(Growth Retardants Cont'd.)

nual bluegrass requires critical timing to insure that the seedhead has not already formed. The rate for seedhead suppression is also lower than that used for normal retardation of Kentucky bluegrass. Special care should be exercised when using mefluidide for this purpose.

The use of retardants will not doubt increase in the future as newer materials become available. In summary, the use of retardants should be considered on areas that lend themselves to slow growth such as roadsides and difficult to mow areas. The applicator should take special precautions to insure a uniform application of material. Finally, don't be afraid to experiment with these materials before spraying large areas.

Sun Care Do's and Don'ts

DO try to stay out of the sun between 10 a.m. and 2 p.m. — when the sun's radiation is strongest and most damaging.

DON'T expect sunburn to turn into suntan — contrary to popular belief, getting red and burning actually inhibits the tanning process.

DO tan gradually — the tan you build slowly without burning lasts longer.

DO use the Sun Protection Factor system — multiply the number of minutes you can sun unprotected without burning X the SPF number of any product to get the number of minutes you can sun without burning using that product.

DON'T ever use a sun reflector — it intensifies the sun's damaging effects.

DO count swimming time as sun time — burning rays penetrate water.

DON'T expect a wet t-shirt to block the sun's burning rays it is only 20 to 40% effective. Generally, whatever you can see through, the sun can burn through.

DO change position often — to balance skin's sun-exposure and to ensure a more even tan.

DO protect hair from the sun's drying effects with a scarf or hat. Shield eyes with dark-tinted sunglasses to help prevent wrinkles caused by squinting.

DON'T assume that fog and clouds will block ultraviolet radiaiton -50% of the ultraviolet rays get through with total cloud cover. 100% penetrate on a hazy day.

DO remember — perfume and sun don't mix. The combination can cause a photosensitive skin reaction.

DON'T count on a beach umbrella to protect you from the sun — burning rays can reflect off the sand and onto your skin.

DO apply protection over suntanned skin — ultraviolet rays can penetrate even the darkest base tan.

DON'T forget — birth control pills make some women more prone to increased pigmentation. Watch out for darker, mottled areas of skin on the face; they require total sunblock protection. DO count outdoor spot time as sun time — use sunscreen protection when playing tennis, golfing or sailing.

DO wear sun protection when you ski — high altitudes expose your skin to stronger, less filtered sun. Snow reflects up to 85% of the burning rays.

DO check with your doctor before sunning if you are taking any medication — certain types may cause photosensitive skin reactions.

DON'T ever sunbathe for more than 2 hours — no matter how tan you are or how much sun protection you are wearing.



-11-

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Gaeumannomyces Patches in Michigan

by J. M. Vargas, Turfgrass Pathologist

Gaeumannomyces patch or "take all disease" (formerly known as **Ophiobolus** patch) is becoming a problem in Michigan. The disease have been a problem for many years in the Pacific Northwest and most people believed it was confined to this area of the country. In the past few seasons it has been reported on the East coast and we have found it in many states in the mid-west.

The disease attacks both creeping bentgrass and annual bluegrass greens and annual bluegrass fairways. On creeping bentgrass the disease first appears as faded straw colored patches or circles. Later the plants in the circle become purple in color resembling a phosphorus deficiency. On annual bluegrass the patches or circles appear yellow in color. Usually a brilliant yellow at first and a more bronze-yellow later. Anthracnose is often found on the foliage of senescing plants in the outer circle. However, it should be remembered that anthracnose is a disease characterized by a general thinning and **Gaeumannomyces** patch as the name implies is a disease that forms patches or circles. The reason I point this out is some people were confusing the two diseases this summer.

The Gaeumannomyces fungus primarily attacks the roots and the crowns of the plants. In addition to being internal in the crowns and roots it also produces runner hyphae which grown down the outside of the root. These structures can be seen with a hand lens or lower power scope. They appear as dark hairylike strands running parallel along the root surface. Because the fungus is internal and confined primarily to the roots and crowns effective chemical management may be difficult to achieve.

We have no fungicide recommendations at this time. Superintendents have reported varying degrees of success with 8 oz. of Tersan 1991, 8 oz. of Daconil 2787 and 4 oz. of Chipco 26019. I would suggest you apply these three fungicides to a test area on your golf course to see which, if any, work best for you. The Tersan 1991 and Daconil 2787 should probably be drenched into the turf.

Credit - Patch of Green, 3/84

Certified Seed Redemption Program

Turf Seed Inc. will donate \$0.50 to the Illinois Turfgrass Foundation for each blue tag from a 50 lb. bag of certified seed of their varieties that the ITF collects. The purpose of this program is to encourage the use of certified seed and to promote turfgrass research. The varieties covered by the program are listed below. Please send your tags to the ITF office, P.O. Box 501, Urbana, Ill. 61801. Also, please let others know about this program so that their tags can be saved.

Kentucky bluegrass varieties		Fine fescue varieties	
Challenger			Aurora
Columbia		Waldina	
Midnight			Shadow
Shasta			Flyer
Perennial ryegrass varieties			Fortress
Birdie	Manhattan	Tall fe	escue varieties
Birdie II	Manhattan II		Apache
Citation	Omega		Falcon
Citation II			Olympic
CBS		Creeping bentgrass varieties	
CBS II		Penneagle	Penncross



Marge and Tony Meyer are proud parents for their last son just graduated May 13, 1984 from the College of Veterinary Medicine, University of Illinois. Robert will have an associate position with a clinic in Ocala, Florida on June 1st.

Mr. & Mrs. Frank Kruger's grand-daughter, Tricia Goebel graduated from Illinois State University on May 5th, 1984. Also Frank's wife, Francis retired on April 27th from 27 years with Avon Products.

For Sale: Driving range equipment — Ball dispenser, washer, and pick up unit, with or without tractor. Palatine Hills Golf Course, (312) 359-4022.

Mark your calendars now for the 81st Western Open Championship at Butler National Golf Club - July 5-8, 1984.

"Johnny Lebedevs Goes to the Finals"

Johnny "Cool Hand" Lebedevs came second in the 3rd annual charity Gin Tournament March 26, 1984 at Hackney's in Wheeling. Johnny's sudden surprising prominence into championship form was a result of skill and technical knowledge (according to his boss, Walter Fuchs, Jr.) versus his opponents loose but willing strategy based on luck & superstition by quick call artist Vince Latham known on restaurant row as the "Man from Rio".

Almost \$1,000.00 was again raised by our generous endeavor for this year's recipient, the American Cancer Fund.

New and eager participants this year were Carl "Blue Grass" Hopphan, Craig Marfia (came in third), and David "Thunder" Meyer. A wonderful free lunch was served by our generous host "Greg" Masterson. One note of possible interest, my committee of Johnny "Bear" Beraducci, Kenny "Cap" Goodman and my own dear brother Peter carried out a treacherous South American "knife in the back" coup while I was hunting the sunny beaches of Puerto Vallerta. During my "few words" to the boisterous participants I was suddenly interrupted and presented unceremoniously with a Past Chairman gin tournament trophy. The jealous comment was "We do all the work and you do all the talking."

> Submitted for the last time by "memorial" Paul N. Voykin, now past chairman and as usual past loser in the 1st round



The May joint meeting of the three area associations was well attended at the Kankakee Elks C.C. by over 175 people. LESCO sponsored the golf event and at the dinner presented a check for \$2,500.00 to the Illinois Turfgrass Foundation. It was a great day to get together with the other superintendents from the central and north west chapters.

The deepest sympathy of the members of the Midwest Association of Golf Course Superintendents is extended to the Alfred Bertucci family on the death of Al's father, Elmer, age 98, who passed away on May 8th, 1984.

Elmer Bertucci became a golf course superintendent in 1913 and retired in 1958 after 45 years as the Superintendent at Old Elm Club. At that time Al Bertucci succeeded his father as Superintendent until he retired in 1981. Elmer first worked at Exmoor Country Club after coming here in 1907 from Italy. Elmer has been a lifetime member of the MAGCS.

M.A.G.C.S. Meeting Monday, June 4, 1984 Old Elm Club 800 Old Elm Road Highland Park, Illinois Host Superintendent - Ed Fischer

For this event reservations will be required and the event will be limited to M.A.G.C.S. members only. The reservation deadline is June 1. For reservations, call Mike at 312/432-6272. When making reservations the following information will be needed:

1. Names of members of your foursome.

2. Everyone must take a golf cart or Old Elm Caddy, state your choice, this will be on a cash basis only.

3. Golf handicaps for each member of your foursome will be needed.

The agenda for the day will be as follows:

Arrival time will start at 10:00 a.m.

Golf bags to be dropped at the front door.

Each contestant will be assigned a locker.

Lunch will be served in the Dining Room at 11:15 a.m. — since we will be treated in the "Old Elm Tradition", a sports coat will be required. The luncheon and cocktails at Old Elm will be furnished by sponsors.

The golf event for the day will be a Fourmen Best Ball Event. A Shotgun start is scheduled for 12:15 p.m. A Skin game will be operated by the Pro Shop.

After golf we will travel to the Highwood Ramada Inn at 666 Sheridan Road in Highwood. Cocktails start at 6:00 p.m.; dinner served at 7:00 p.m.; meeting and awards to follow.

Directions: from the tollway, exit at Route 22 east, take Route 22 east to Route 41, take Route 41 north to Old Elm Road, take Old Elm Road east to the club.

"Summer Season" Kenneth R. Zanzig

As June initiates the Summer Season,

The Heart of the Golfing Season makes It's stand. The thrill of dealing with Summer's treason,

Is like filling a straight, in a Poker hand. If You're wise, or lucky, equal to the teasing,

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Turf Management

Fungicides: The Good, The Band and The Ugly Peter H. Dernoeden, Extension Turfgrass Specialist

Arriving at the decision of whether to apply a fungicide to any turf area is difficult and generally based on economic considerations. For over 50 years, and prior to the popularization of the IPM concept, turfgrass managers have been fighting diseases through cultural practices. With the advent of modern fungicides, extremely reliable control has been achieved for many turf diseases. Effective chemical control, however, hinges upon a rapid and accurate disease diagnosis. As a group, golf course superintendents are the most experienced turf managers in the area of disease recognition and control. Homeowners, however, often are unable to diagnose turf diseases, or they recognize a disease problem only after substantial injury has occurred. As a general rule, use of fungicides is discouraged in most homelawn situations because (a) proper diagnosis and proper fungicide selection is difficult, (b) it is generally too late to achieve the economic and aesthetic benefits of a fungicide once extensive injury has occurred, (c) homeowners capable of only dry or granular applications do not have the proper spray equipment or they cannot obtain small amounts of the desired fungicide(s) for the disease situation, and (d) it may be less expensive, and better in the long-run to overseed a damaged turf area with disease resistant cultivars.

Where extremely high quality turf is required (e.g. golf course putting greens and other professional sports turfs) fungicides will be needed in most years, particularly in the transition zone. The indiscriminate use of fungicides or employment or numerous, preventative applications of fungicides for many diseases should be discouraged. Other than economic restraints, reasons why repeated fungicide applications may not be desirable include:



1. Fungicide may reduce the population of beneficial microorganisms in the soil.

2. Fungicides may disturb a delicate balance among microorganisms that compete with and antagonize disease causing fungi. This may explain why some diseases recur more rapidly and cause more injury in turfs previously treated with fungicides.

3. Continous usage of a single fungicide may lead to the development of fungal strains that are fungicide resistant.

4. A fungicide may control one disease, but encourage other diseases.

5. Possible phytotoxic or undesirable hormonal effects.

When used repeatedly, certain fungicides have been shown to enhance thatch accumulation. Benzimidazole fungicides (e.g. Tersan 1991, Bromasan and Duosan) and sulfur containing fungicides such as mancozeb (Dithane M-45), maneb (Tersan LSR), and thiram (Tersan 75 and Spotrete), cause thatch to accumulate by acidifying soil. The effect of these fungicides is indirect, that is they inhibit the thatch decomposition capacity of beneficial microorganisms by lowering pH. Cadmium fungicides and iprodione (Chipco 26019) also enhance thatch accumulation. In the case of these latter two compounds, thatch build-up is attributed to direct toxicity of microorganisms that degrade thatch. Fungicides may also contribute to thatch buildup by being toxic to earthworms. Earthworms help reduce thatch by mixing soil with organic matter. Benomyl, mancozeb, anilazine (Dyrene) and chlorothalonil (Daconil) have been (cont'd. top of page 16)

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Area Code 312 658-5303 620 Webster St. Algonquin, IL 60102 shown to be toxic to earthworms.

Turf managers have observed that some disease may recur in turfs previously treated with fungicides, but not in adjacent untreated areas. Dollar spot is probably the most common disease to exhibit this phenomenon. Data, recently recorded in a test conducted by the University of Maryland, have shown that red thread was more severe in the spring of 1983 in Manhattan perennial ryegrass plots last treated with benomyl in July, 1982. These phenomena are attributed to non-target effects of fungicides, i.e., the fungicide(s) were toxic to microorganisms which antagonize and help keep disease causing fungi in abeyance.

The development of fungal strains resistant to fungicides has been well documented. Resistant strains of the dollar spot fungus first developed as a result of repeated usage of cadmium based fungicides and benomyl. Thiophanates (e.g. CL3336, Fungo and Duosan), anilazine and iprodione resistant strains of the dollar spot fungus have also been reported. Benomyl resistant strains of fungi causing Fusarium blight and powdery mildew, and iprodione resistant strains of the pink snow mold organism have also been reported. The development of resistant strains of fungi likely occurs in response to a selection process that eventually enables a small, but naturally occurring population of resistant biotypes to predominate in the fungicide-treated turfgrass microenvironment.

Fungicides applied to control one disease, may encourage other diseases. Tests conducted in Maryland have shown that benomyl and maneb can encourage red thread. Benomyl has also been shown to enhance Helminthosporium leaf spot, Pythium blight and superficial fairy rings. Thiophanate-methyl may increase crown rust in perennial ryegrass, iprodione can increase yellow turf, and maneb may enhance dollar spot. In 1983, in University of Maryland tests, two common-type Kentucky bluegrass cultivars treated on monthly intervals with chlorothalonil were injured more severely by Fusarium blight and heat and drought stress than untreated turf. Encouragement of disease in these situations may again be attributed to offsetting the delicate balance between antagonistic and pathogenic microorganisms in the ecosystem. It is also conceivable that some fungicides may physiologically alter the capacity of a plant to resist a particular pathogen or withstand environmental stress.

The phytotoxicity that accompanies usage of some fungicides is generally not severe. Most phytotoxicity problems occur when fungicides are applied to bentgrasses, particularly during periods of high temperature stress. Fungicides that can cause yellowing of bentgrass include benomyl, cycloheximide (Acti-dione), PCNB (Terraclor and Acti-dione RZ) and the mercurials (e.g. Calo Clor and PMAS). Benomyl has been reported to inhibit growth and stolon production in bentgrass, and may cause a tip dieback in Merion Kentucky bluegrass. Etaconazole (Banner and Vanguard), fenarimol (Rubigan), triadimefon (Bayleton) and PMAS treated bentgrass may develop an objectionable bluegreen color if used repeatedly or when applied at high rates. PCNB also may elicit a purplish color when applied to Turcote bermudagrass in the autumn.

these potential problems. The importance of rapid and accurate disease diagnosis, and the judicious use of fungicides are integral in management problems were fungicides are commonly employed.

Credit — The Agronomist University of Maryland, November, 1983

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Covering Greens for Winter by Daniel Murray Kishwaukee Country Club

After learning of Du Pont's relatively new green cover Reemay at the GCSAA Convention I decided to purchase some and try an experiment on one of our problem greens. In the early part of February we had a warm spell and the snow cover melted on our test green. On February 13th we spiked and seeded the bare areas on the green. It was then covered with the Reemay mat.

We waited until the last possible day before taking the mat off. When we took the mat off on April 9th the green was growing and filling in. The seed had germinated and was starting to grow. The soil temperature on the covered green was 62 degrees and on the rest of the greens it was about 47 degrees. The covered green had about 3/8''-1/2'' of growth and a very green color. I feel the green is a good two weeks ahead of the rest of our greens.

I felt the Reemay mat performed very well for us. There was no more Snow Mold on the covered green than any other green, but the seed germinated earlier and the turf started to fill in. It also gave our membership something nice and green to look at in anticipation of the summer to come.





LOCATING HYDRAULIC TUBE LEAKS

J. Douglas Rothwell

The Royal Ottawa Golf Club

A common spring startup problem associated with automatic irrigation systems is, locating hydraulic tubing leaks. My Assistant, Rheal Ladouceur, devised a simple device to locate these leaks, that proved very successful last spring, saving time and labour.

The widget (see diagram) is essentially a reservoir that holds red food dye coupled at one end to a portable compressed air tank (40-60 psi) and at the other to the hydraulic tubing. 'We found leaks within several minutes and from as far away as 100 feet or so. In some cases it was necessary to refill the reservoir. The undiluted red dye was readily visible at the grass surface.

List of Materials and Assembly

Air valve stem - solder to copper pipe
 ½ inch copper pipe

- Brass adaptor (½ in. slip x 1 in. thread)
 solder to copper pipe
- 4. Brass hose adaptor 1 in.
- Hydraulic tube connector fit and solder to hose adaptor.

To Operate

Unscrew at hose adaptor, add dye and reattach. Couple air valve stem to compressed air tank and hydraulic tube connector to hydraulic tubing and pump dye to locate leak.

Credit: "Greenmaster" - 4/84



Control Tent Caterpillars Now

James A. Fizzell, Sr. Ext. Adviser Horticulture

Tent caterpillars, are insects that eat the leaves off of crabapple and other trees in the spring. They have just hatched and now is the time to control them before major damage occurs.

Eastern tent caterpillars, **Malacosoma americana**, hatch early in the spring as the new leaves emerge. They form silken tents in the twig crotches where the colony of two or three hundred caterpillars stay during the night and on cloudy, rainy days.

On sunny days, they climb all over the tree and eat the young leaves. Depending on the number of caterpillars present, these insects are capable of eating all of the leaves off of the tree.

Infestations are most common on crabapple, apple, and cherry, although ash, birch, willow, maple, oak, poplar,

hawthorne, and plum are also attacked.

The caterpillars or larvae are black when young, but soon develop a yellow stripe down the back that turns whitish with age. By the end of May, they are 2-3 inches long and come out of the tree to look for a place to form their cocoons.

A couple of weeks later they emerge as brown moths. After mating, the females lay 150-300 eggs in dark brown ½ inch long masses around small twigs. These eggs don't hatch until the following spring.

Spraying the trees with **Bacillus thuringiensis** (Dipel, Thuricide), malathion, or carbaryl (Sevin) is also effective. If the tree is in bloom, do not use malathion or carbaryl so that honey bees visiting the flowers will not be killed.

Rubbing the egg masses off of the branches between June and March will eliminate next spring's infestation.

