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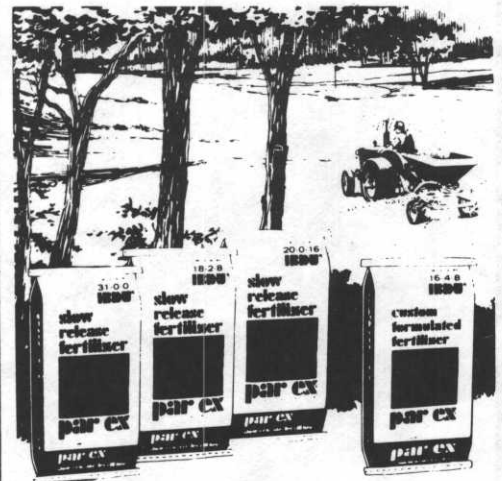
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HOLE NOTES

Official publication of the MINNESOTA
GOLF COURSE SUPERINTENDENTS' ASSOCIATION.

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FROM THE PRESIDENT'S DESK

JOHN NYLUND

March has come in unlike a lion and many superintendents are pleased with the winter past. If conditions remain pleasant many courses could open before this article goes to print.

This time of year superintendents are busy purchasing equipment for the coming golf season along with hiring personnel, buying fertilizer and chemicals, and reminding people to stay off the course. The interest in golf is growing every year which will undoubtedly make for another banner year in 1983.

Our March U.S.G.A. Conference was a huge success. Many golf course personnel were on hand for a very informative day. Our thanks to Midland Hills Country Club, Stanley Zontek and the U.S.G.A. for a fine seminar.

If you have not received a mailing from the Research Committee requesting contributions for the 1983 program, you will in the next few days. I request your careful attention to this and make sure it gets into the right hands at your golf club. If each superintendent makes a real effort to get his club to contribute the amount suggested on the invoice enclosed with the mailing, we will all profit in the long run from the knowledge gained by the Research Program.

On April 12 we will be at Mankato Country Club with Host Superintendent Boots Fuller. Boots has always provided this association with a fine day at his club so mark your calendars for this meeting. Hopefully, the weather will permit our first golf outing of the year.

In closing I believe we have a great spring and summer schedule of meetings so please pre-register and plan to attend.

PYTHIUM AND SAND TOPDRESSING

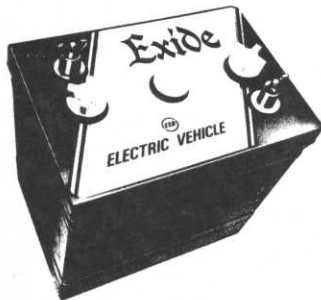
Increasing Evidence for Pythium Induced Root Dysfunction of Creeping Bentgrass Grown in High Sand Content Mixes

CLINTON F. HODGES, Department of Horticulture
Iowa State University, Ames, Iowa

The presentation made by me at the 1981 M.G.C.S.A. annual conference implicated Pythium in a root dysfunction of creeping bentgrass grown on reconstructed high sand content greens. The disease in question killed grass very rapidly and in a manner typical of Pythium "cottony blight." Examination of diseased plants, however, failed to yield Pythium or any other pathogen from above ground portions of the plant. Pythium was found throughout the root system of diseased plants. It is believed that when a green on an old golf course is renovated to sand, Pythium may infest the sand from the collar and apron soil of the old green. The sand probably offers little microbiological competition for the Pythium and increased levels of irrigation and fertilization of sand greens may further promote the Pythium. There also is some evidence that more root mechanical damage may occur in sand than in soil; this could contribute to Pythium infection. This problem has not been observed in the roots of plants grown in traditional soil mixes.

To date, we have isolated four species of Pythium from the roots of creeping bentgrass associated with rapid death of infected plants. We are currently in the process of identifying the isolates to the species level and testing them for pathogenicity. It has been possible to infect roots in greenhouse studies and in some cases reduce the rate of growth of infected plants. We have not been able to kill inoculated plants. Our present observations suggest that the Pythium's in question may infect the roots and co-exist with the plant with minimal damage under mild growing conditions. It may necessitate some form of environmental or cultural stress before death occurs. There are two outstanding problems for the superintendent relative to this disease. These are diagnosis and control. The rapid death of infected plants appears to be due to a foliar pathogen. However, examination

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of dying leaves usually fails to yield any pathogens and often times even saprophytic organisms are not present. When the root systems are examined they usually appear normal in size and color. Because of this it is assumed that root pathogens are not present. These normal appearing roots can, however, be severely infected by Pythium. The Pythium's associated with this problem do not cause a rot and the degree of discoloration may not be detectible with the naked eye. We have found that when we properly incubate what appears to be a healthy root from these diseased plants, Pythium will grow from the root within six hours. We are suspicious that these Pythium's damage plants by interfering with water relations, not by rotting.

Control of this problem in the field remains elusive. Intense aerification followed by application of Pythium specific fungicides into the aerifier holes may slow the disease. There is some indication that wetting agents used in conjunction with the fungicides may be beneficial. It also appears that following renovation of a green the first time the disease strikes it is

continued on Page 5

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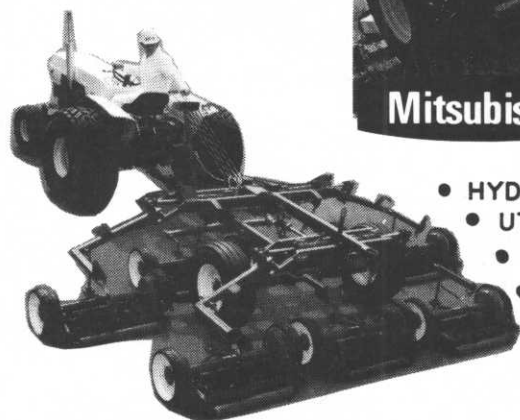


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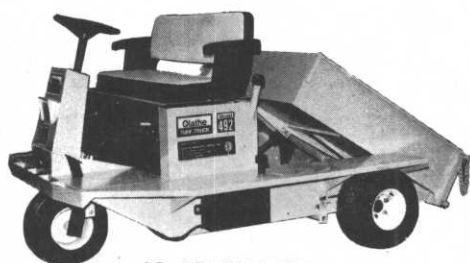
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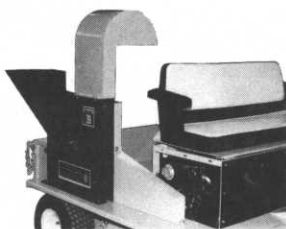
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most severe; each subsequent year it becomes less severe.

Our primary research objectives for the next 2-3 years will be as follows: 1) Continue to collect and identify Pythium species associated with roots. 2) Determine pathogenicity of the Pythium species and the conditions necessary for injury or death to occur. 3) Determine the nature of the pathogenicity; i.e., in that the roots are not rotted, how are the plants ultimately killed. 4) Examine approaches to control.

GOULD SERVICE DEPARTMENT HONORED

For the second consecutive year the service department of St. Paul's R. L. Gould Co. is the recipient of a national distinguished service award presented by the Jacobsen division of Textron. This special recognition goes to a service department which they feel has excelled in all the various aspects that comprise the efficiency of a service facility.

The award was presented at a special meeting in conjunction with the National Golf Course Superintendents' meeting recently held in Atlanta. The Gould department was noted for an exceptional ability at handling problems, even those of rare occurrence, and for contributing to product improvement by early recognition of a possible difficulty. The department distinguished itself equally in the matter of customer relationships.

Kirby Burmeister who has been with the Gould service division since 1973 has had a long standing reputation as one of our areas most knowledgeable and efficient equipment "doctors". It is pleasing to see that he and his colleagues in the service end of things at Gould's are receiving even national recognition.

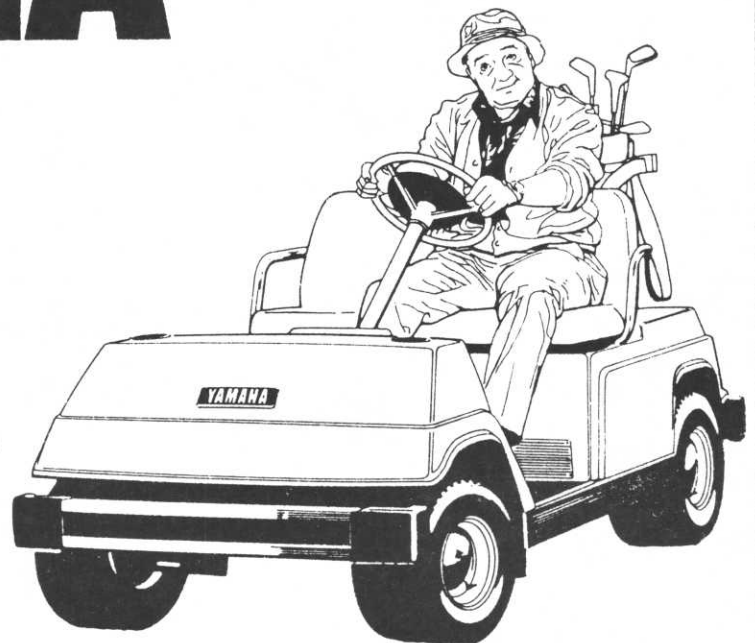
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When I was approached to write an article about some phase of golf course construction for this issue, the one thing that stood out in my mind was the large number of questions I had which had no definitive answers. As construction proceeds at the Woodmore Golf Club I will try to relate some of the decisions which we have made in future issues of HOLES NOTES.

WHO'S GOT SOME ANSWERS?

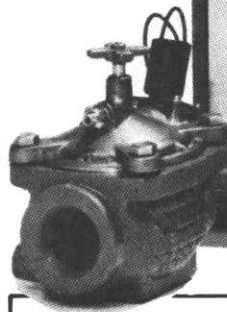
by DENNIS HENDRICKSON, Superintendent
Woodmore Golf Club

Do you know how many difficult decisions there are to be made when a new golf course is built? The long term effect for these decisions is staggering, isn't it? What is the life expectancy of a green? An irrigation system? A maintenance building? A golf course? How many golfers are going to praise or complain about decisions which are now made? Are they going to come back and play the course repeatedly because they enjoy playing it? How many superintendents are going to benefit or be troubled by things done now in construction? Are we building in unnecessary maintenance problems? Which increased expenditures made now to increase efficiency and lower maintenance costs in the future will pay for themselves? What can I project the maintenance budget to be next year? Five years from now? Twenty years from now?

If you were to build a green today, how would you do it? Would you use U.S.G.A. specifications? Would you build a "sandy" green? Which sand is appropriate? Is the cost of some of the uniform silica sands really worth it? Should I add a soil for increased Cation Exchange Capacity? If I use a uniform silica sand, am I defeating myself by adding
continued on Page 8



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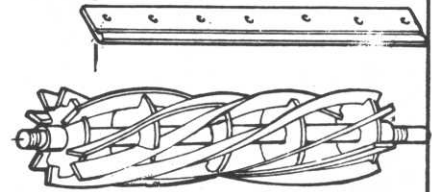
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soil and clogging it up? Should I recommend using northern peat or Sphagnum peat rather than a peat from a local source? What infiltration rate is acceptable and what will it be ten years from now? How can I keep the green from being too hard? Which grass variety will perform the best under the conditions we are expecting to have?

What about the irrigation system? What capacity do I need? What kind of a system will be the best for this golf course? Who will install it? What can I expect my maintenance costs to be? How much of the rough should be watered? Do I want to make provisions for adding to the system later? What kind of control do I want on the system?

In today's trend toward bentgrass fairways should we use a bent? If so, which one? What sort of renovation program will we need? What will be the long term maintenance cost as compared with *Poa annua*? Will I have problems with winter injury on bent? If I use a bluegrass, which mixture would be best? Can I maintain a bluegrass under the type of conditions the golfer expects to have and keep *Poa annua* out?

Are there any important questions that I have not asked myself?

MEMBERSHIP REPORT

New members accepted at Board Meeting on March 8, 1983:

Steve Sheppard, Class A, Mocassin Creek, Aberdeen, S.D.; Dean Heymans, Class A, Hillsvie G.C., Pierre, S.D.; Bruce Johnson, Class A, Clifton Highlands G.C., Prescott, Wisc.; Brian Lein, Class BII, Rich Acres, Richfield; Paul S. Fjare, Class F, Brauer and Associates, Eden Prairie; Jim Lester, Class F, Egebergs Golf Cars, Minneapolis.

Reclassifications:

Mary Sisson, Class BII - Mary is the first woman superintendent in the state of Minnesota, as far as the Board knows. Mary will be at the Ironwood Golf Club in Mankato. Gregory Senst, Class A, Cannon Golf Club; Jeff Bond, Class BII, St. Cloud C.C.; Marty Matson, Class D, Minikahda Club; Joe Ganske, Class A, Spooner Golf Club; Daryl Ahlgren, Class B, Columbia Golf Club.



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EDITOR'S CORNER

By Boots Fuller

Editorial Chairman - MGCSA

The warm weather we enjoyed during the first week of March was welcome relief for those who had concerns over ice buildup on greens. Most of the snow melted and the unseasonable temperatures even had some wondering about early openings on our golf courses.

However, the second week of March brought us all back to what Minnesotans should take for granted - March is still winter. I have been assured, though, that we'll be open for golf on April 11 when the Mankato Golf Club will host all the members of our organization at the regular monthly meeting for the third consecutive year. The lunch fee is \$7.00 and don't forget to pre-register. Remember the Board has determined a higher price for registration at the door. Kaye Corporation of Mankato will be showing the Ransom Line of equipment so make your plans to attend.

Response to my request for contributions to the HOLE NOTES is astounding. We really are trying to make this our newsletter so don't wait for me to contact you. If you have some informative data about your course, please contact me. Remember, my list of potential writers from our talented organization is almost endless so I'll be looking for you if you just happen to miss me.

At the April meeting the Board will make note of what I believe to be a first in Minnesota. My No. 2 Assistant, Mary Sisson, becomes the Superintendent at Ironwood Golf Club in Mankato. This is a 9-Hole short course and I'm sure she'll do a creditable job.

continued on Page 10



MINNESOTA FRAC SAND COMPANY is now offering two grades of highly recommended silica sand for building greens and tees, as well as for topdressing and sand traps, at their Jordan Plant. This sand has been tested and approved by Dr. Don Taylor of the University of Wisconsin, and tests have also been obtained from Texas A & M University from Dr. K.W. Brown. The particle size analysis of our two products is shown below.

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If anyone is aware of another female superintendent who has been a member of our association, please let me know. Otherwise, this will be an exciting "first" for us.

I had occasion to talk to two of my very good friends at Midland Hills on March 8 where the U.S.G.A. hosted a superb seminar. Seems as if both Jim Wodash and Dennis Schoenfeldt really put their golf course programs to rest for the winter. They have managed to wile away most of the winter ice fishing. The luck of the fisherman wasn't all that great, I am told, but it certainly was a good past time for the off season.

I also talked to Bernie Zimmer of Whitefish and he is looking forward to the arrival of our association on June 6. Before he hosts us, though, Gary Peterson will show us Sundance on May 9. The picnic is set for Baker Park on July 11 and will be hosted by our illustrious treasurer, Steven Young. Be sure to make plans.

Warren Rebholz has gotten our M.G.C.S.A. some publicity in the G.C.S.A.A.'s February issue of GOLF COURSE MANAGEMENT. On Page 4 they are running a series of "unforgettable holes" and Warren has contributed some which will be published at various times. Exposure of this type is always welcomed.

Next month should be a very informative one for the HOLE NOTES. Sam Monson will be giving us the lowdown on the Viking operation he manages in Eden Prairie. Kevin Benson will also provide us with information concerning his course at Edenvale. Watch for these articles. Future contributions will be coming from other talented people such as Dan Hanson, Mike Klatter, Steven Young and Jim Nicol. We are also going to hear from some of our Wisconsin friends such as John Granholt of Eau Claire and Tom Fisher of Voyager Village near Webster. We will also be noting an article from Minnesota Toro on our new Associates' Corner as well as some research information. The list goes on.

For those of you who have things to share, get in line. The rush is on. We are going to have a first class newsletter for a first class organization. See you in Mankato on April 11.

**We're seen in all the
right places.**



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