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PRESIDENT'S MESSAGE

Have you noticed the difference in the air lately? Are your mowers sharp and the benches painted? I do believe that spring is almost here!

I hope that during the months of January and February you had a chance to attend the Michigan Turfgrass Conference in Lansing and/or the GCSAA National Conference and Show in Houston. These two organizations do such a great job and the programs get better every year.

Michigan was well represented at the GCSAA Golf Tournament with 26 men participating in the tournament that precedes the conference. Although the men's team did not do too well, there were some individual efforts in the senior division. Clem Wolfrom was a silver plate winner. Congratulations Clem!

We were also well represented by the women golfers of Michigan. Mary Jane DelCamp was the overall winner with a fine 76. Dorinda McMullen, Betsie Scott, Becky Tate, Ginny Forier and Carrie Longfield all were prize winners. Congratulations Ladies!

There are some important dates coming up and the Board of Directors would like to see all of you there:

April 27 - Joint Meeting with our friends in Canada, Beechgrove Country Club

May - Special Olympics will be held at Indianwood Country Club

Below is a list of the committees and the chairman for each. I encourage all of you to show your support and get involved.

Committee	Chairman
Education	Roger Gill
Membership	Jim Timmerman
By-Laws	Ed Heineman
Golf	Jay DelCamp, Ken DeBusscher
Special Olympics	Gary Thommes
Golf Day	Ken DeBusscher, Gary Thommes
Christmas Party	Ed Heineman
Publicity & Awards	Jay DelCamp
Ethics	Kevin Dushane
Finace	Jon Maddern, Tom Mason
Editorial	Kevin Dushane
Welfare	Jon Maddern
Historian	Jay DelCamp
Policy Book	Jon Maddern
GAM Seminar	Tom Mason
Picnic	Ken DeBusscher
Scholarships	Jim Timmerman, Ed Heineman
Shirts	Gary Thommes, Jay DelCamp



"A PATCH OF GREEN"
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ANOTHER WORD ON "BLACK LAYER"

by Jon Scott, CGCS, Valhalla Golf Club,
and Jeff Holmes, Grand Traverse Resort

An article appeared in the December, 1987 issue of this newsletter concerning one superintendent's observations on the black layer that is, in our view, inaccurate. While everyone has the right to an opinion concerning the problem or its causes, we feel it is unfair to characterize or single out any operation and pass judgement on the conditions which may or may not have been evident in one visit to the site. While we were not mentioned by name, we feel it is fairly evident to the reader who the author was referring to in his statements, and we take issue with his conclusions. We would like to offer the following for your information.

First, the statement that our case history ". . . is perhaps a combination of both poor construction and poor management", is strong words from someone we have never spoken to personally about our construction methods, our programs, or our efforts to deal with the black layer. We might add at this point, that we were always glad to do so with anyone who inquired. Poor management is a phrase that is used all too often in our profession to excuse what we don't understand.

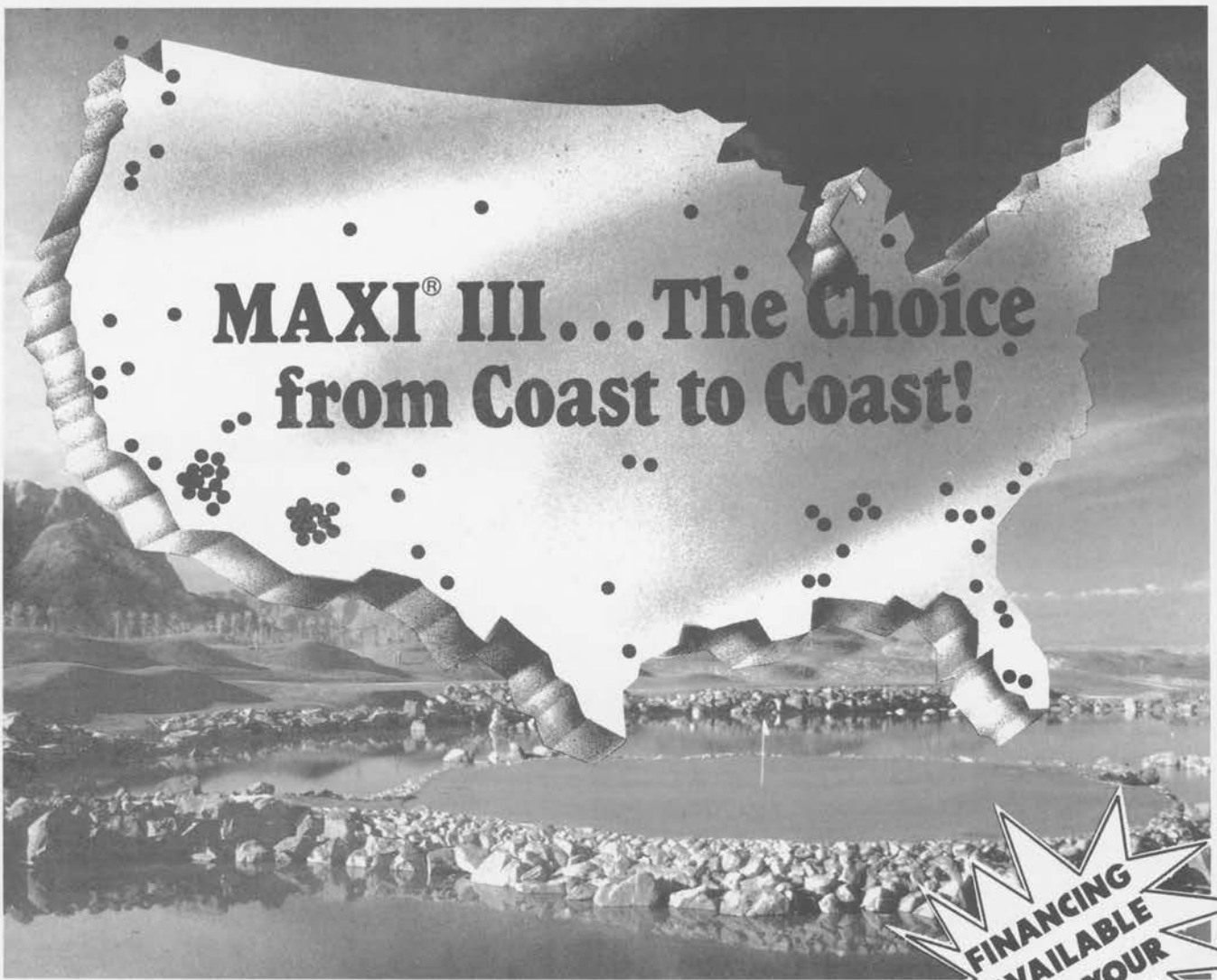
The next paragraph concerning a ". . . recent visit to this golf course. . ." finding ". . . a few cups on the greens were full of water. . ." probably refers to the putting green. If this is the case, the author is absolutely right in saying that this is the result of poor construction . . . for a putting green. The fact is that this green is not a green at all. It is a converted driving range tee with no drainage and no gravel bed. Just greensmix poured over a clay base, unfortunately the method used to construct many tees. Tile was installed in this "green" late this fall. If water in cups of other greens existed at the time of the visit, we have not often observed this problem. In fact, the greens on the "The Bear" have been very porous and frequently perk too fast. Two years ago during the 1985 Michigan Open, the final round was played after a rainfall of 4.5 inches in 24 hours. There was no water in the cups. The only occasion the greens held water, they were severely hit with a black layer just one inch below the surface, not at cup depth. In fact, when holes were punched through the one inch layer, water drained through the remaining greensmix without problem. As far as the author's observation of a dense layer of soil at the surface covering "the coarse sandy soil of the green", we take strong exception. This layer has been sent to both K.W. Brown Labs and Agrisystems for analysis, and in no report we have received has there been any evidence

of soil at the surface. What is there is a layer of decomposing thatch from our aggressive grow-in program which is now mixed with sand topdressing. Here, we can agree that we may have located the source of our problem. The sand used for topdressing is of a slightly finer grade than the coarser greens mix. This topdressing was evaluated by Brown Labs of Texas and passed as suitable for use. We have written reports to back this up. However, that doesn't mean that it is not causing a problem. We have spoken with Dr. Brown about this, and he admits that their standards may have been too loose. That is not surprising considering all the "loose" interpretation that has gone on over the years concerning the USGA specs. We are continuing to use this grade to prevent a "sandwich" effect, but are aerifying and removing cores prior to topdressing at least twice per season.

We agree with the article's recommendations on aerifying and topdressing, and have followed this same regimen since grow-in. We do not agree with the statement that, "Sulfur and iron do not cause black layer", in the context presented. In our observations, it is just not that simple. Dr. Joe Vargas' work with Lee Berndt has shown that sulfur and iron when combined with a condition preventing water movement will chemically react and further plug up the pore spaces. At that point, anaerobics takes over and the toxic sulfides are produced. To say that this will not cause black layer is misleading. If one doesn't have a condition that impedes water movement in the profile, there will not be a problem with sulfur and iron. If, as in the case of many golf greens, there is a zone of impediment, our observations and Lee's work have proven that sulfur and iron will collect in this zone and further aggravate an already poor situation, ultimately resulting in anaerobic conditions and possibly black layer. Needless to say, in our case, the near elimination of free sulfur and reduction of iron applications in our program, we feel, helped "The Bear" fight the black layer and live with the zone of impediment until, hopefully, aeration eliminates the problem.

The article's final recommendations on curing black layer are accurate. However, as we all found out two years ago, it is impossible to control mother nature and the resulting wetness. If it were as simple as shutting off the faucets, we'd all have been heroes from the start. Improving aeration is the only way to eliminate the layer once it has formed, but deeper aerifiers must be used, and these are only now

CONTINUED PAGE 25



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(L to R) Don Fields, Mark Hartsough, John Kirtland, Larry Reed, Tom Calverly, Debbie Whitney, Kimberly Olson.



DR. KENYON PAYNE HONORED BY GCSAA

The Golf Course Superintendents Association of America (GCSAA) honored Dr. Kenyon T. Payne with its Distinguished Service Award (DSA) at their annual meeting on February 4, 1988.

Payne was one of four DSA honorees at the 59th International Golf Course Conference and Trade Show at the George R. Brown Convention Center in Houston.

Kenyon T. Payne has been a teacher, researcher and administrator at Michigan State University for 35 years. His retirement this semester will mark the end of an era for the university and for the turfgrass management program he spent two decades establishing there. The program, which has graduated more than 800 students, has earned quite a reputation, along with its founder.

After earning bachelor's and master's degrees in Agronomy, Payne served five years as an Air Force officer during World War II. Upon his return, he enrolled at the University of Minnesota and in 1948 received a doctorate in genetics and plant breeding. After spending four years as an assistant and later associate professor at Purdue University, he joined the faculty at Michigan State as a full professor.

As chairman of the crop sciences department from 1952 to 1968, his interest in turfgrasses brought him into contact with golf course superintendents. It was through these experiences that Payne began to formulate his concept of professional education for superintendents. In 1968, that framework was put into action with the establishment of Michigan State's two-year turf management program. His emphasis was not only imparting the technical skills needed by modern superintendents but also on preparing young people to become professionals.

His involvement and concern with students has resulted in what one campus group has called "a highly professional quality that reflects positively on both (Payne) and Michigan State University." His personal interest in placing graduates in turf management positions has kept the program's placement rate hovering over near 100 percent for many years. Finally, Payne's work outside of the university as a writer, lecturer and consultant has taken his considerable skills to superintendents all over the nation.

Here is what some of them had to say about his contributions:

"Having just graduated From Michigan State, I can testify to his influence on young superintendents. Dr. Payne's insistence on continuing education, as well as participation in the national and local organizations is indicative of his professionalism."

"Dr. Payne is dedicated to the profession . . . he's a goodwill ambassador for golf course superintendents everywhere."

"His love for the game of golf and dedication to the breeding of superior turfgrasses have been contributing factors for many of the advances golf course maintenance has realized in the past 20 years."

"Lost among all his other accomplishments is the fine leaf fescue breeding program Dr. Payne has conducted for many years . . . also, through his leadership, an antique golf turf equipment restoration program was initiated at MSU."

The other recipients of the DSA were Dr. Jack Butler, William B. Davis and Eberhard Steinger, CGCS.



(L to R) Dr. Ken Payne, R.T. Jones, Gerry Faubel and Ted Woehrle looking over their shoulders.



Gerry Faubel and Dr. Payne congratulating the "Squire" Gene Sarazen - this years recipient of the "Old Tom Morris Award".



Ed Steiniger being congratulated by "Doc" Payne. They both won the Distinguished Service Award of GCSAA.

EMBARK TIMING

EMBARK

Annual bluegrass goes through a period of prolific seed head production in mid May to early June. During this time of prolific seed production, root growth ceases and more than 70 percent of the root system dies. This usually lasts for 3 to 4 weeks. Then root growth begins again as the plant returns to a vegetative stage.

The problem is that annual bluegrass plants have only 2 to 3 weeks in which to establish a good root system before the warm weather of summer arrives and all cool season grasses begin to undergo high temperature growth stoppage. When this occurs, root growth slows and roots become shorter. The cool season species that do not go through seed head production continue to develop deep, well-developed root systems during this period and are better able to survive the summer stress period.

The plant growth regulator (PGR) Embark inhibits seed head formation in addition to vegetative growth. By inhibiting annual bluegrass seed head formation, the roots remain active and continue to develop during the spring, producing a stronger, healthier plant that is better able to withstand the summer

stress period.

Timing is critical for maximum seed head reduction. Apply Embark when 50 degree-days have accumulated using a 50 degree F base. This figure is arrived at by taking the sum of the high and low temperature of the day and dividing by two. For example-

High temperature	64°F
Low temperature	40°F
Total	104°F
Divided by 2	52°F
Degree days accumulated	2

In the example 52°F is two degrees above the 50 degree F. base, therefore, 2 degree-days have been accumulated. This calculation is done every day after the average base temperature of 50°F or above is first reached. No degree-days are subtracted for days when the average of the high and the low temperature is less than 50°F.

An accumulation of 50 degree-days is the optimum time to apply Embark for maximum seed head suppression. It is not always possible to apply Embark on the exact day 50 degree-days are accumu-

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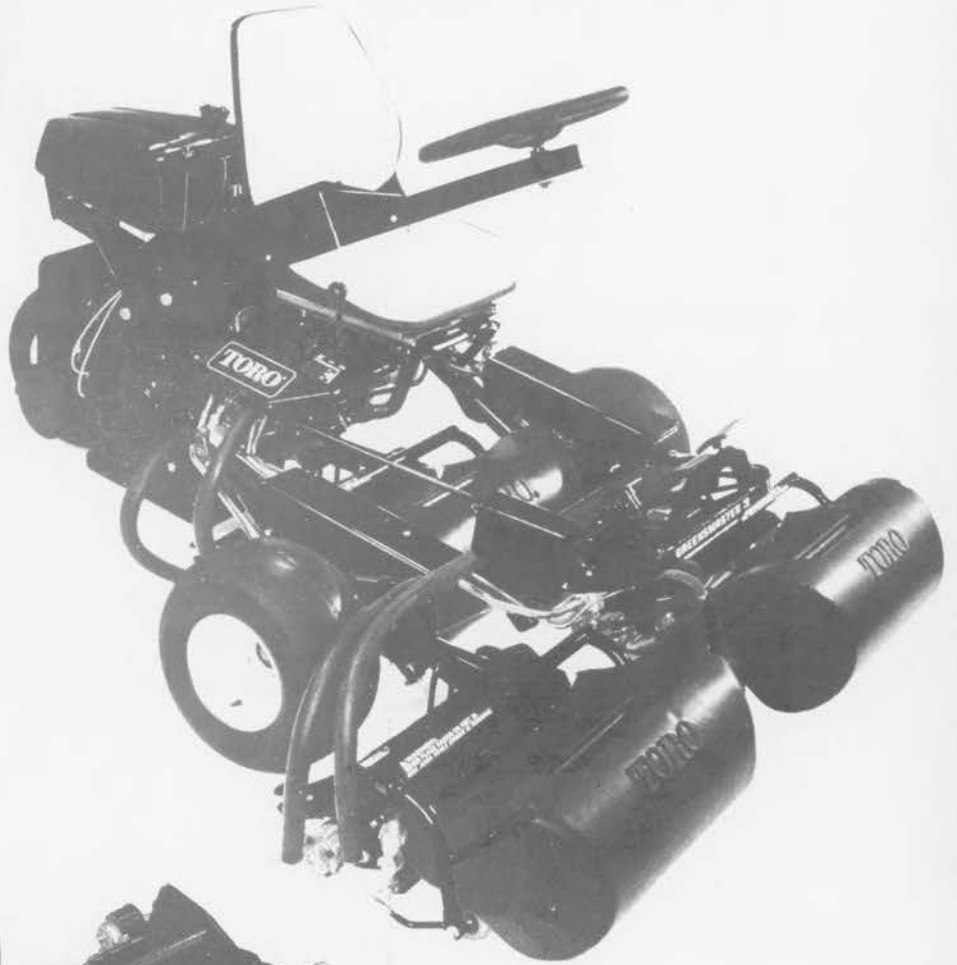
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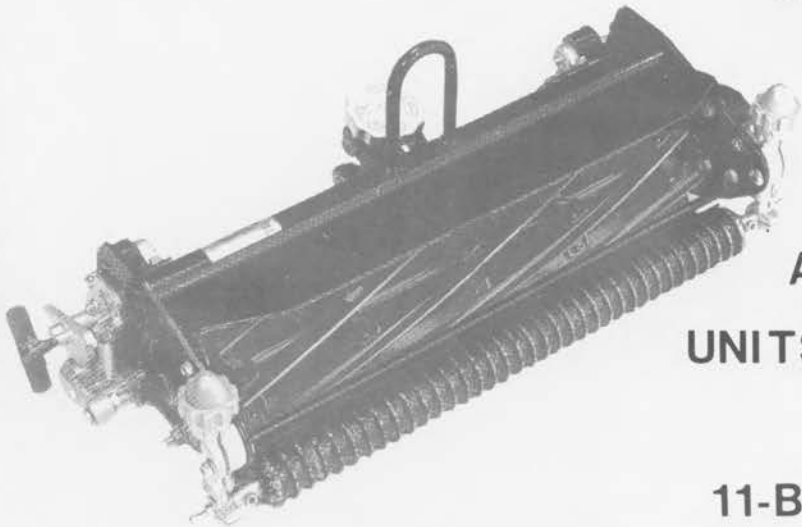
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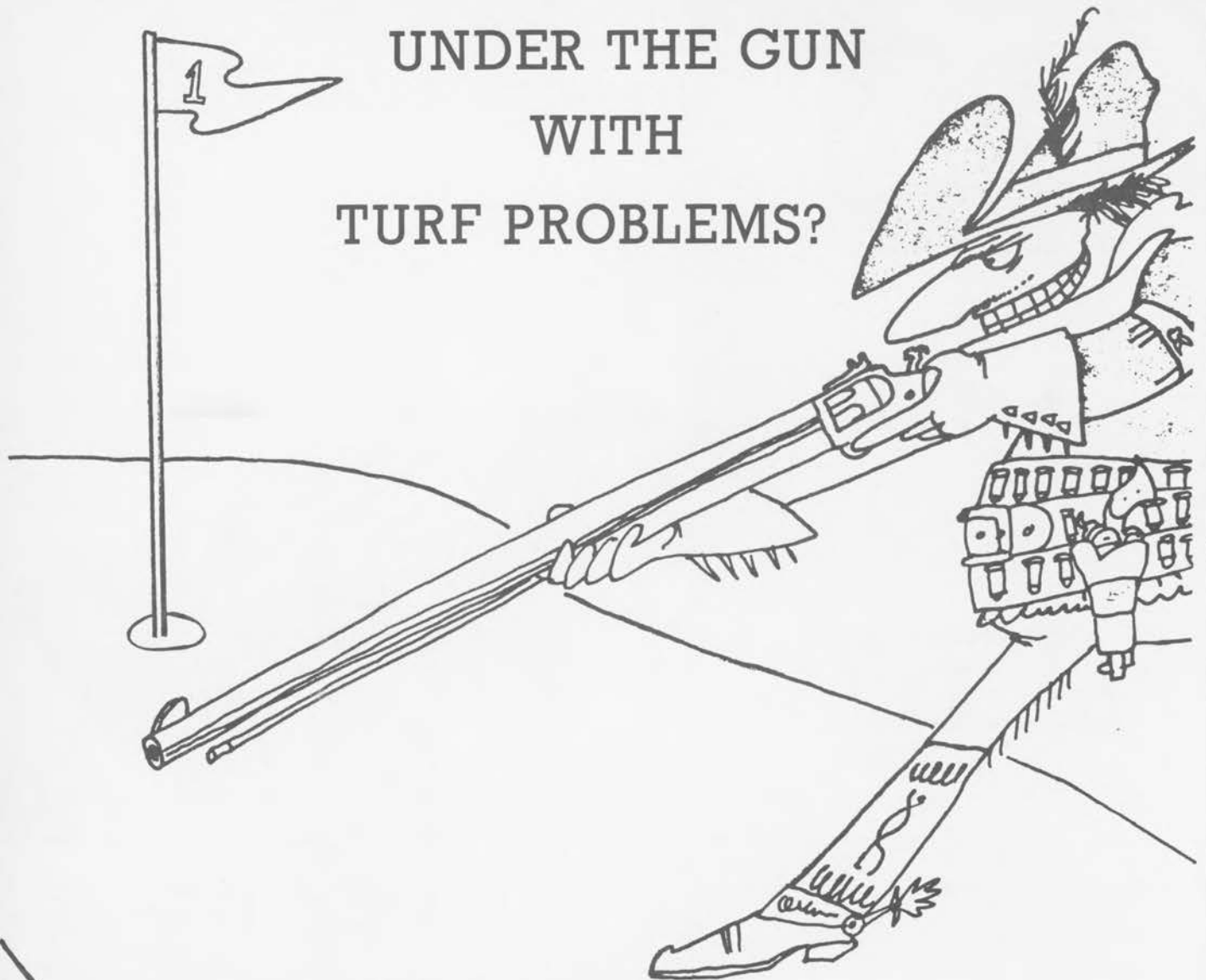
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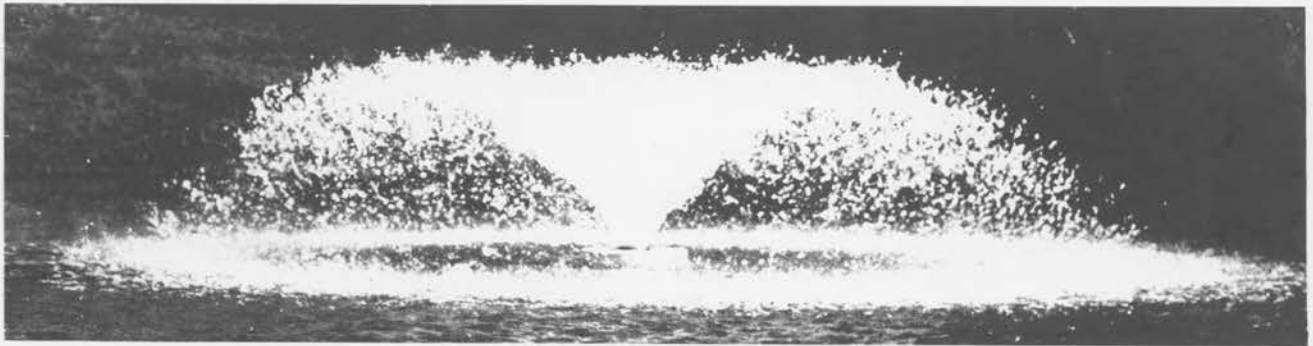
Ernie Hodas (center) of Century Rain-Aid in Madison Heights and Hunter Industries founders Ed and Frances.

MADISON HEIGHTS, MI - Ernie Hodas, president of Century Rain Aid, received awards as a "Top 20" regional distributor of Hunter Industries irrigation products and as one of the top five distributors by Richdel Turf Division of Garden America.

Awards were made at national sales meetings in San Diego Reno, NV.

Hunter founders Ed and Frances Hunter presented Hodas a plaque recognizing Century's outstanding sales and marketing achievements.

Richdel President James Featherstone presented Hodas a cup recognizing Century Rain Aid of Florida for outstanding sales performance and market share growth.



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Twice a day on a digital clock all four numerals are the same. What are these times?

Answer 1

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P.M. -- : --

Answer 11:11

Question 2

Once a year on a digital calendar all four numerals are the same. What is this date?

Answer 2

Date -- - --

Answer 11-11

Evaluation:

Honesty.

If both questions are answered correctly and the applicant didn't cheat by turning the test upside down, honesty is evident.

Vision.

If the answers were obtained by reading upside down and backwards, they must have good vision.

Intelligence.

To read that well requires a fair degree of intelligence. If they scored 100% and did not read the answers or resort to the computer they are above average.

Character.

If a little smile developed on the applicants face a sense of humor is present. This might be a nice person to have around.

On Apologizing

I know a young man whose father taught him to never apologize. He also taught him to never do anything that called for an apology.

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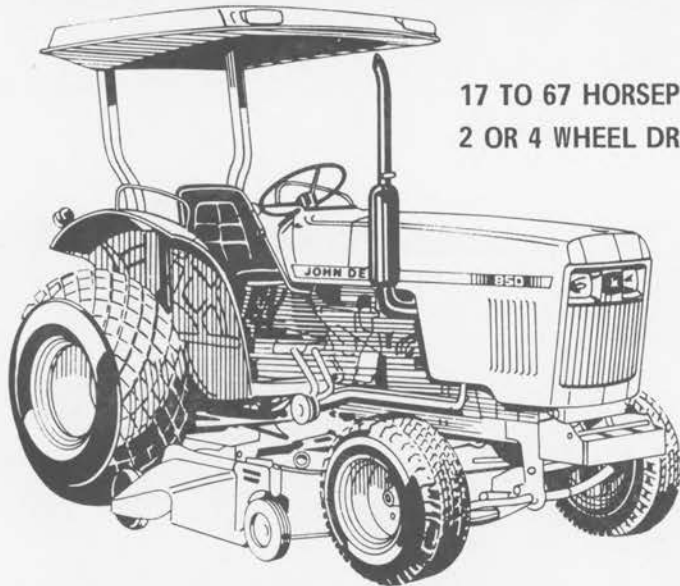
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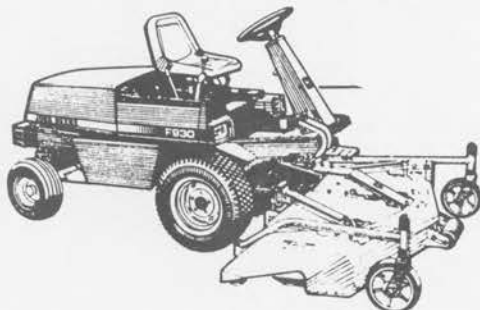
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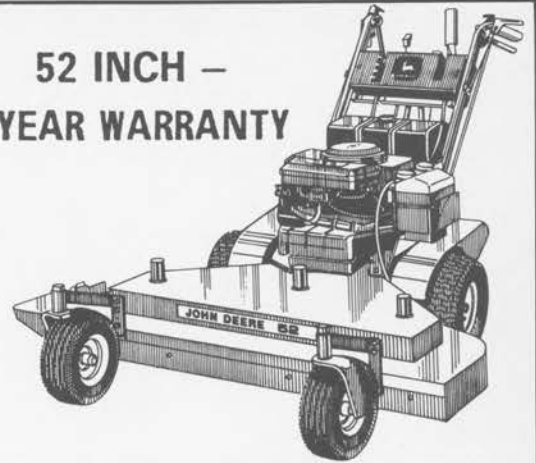
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HOUSTON - February 1-8, 1988



Gerry Faubel, GCSAA Director, right, interviewing Robert Trent Jones.

Kathy Copley, Editor, **Grounds Maintenance**, presenting Dr. Jim Beard of Texas A & M with the "Turf Master Award". Jim's wife, Harriet looks on.



"Doc Payne with former students - (L to R) Mike Garvele, Supt. Palo Alto Hills C.C., Palo Alto, CA; Dr. Ken Payne, retiring Turfgrass Coordinator, MSU; Clint Overn, CGCS Royal Scot G.C., Lansing, MI; and Paul Dushane, Supt. Wolverine G.C., Mt. Clemens, MI.

The friendly competitors.





Tom Mascaro "Inventor" in his new go-cart surrounded by friends, Gordy Witteveen, Supt. Board of Trade/Metro Toronto, unidentified friend; and Dr. Paul Rieke, MSU.



Gene Sarazen at Press Conference before accepting "Old Tom Morris Award".



Kevin Dushane, Supt. Bloomfield C.C., Bloomfield, MI; Dr. Joe Vargas, MSU; and Karl Danneberger, OSU.

John A. Segui, CGCS, Berwyn, Pennsylvania, was elected president of the Golf Course Superintendents Association of America (GCSAA) during the association's 59th International Golf Course Conference and Show held in Houston, Texas, on February 1-8. Segui succeeds Donald E. Hearn, CGCS, Weston CC, Massachusetts, who as immediate past president will continue to serve for a year as a director.

Dennis D. Lyon, City of Aurora Parks Department in Colorado, was elected vice president. Re-elected as a director and appointed secretary/treasurer was Gerald L. Faubel, CGCS, Saginaw CC in Michigan. Also re-elected as a director was William R. Roberts, CGCS, golf course/grounds manager for Sentry-World (Sentry Insurance), Stevens Point, Wisconsin.

Elected as director for the first time was Joseph G. Baidy, CGCS, Acacia CC, Lyndhurst, Ohio.

Kenneth A. Sakai, CGCS, Sunnyvale GC in California, was appointed to serve Lyon's one year unexpired term as director. Stephen G. Cadenelli, CGCS, Metedeconk GC, Manasquan, New Jersey, and Randy Nichols, CGCS, Cherokee Town & CC, Dunwoody, Georgia, continue serving terms as directors.

Officers serve one-year terms, and directors are elected to two-year terms.

THE MAN IN THE GLASS

When you get what you want
In your struggle for self
And the world crowns you King for a day,
Go to a mirror
Take a look at yourself
. . . see what **that** man has to say.

For it isn't your father
or mother, or brother, or wife
Whose judgement on you must pass
The fellow whose verdict counts the most in your
life
Is the one staring back in the glass.

You can take Jack Horner
and chisel a plum,
And think "What a great guy am I!"
But the man in the glass says you're only a bum . . .
If you can't look him straight in the eye.

He's the fellow to please
Never mind the rest,
He's with you clear up to the end.
And you've passed your dangerous, difficult test
If the man in the glass is your friend.

You can walk through the world
Down the pathway of years,
And get pats on your back as you pass.
But your **final** reward will be heartaches and tears .

. . . if you cheat the man in the glass.

-Anonymous

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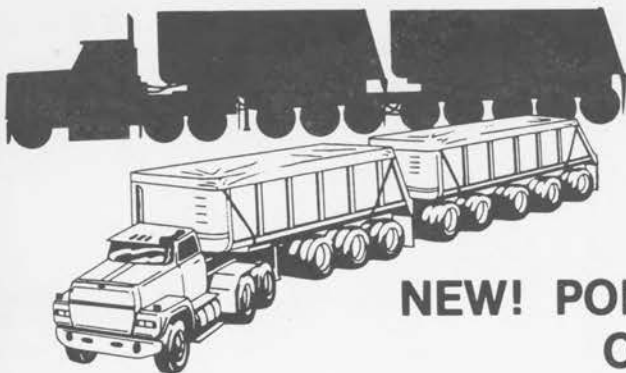
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WELL, ALMOST THE LAST WORD

By Ted Woehrle, Editor

No matter how hard we try to close the debate on "Black Layer", someone reopens the discussion with more remarks and findings.

At our recent GCSAA Conference, just concluded in Houston, Texas, we heard the latest hypotheses from a distinguished panel of experts that included:

Judith Ferguson Gockel, Agri-Systems of Texas, the soils expert.
Dr. Roy Goss, Washington State University, the Sulfur expert.
Dr. Clinton Hodges, Iowa State University, Dept. of Horticulture, the sand layer expert.
Dr. Robert Shearman, University of Nebraska, the water movement expert.
Dr. Tim Tiedje, Michigan State University, the microbiology expert.
Dr. Joe Vargas, Michigan State University, the plant pathology expert.

Judith Gockel impressed on the audience that good porous soil is the key to building a sound green; one that will support healthy turf. Techniques are available in the Laboratory to insure fail-proof soils. We should take advantage of these services. She felt that a properly constructed green should never produce anaerobic conditions because it would provide the proper water and air mixtures under even the most severe conditions of compaction. Obstructions to normal water movement in any soil will result in waterlogging of that soil, regardless of its nature.

Dr. Goss expressed his beliefs about the use of Sulfur in good turfgrass management. Sulfur is vital to plants and through many years of study he has found the element most helpful in suppressing several diseases and to some extent it often times will suppress *Poa Annua*. Very seldom has he observed the connection of Sulfur and anaerobic conditions. Through questioning by the audience at the end of the presentation, it was agreed that Sulfur by-products are found in the black layer, but he didn't feel that Sulfur causes black layer.

CONTINUED PAGE 23

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Tuesday, January 19, at the Michigan Turfgrass Conference, M.T.F. held their annual meeting with the election of new Directors. Four Directors were elected to three year terms:

Kurt Thuemmel was elected representing Western Michigan G.C.S.A.

Jim Bogart was elected as representative of Commercial Turfgrass Suppliers.

Jeff Gorney was elected as an "At Large" candidate.

Tom Mason was also elected as an "At Large" candidate.

At the Board Meeting following the Conference, Kurt Thuemmel was elected President, Tom Mason Vice-President and Jeff Gorney was elected Treasurer for one year. Others on the M.T.F. Board are:

Gordon LaFontaine, Executive Secretary, Lawn Equipment, Novi.

Hank DeVries, DeVries Beautiful Lawns, Hudsonville.

Tim Doppel, Atwood Lawn Spray, Sterling Heights
Charles Gaige, Lakelands Golf & Country Club, Brighton

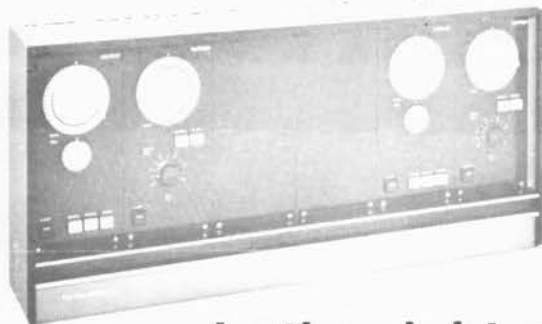
Ron Julip, Brown City Sod & Produce, Brown City
Kurt Kraly, Wilkie Turf Equipment, Davisburg
David Longfield, Garland Golf Course, West Branch
Jon Maddern, City of Farmington Hills
Fritz McMullen, Forest Lake Country Club, Bloomfield Hills

Jim Bogart, Turfgrass, Inc., Rockfort

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WELL, ALMOST, CONT.

Dr. Clint Hodges of Iowa State felt that algae and their mucilaginous by-products cause poor water infiltration as the layer filters down through the porous sandy soils that are being used in today's turfgrass management on many greens. In the case of the sand topdressing on the older dense soils of established greens, the algae layer will usually form at the interface between the sand and the soil. This formed layer would then cause the anaerobic condition and eventually the black layer; the by-product of the anaerobic condition.

Dr. Robert Shearman of Nebraska noted that any interruption in water movement, whether caused by layering, thatch, poor drainage (subsurface), will likely cause anaerobic conditions followed by the black layer.

Dr. Tim Tiedge of Michigan State perhaps shed the most light on the subject. He has found that there are four criteria necessary for the formation of a black layer:

1. There must be an anaerobic condition present.
2. There must be an Electron Donor (food supply).
3. Sulfur compounds must be present. They are to some degree in all soils.
4. There must be Sulfur Reducing Bacteria present.

If any one of these criterion are absent you cannot have a black layer.

Dr. Vargas of Michigan State feels very strongly that Sulfur applications can cause anaerobic conditions because Oxygen is utilized when Sulfur is converted or reduced to Sulfates. This can deplete the Oxygen in the soil thus becoming responsible for the black layer.

Taking all of the information available today we can summarize the black layer problem as one that is interconnected with all of the above observations made by the panel of experts.

Of all the items that we can control the easiest and quickest, locating and correcting the water drainage problem would appear to be it. Improve the aeration with deep aeration and fill the holes with sand to insure good water and air penetration. Once Oxygen is reintroduced into the system many of the reactions will be reversed and the black layer will disappear.

Any high moisture and low Oxygen condition should be avoided. When Oxygen is limited, Iron, Sulfur and Manganese are converted to their reduced states and are more soluble and more available to the plants - some of these products can be harmful to the plant - ferrous oxide, Hydrogen Sulfide and Manganese oxide.

Anaerobic soils promote bacteria which can produce organic toxins and methane gas from the breakdown of organic matter.

A wet soil, whether caused by nature or the water applied artificially by man, causes reduced Oxygen and in turn cause the black layer.

If you are still confused, I would suggest reading a

CONTINUED NEXT PAGE

WELL, ALMOST, CONT.

good book on soils. It is entitled, "SOILS, an Introduction to Soils and Plant Growth", by Roy L. Donahue, John C. Shickluna and Lynn S. Robertson, Professors of Soil Science at Michigan State University East Lansing, Michigan. It is available through the University Book Store at MSU.

In reading this book it becomes very clear that the black layer problem is a soils problem, not a chemical problem. You have to control the water, locate and eliminate the drainage barrier and provide additional aeration. Drainage problems are usually caused by poor initial construction or poor soil mixes (the word SOIL, as I use it, means any material and combinations of materials used to construct greens). Sandy soils as we now use them (often called USGA greens even when they aren't) are just as guilty of producing black layer as regular soils because they aren't built and maintained properly.

Quite often the sand topdressing materials used are too dense and they restrict water and air movement at the surface. This, coupled with poor subsurface drainage, is usually enough to restrict Oxygen. When Oxygen is already limited, it doesn't take much to cause the ideal conditions for the surplus elements that might be present such as Iron, Sulfur and Manganese to use up the remaining low level of Oxygen and cause the black layer.

Remember, the primary problem is excess of water and the secondary problem is a chemical one caused by the shortage of Oxygen. Avoid any barriers to water movement. Any layer of courser or finer texture can cause a layer where water movement is curtailed. Sometimes a barrier of excess root growth, caused during a stimulated grow-in-period, is enough to cause a barrier.

Use that aerifier!

DUTCH FIND TREATMENT FOR DUTCH ELM DISEASE

Scientists at the Institute of Applied Chemistry in Zeist, Holland, have found a way to treat Dutch elm disease.

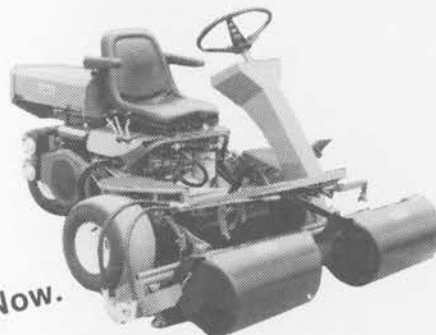
They have found that injecting a tree with fenpropimorph, a fungicide also used to treat mildew on cereal crops, will block the spread of the fungus that causes the disease. Fenpropimorph has been proven harmless to Dutch elms, but prevents the fungus from giving off spores that spread the disease.

It can be used either preventatively or curatively. Used preventatively, it has been 100 percent effective.

Treatments of this kind are labor-intensive and, thus, expensive. But researchers at the Institute say a Dutch elm "vaccine" could be on the market as early as next year.

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ANOTHER WORD, CONT.

coming on the market. The best way to stop the layers from being formed in the first place is to insist on strict adherence to USGA specs, and possibly a tightening of those. The problem is, we don't know exactly what constitutes a layer in the sense of creating conditions conducive to filtering out sulfur, iron, algae, and everything else we put on the surface as water moves these elements through the profile. Judith Gockel says it don't take much! Good drainage is only as good as the medium that passes the water down to it.

We disagree that all of the written material presented and educational sessions concerning black layer give no answers. Just the opposite for us. When our article appeared in GCM in November, 1986, we really had no answers. Since that time, each piece of information we saw or heard helped us better understand what was happening and how to deal with it more effectively. The greens on "The Bear" were in excellent condition all season this past year and, we were told, continued thus through closing in November. These are the same greens that were severely hurting just one year before. We certainly do not agree that "Enough is Enough" or that now is the time for "The Last Word on "Black Layer"". On the contrary, continued interest in this problem, the causes and solutions, is evidenced by the support given by the various turf association, GCSAA, various universities, and the trade media. In a recent session at the Illinois Turf Conference, there were over 75 interested managers listening to three presentations on the subject for almost three hours. No one said they were more confused at the end of the talks.

As with all professional turf managers, we take great pride in the job we have done at Grand Traverse Resort, and feel we have proven ourselves capable managers over the years by providing playing conditions equal to or exceeding the expectations of our guests. Certainly, we have many testimonials to that effect. We have a great deal of respect for our fellow professionals, especially those considered the leaders of our industry. We believe that this article meant no harm to our reputation, but was based on inaccurate observations and misinformation. We respect the right of the author to express his opinion on this controversial subject, and welcome the opportunity to do the same. Black layers, or any other serious problem facing the industry, can generate healthy, spirited debates among turf professionals. That is how solutions are found. May they continue unabated.

EMBARK TIMING, CONT.

lated. If this can't be done, it is better to apply Embark on the 40-degree-day side of 50 degree-days rather than on the 60-degree-day side.

Embark also suppresses the growth of annual bluegrass for about 6 weeks. This reduces the number of mowings during the spring, when the superintendent usually has a smaller crew and when heavy rains often make fairways so soggy that it is impossible to drive mowing equipment on them.



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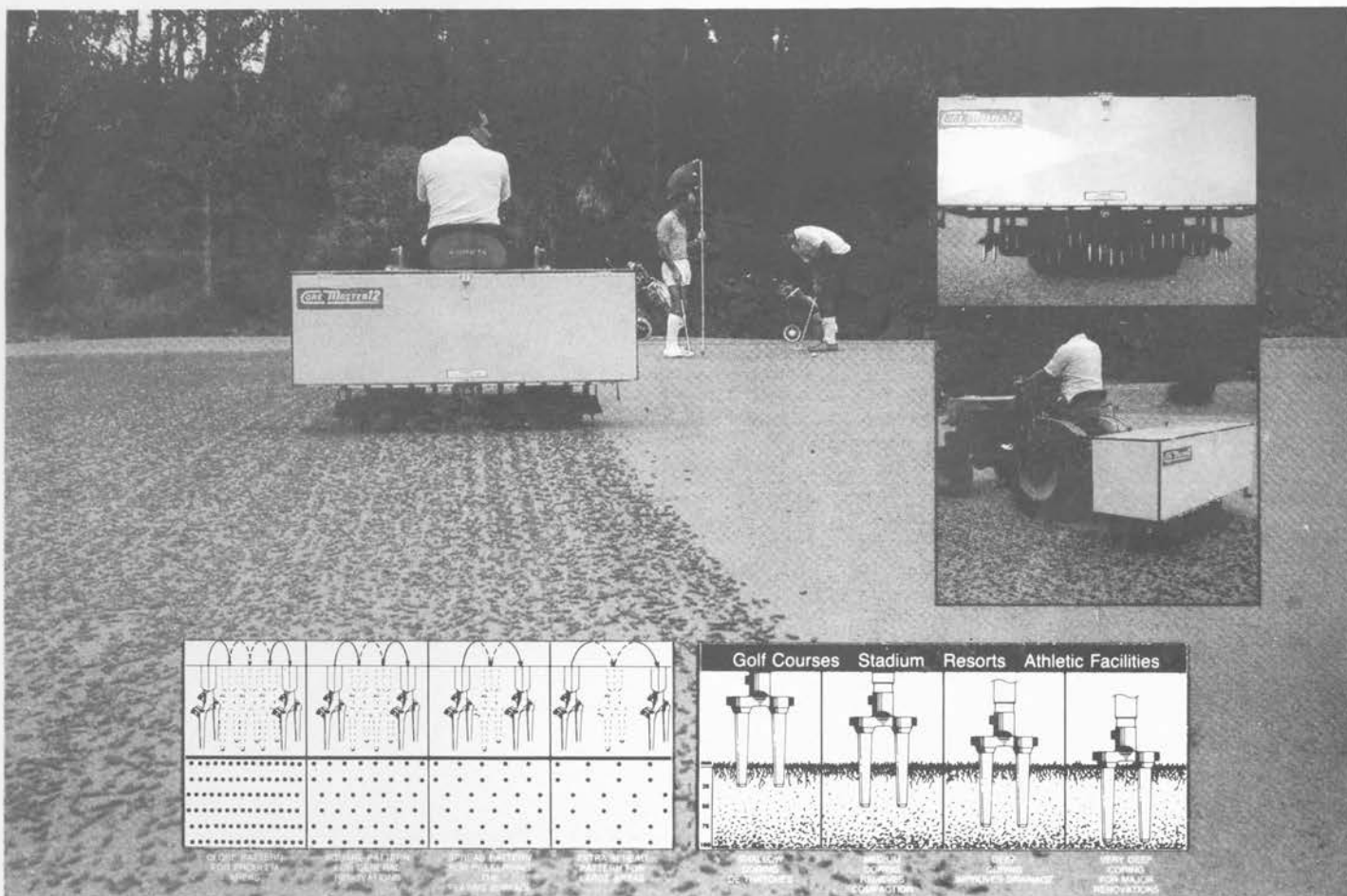
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