R-10301 in TGIF), well before my arrival in 1985, and it will continue when both of us are no longer active in the turf arena." ..... "We all owe a debt to those who labored long and hard before the reality could catch up with theory on this one; many of those individuals were at MSU.

5. The future success and continued construction of TGIF is directly dependent on outside support from Foundations, Associations, Corporations, and Individuals, such as yourself, and a willingness to give as well as take from the shared resource which TGIF represents -- the literature.

I hope these comments have clarified a few points; again, my apologies for the delay on online activation. You will get time credit for the time lag. As we discussed on the phone some time ago, please let us know if we can supply any searches directly to you until you are active online, at no charge.

Incidentally, I note that we do not have a copy of either your Thesis or Dissertation in the Noer Collection; copies of both would strengthen both the Collection and TGIF. Any such help is always appreciated.

Sincerely, Peter O. Cookingham, Project Manager."

Peter,

Thesis is in the mail.

Doug. H.

**REBOUND**, ground rubber tires and compost, is a soil modification well worth looking at for those walkways on to greens and other heavily trafficked areas. After seeing their booth at The GCSAA Show I called Tommy Anderson of the Broadmoor and asked him about his experience with this product. He said that so far it has been pretty positive but, too early to make any decision yet (2/16/94).

This is NOT an inexpensive solution to an old problem but the soil physics sounds good and ground rubber tires don't decompose very fast. Again it is worth a try. Call 1-800-795-8473 for more information, in Colorado 303-322-7887. Or read the article in Grounds Maintenance, March, '94.

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**FOR A TURF ADVISORY VISIT CALL  
(214) 867-0176 and ask for the Doc.**

**Dr. Virginia Lehman Marries Old Prof.**  
or would you prefer

## Well know Turf Breeder Marries Former Student

When I heard the news just prior to publication several headings came to mind, so I thought I'd poke a little fun but didn't dare print some of those headings. I was told 3/26/94 that Drs. Milt Engelke and Virginia Lehman were married not too long ago. I wish them the best of luck. I never thought Dr. Engelke would ever marry again. A decade ago he wouldn't even go to somebody else's wedding. I was with him on the San Antonio Riverwalk about ten years ago and when he saw a wedding being performed up ahead, he told me I could keep going that way but he was turning around and heading elsewhere. Which he did real fast.

Well he married a winner this time, the second time for both by the way. Virginia is one great lady and with their combined energies and the many other attributes and interests they have in common it should be a dynamic and productive marriage.

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TEXAS TURF CONFERENCE - Dr. Monica Elliott: I've been saving two talks by Dr. Elliott because I was spending a lot of time adding to a fungicide list she handed out that I wanted to pass on to my readers.

Dr. Monica Elliott, plant pathologist from the Univ. of Florida, gave a talk entitled "Managing Patch Diseases in Turf". She prefers the name Root Rot Patch Diseases and includes Summer Patch, Necrotic Ring Spot, SDS, Bermudagrass Decline, Take All Root Rot and Take All Patch in this group. The things these diseases all have in common according to Dr. Elliott are: dark pigmented fungi which colonize roots, penetrating the root vascular system causing a root rot and collapse or plugging of the xylem and phloem tissue. Also she notes, by the time you see the symptoms it is too late to control these disease that year.

She went on to report that nutrition does appear to affect these diseases in that ammonium nitrogen reduces the effects of the disease; while nitrates and lime increase the severity. Urea based nitrogen is intermediate. Acidifying the soil reduces the severity and so does high soil potassium levels. The effects of micronutrients is still questionable.

For control only use systemic fungicides and realize that they, for the most part, only move up in the plant therefore they must be drenched into the soil. Bayleton, Rubigan, Fungo, 1991 and Banner are effective if applied preventative. She did make it clear that one should not use Banner when the temperatures go over 93°F.

Dr. Monica Elliott gave a second talk titled "How to mix Fungicides". I thought this was excellent but trying to take notes from her lecture and slides proved to be almost impossible there was just too much good information. She did give a handout which I'm including. Here is the few notes I was able to get. **DO NOT MIX FUNGICIDES WITH HERBICIDES.** Do not mix with surfactants unless the label specifies.

She praised the Subdue label as being one of the best to show what it is compatible with. She noted that Subdue should always be watered in with 1/4 to 1/2 inch of water.

Aleitte should not be mixed with foliar fertilizers, metal ions, surfactants, or flowable Daconil 2787. The latter I, the editor, would never use on bentgrass/ *Poa annua* greens in the summer time.

That the Pennwalt label for Maneb carries a 24 hour waiting period.

That Algaen-X (Consan 20) should not be mixed with anything and be sure to use lots of water with the high label rate.

For Banner the addition of surfactants may result in phytotoxicity and do not mix with 1991 or a fertilizer solution.

She gave out a handout which I am including as a separate sheet. I am including it because it is so critical to not only switch fungicides periodically but when you make a switch it needs to be to a product in **another chemical class**. This handout makes it easier to identify the chemical classes. I have added the common name for the products in the O.M. Scott's line as well as Lesco and other information I could find at the GCSAA Show including the new fungicide ProStar and a new biological fungicide. I suggest you add the common names of the chemicals you commonly use and any you consider using.

### **Turfgrass Fungicides** **Grouped by Trade and Common Names - List One** **Grouped by Class - List Two**

These two lists of fungicides were stimulated in part by a talk given by Dr. Monica L. Elliott, University of Florida - IFAS, Fort Lauderdale Research and Education Center at Texas Turf Conference, Dec. 1994. The arrangement of fungicides by class is her list. I wish to thank her for proofing this paper and adding many comments. Additions which have been made by me, Dr. Douglas T. Hawes, are shown in **Hobo-WP**, any fungicide left out or any mistakes made are my fault. The grouping by trade and common names followed by class was an idea of mine that I thought would help make her list more useful.

Products are grouped according to chemical class for several reasons. As disease control becomes more sophisticated disease control experts such as Dr. Elliot tell us that we should never mix fungicides belonging to the same chemical class. Secondly, when we want to alternate fungicides to avoid development of resistant strains of pathogens it is wise to alternate to another class of fungicide. When we want to obtain a broad spectrum of preventative control it is also wise to combine fungicides of different classes. The combination products on the market such as Broadway, Duosan and Fungicide VIII do this for us.

To assist you in making fungicide decisions I have made an alphabetized list of fungicides by common and trade name. Then for each of these we have given you the class. These two groupings allow several approaches to making fungicides selections. You may go down the list of common and trade names until you find the fungicides you want to use and quickly determine whether they are in different classes or you can go to the class your principle fungicide is in and find what other fungicides are in that class so that you will know what you shouldn't be using with it. Fungicides listed with ☉ to the right of their name are combination material.

**Turfgrass Fungicide Trade and Common Names with Class**

<u>NAME</u>	<u>CLASS</u>	<u>NAME</u>	<u>CLASS</u>
Aliette	Organic phosphates	Iprodione	Dicarboximides
Algaen-X	Quaternary ammonium salts	Intercept	Biological
Anilazine	Triazines	Koban	Aromatic hydrocarbon
Apron	Acetanilide	Mancozeb	Dithiocarbamates
Banner	Demethylation inhibi.	Maneb	Dithiocarbamates
Banol	Carbamates	Manex	Dithiocarbamates
Banrot	● Aromatic hydrocarbon and Benzimidazoles	Manicure	Benzonitrile
Bayleton	Demethylation inhibi.	Metalaxyl	Acetanilide
Benomyl	Benzimidazoles	Pace	● Acetanilide and Dithiocarbamates
Broadway	● Benzonitrile and Demethylation inhibi.	PCNB	Aromatic hydrocarbon
Bromosan	● Dithiocarbamates and Benzimidazoles	Penstar	Aromatic hydrocarbon
Chipco 26019	Dicarboximides	Prodigy	Organic phosphates
Chloroneb	Aromatic hydrocarbon	Prostar	Benzanilides
Chlorothalonil	Benzonitrile	Propamocarb hydrochloride	Carbamates
Cleary 3336	Benzimidazoles	Propiconazole	Demethylation inhibi.
Consan 20	Quaternary ammonium salts	<u>Pseudomonas cepacia</u>	Biologicals
Curalan	Dicarboximides	Quintozene	Aromatic hydrocarbon
Cyproconazole	Demethylation inhibi.	Revere	Aromatic hydrocarbon
Daconil 2787	Benzonitrile	Rubigan	Demethylation inhibi.
Dithane DF	Dithiocarbamates	Sentinel	Demethylation inhibi.
Duosan	● Benzimidazoles and Dithiocarbamates	Spotrete	Dithiocarbamates
Dyrene	Triazines	Subdue	Acetanilide
Ethazol	Aromatic hydrocarbon	SysTec 1998	Benzimidazoles
Etridiazole	Aromatic hydrocarbon	Systemic Fungicide	Benzimidazoles
Fenarimol	Demethylation inhibi.	Thalonil	Benzonitrile
Fore	Dithiocarbamates	Teremec	Aromatic hydrocarbon
Formec 80	Dithiocarbamates	Terraneb	Aromatic hydrocarbon
Fosetyl-al	Organic phosphates	Terraclor	Aromatic hydrocarbon

<u>Name</u>	<u>Class</u>	<u>Name</u>	<u>Class</u>
Fungicide VIII	● Benzimidazoles and Dicarboximides	Tersan 1991	Benzimidazoles
FF II	Aromatic hydrocarbon	Tersan LSR	Dithiocarbamates
Fluid Fungicide	● Benzimidazoles and Dicarboximides	Thiophanate ethyl	Benzimidazoles
Fluid Fungicide II	● Demethylation inhibi. and Acetanilide	Thiophanate methyl	Benzimidazoles
Fluid Fungicide III	● Demethylation inhibi. and Dithiocarbamates	Thiram	Dithiocarbamates
Fungicide V	Aromatic hydrocarbon	Topsin M	Benzimidazoles
Fungicide VII	Demethylation inhibi.	Touche'	Dicarboximides
Fungicide IX ●	Aromatic hydrocarbon and Benzimidazoles	Triadimefon	Demethylation inhibi.
Fungicide X	Dicarboximides	Vinclozolin	Dicarboximides
Fungo	Benzimidazoles	Zineb	Dithiocarbamates
		Vorlan	Dicarboximides

### Turfgrass Fungicides Grouped by Class

The classes are listed in alphabetical order. Whether that class is generally Systemic or generally Contact is spelled out after the class name. The name in **Bold** under a fungicide chemical class is the common name of the fungicide. The names in (parenthesis) are examples of the trade names for the fungicide. The name underneath these two names in small type is the formal chemical name of the fungicide.

#### Class ACETANILIDE - Systemic

**METALAXYL** (Subdue) (part of Fluid Fungicide II) (part of Pace) (Apron)

N-(2,6-dimethylphenyl)-N-(methoxyacetyl)alanine methyl ester

#### Class AROMATIC HYDROCARBONS - Contact

**CHLORONEB** (Terraneb) (Fungicide V) (part of Fungicide IX) (Teremec SP)

1,4-Dichloro-2,3-dimethoxybenzene

**ETHAZOL** or **ETRIDIAZOLE** (Koban) (part of Banrot)

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole hydrochloride

**PCNB** or **QUINTOZENE** (Terraclor), (FF II/14-3-3). (Penstar)

pentachloronitrobenzene

**Class Benzanilides (Carboxamides) - Systemic**  
**Flutolanil (Prostar)**

N-[3-(1-methylethoxy) phenyl]-2-(trifluoromethyl) benzamide

**Class BENZIMIDAZOLES - Systemic**  
**BENOMYL (Tersan 1991)**

Methyl 1-(butylcarbamoyl)-2-benzimidazolecarbamate

**THIOPHANATE METHYL (Fungo) and Fungo Flo. (part of Fertilizer Plus Fungicide VIII/23-3-5)**  
**(Systemic Fungicide) (part of Fungicide IX) (part of Fluid Fungicide) (part of**  
**Duosan) (Topsia M) (SysTec 1998) (part of Banrot)**

dimethyl (1,2-phenylene)bis(iminocarbonothioyl)bis(carbamate) or dimethyl 4,4'-o-phenylenebis[3-thioallophanate]

**THIOPHANATE-ETHYL (Cleary 3336) (part of Bromosan)**

1,2-Bis(ethoxycarbonyl-2-thioureido)benzene or diethyl (1,2-phenylenebis iminocarbonothioyl)bis(carbamate) or Diethyl 4,4'-o-Phenylenebis (3-Thioallophanate)

**Class BENZONITRILE - Contact**

**CHLOROTHALONIL (Daconil 2787) (part of Broadway) (Thalonil)**

Tetrachloroisophthalonitrile

**Class BIOLOGICALS - Contact**

**PSEUDOMONAS CEPACIA (Intercept)**

This is a bacteria used to control fungi the scientific name of the bacteria become scientific name.

**Class CARBAMATES (most of these are insecticides) - Systemic**  
**PROPAMOCARB HYDROCHLORIDE (Banol)**

propyl [3-(dimethylamino)propyl]carbamate monohydrochloride

**Class DICARBOXIMIDES - Contact**

**IPRODIONE (Chipco 26019) (part of Fertilizer Plus Fungicide VIII/23-3-5) (Fungicide X) (part**  
**of Fluid Fungicide)**

3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide

**VINCLOZOLIN (Curalan) (Vorlan) (Touche')**

3-(3,5-dichlorophenyl)-5-vinyl-5-methyl-1,3-oxazolidine-2,4-dione OR 3-(3,5-DICHLOROPHENYL)-5-ETHENYL-5-METHYL-2,4-OXAZOLIDINE

**Class DEMETHYLATION INHIBITORS - Systemic**  
**FENARIMOL (Rubigan) (part of Broadway)**

3-(2-chlorophenyl)-3-(4-chlorophenyl)-5-pyrimidinemethanol

**PROPICONAZOLE (Banner)**

1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-ylmethyl]-1H-1,2,4-triazole

**TRIADIMEFON (Bayleton) (HD Fertilizer Plus Fungicide VII/28-012) (Fungicide VII) (and part of Fluid Fungicide II & III)**

1-(4-chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone

**Cyproconazole (Sentinel)**

$\alpha$ -(4-chlorophenoxy)- $\alpha$ -(1-cyclopropylethoxy)-1H-1,2,4-triazole-1-ethanol

**Class DITHIOCARBAMATES - Contact**

**MANCOZEB (Dithane DF) (part of Duosan) (Fore) (part of Bromosan) (part of Pace) (Formec 80)**

coordination product of zinc ion and manganese ethylene bisdithiocarbamate

**MANEB (Manex) (Tersan LSR)**

manganese ethylene bisdithiocarbamate

**THIRAM (Spotrete) (part of Fluid Fungicide III)**

tetramethylthiuram disulfide

**Class ORGANIC PHOSPHATES (many of the insecticides are in this class) - Systemic  
FOSETYL-AL (Aleitte)**

aluminum tris (-O-ethyl phosphonate)

**S - Quaternary Ammonium Salts - Contact**

**Quaternary Ammonium Salts (consan 20) (Algaen-X)**

Combination of Alkyl dimethyl benzyl ammonium chlorides and Alkyl dimethyl ethylbenzyl ammonium chlorides

**Class TRIAZOLES - see Class Demethylation inhibitors specifically Banner, Bayleton, Rubigan and Sentinel.**

**Class Triazines - also herbicides - Contact**

**Anilazine (Dyrene)**

2,4-dichloro-6-(2-chloroanilino)-1,3,5-triazine

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