

from only two golf courses in northern Wisconsin zone. Results presented here are based on the number of isolates tested and the locations of golf courses sampled. Future research using isolates from more golf courses throughout Wisconsin is required for the confirmation of our findings. Studies on the pathogenicity of three genetically distinct groups within *T. ishikariensis* species and the efficacy of fungicides in controlling them are also needed both in *vitro* and in field experiment.

The future confirmed information will help golf course superintendents and other people facing snow mold problems to choose the correct fungicides in the proper amounts depending on the different levels of pathogenicity found in the *T. ishikariensis* isolates collected from different parts of Wisconsin and their geographical location.

As we can see from the research described in Figure 3, it is clearer how DNA marker techniques can be utilized to answer some difficult problems which have not been easily tackled by conventional methods. Typically DNA marker technology is more accurate and efficient than conventional methods. In the future, I will present other examples of DNA marker technology to illustrate its application.

#### References cited

- Arsvoll, K. and J.D. Smith. 1978. *Typhula ishikariensis* and its varieties, var. *idahoensis* comb. Nov. and var. *canadensis* var. nov. Can J. Bot. 56:348-364.
- Matsumoto, N. and A. Tajimi. 1993. Interfertility in *Typhula ishikariensis* biotype A. Trans. Mycol. Soc. Jpn. 34:209-213.
- Matsumoto, N., T. Sato, and T. Araki. 1982. Biotype differentiation in the *Typhula ishikariensis* complex and allopatry in Hokkaido. Ann. Phytopath. Soc. Jpn. 48:275-280.
- Matsumoto, N., A.M. Tronsmo, and T. Shimanuki. 1996. Genetic and biological characteristics of *Typhula ishikariensis* isolates from Norway. Europ. J. Plant Path. 102:431-439.
- Millett, S. 1999. Distribution, biological and molecular characterization, and aggressiveness of *Typhula* snow molds of Wisconsin golf courses. Ph.D. Dissertation, Univ. Wisconsin, Madison, WI.
- Welsh, J. and M. McClelland. 1990. Fingerprinting genomes using PCR with arbitrary primers. Nucleic Acids Res. 18:7213-7218.
- Williams, J.G.K., A.R. Kubelik, K.J. Rafalski, and S.V. Tingey. 1990. DNA polymorphisms amplified by arbitrary primers are useful as genetic markers. Nucleic Acids Res. 18:6531-6535.

#### Glossary


**PCR:** a rapid procedure for in vitro enzymatic amplification of a specific segment of DNA. DNA to be amplified is denatured by heating the sample. In the presence

of DNA polymerase and excess deoxynucleotide triphosphate, oligonucleotides that hybridize specifically to the target sequence can prime new DNA synthesis. The first cycle is characterized by a product of indeterminate length; however, the second cycle produces the discrete "short product" which accumulates exponentially with each successive round of amplification. This can lead to the many million-fold amplification of the discrete fragment over the course of 20 to 30 cycles.

**Locus:** any genetically defined site, i.e., a gene, a part of a gene, or a DNA sequence with a regulatory role. (Glossary of Genetics by Rieger R., A. Michaelis, and M.M. Green)

**Pathogenicity:** the capability of a pathogen to cause disease. (From Plant Pathology by G. Agrios)

**Sclerotium:** a compact mass of hyphae with or without host tissue, usually with a darkened rind, and capable of surviving under unfavorable environmental conditions. (From Plant Pathology by G. Agrios)

**Virulence:** the degree of pathogenicity of given pathogen. (From Plant Pathology by G. Agrios) 



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# PDI - Something To Think About

By David Pulley, Golf Course Superintendent, Pine Valley Country Club

*Editor's Note: The PDI proposal and attending issues put forth by a GCSAA committee needs lots of understanding and discussion before any decisions are made. To really understand those issues and ramifications, opinions other than those in Lawrence, Kansas are essential, even critical. One of the best and most carefully considered pieces I have read appeared in Volume 36, Number 2 of CAROLINAS GREEN, official publication of the Carolinas Golf Course Superintendents Association. It*

*ranks with Al Jansen's article in the last issue of THE GRASS ROOTS. Its author, David Pulley, happily granted permission to reprint his words. So did the editor of CAROLINAS GREEN, Chuck Borman. David is the superintendent at the Pine Valley Country Club in Wilmington, North Carolina.*

Under the guise of what has been named the Professional Development Initiative, the BOD of GCSAA is proposing to regulate who can be considered a Class A member of their association.

Background, experience, professionalism, integrity, work ethics and passion for the profession are not viable components for being considered a Class A superintendent. GCSAA will only consider a superintendent with a 4-year degree (in any field) or a two-year turf degree as a candidate for their new "branded" Class A status. Once Class A status is achieved, you will be allowed to remain Class A only if the new requirements are fulfilled every three years. If not fulfilled, for what ever reasons, you will no longer be considered

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Class A material and will be demoted back to Class B status. GCSAA will no longer promote all superintendent members; they will only promote their "branded" Class A superintendent and CGCS programs.

GCSAA is proposing that all current Class A members be grandfathered into the new "branded" Class A. They will only have to fulfill the new requirements to maintain their status. So, why worry about the requirements for entering Class A? Think it will not affect you? If you are unable financially to fulfill the requirement for CEUs and PDUs, you will be demoted to Class B, considered second rate and not worth marketing. GCSAA intends to inform employers that "branded" Class A and CGCS are the only superintendents that should be hired. Another concern is the requirement that you must be employed as a superintendent at the time of renewal. If you are not (for whatever reason), you may be demoted to Class B status. (This area is still not definite). You should also be aware that if, for any reason, a superintendent without the proper degree (no certificates allowed) loses the Class A status, he/she will not be allowed to return to Class A unless the proper degree is obtained by going back to school.

The most obvious objection to the degree requirement is the exclusion of many excellent superintendents who will never be considered equal, or even qualified for Class A status. The superintendent without a degree (or the proper degree), no matter how successful, or how many years of experience, will never be considered for Class A status. We know the value of experience in this profession and the importance of learning from each other. Why should it matter to GCSAA where or how superintendents acquire their knowledge? Be it from a formal

education or from "the school of hard knocks": knowledge is knowledge. I was fortunate to learn under three excellent superintendents: Paul Waycaster, Steve Sheets and Ray Avery. Thanks to these men, I was provided with the opportunity to succeed in this profession. There are others (without

degrees) that deserve the chance to succeed. This association has never excluded a superintendent from excelling and it should not start now.

Another requirement to qualify for Class A is mandatory self assessment. Superintendents will be required to assess their compe-



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tencies and at least "meet" the established minimal requirement level. The base level of competency is unknown at this time. Your self assessment must then be validated by someone (boss, peer, club official, still undecided) before you can be considered Class A material.

The scariest part of the initiative is the mandatory self assessment required every three years in order to maintain your Class A status. Franklin Covey, a firm based in Salt Lake City that specializes in self improvement philosophies and self motivation tools, has sold the use of their HR WEB tool to GCSAA. Covey has developed an assessment chart with five levels of competencies that relate to the many different skills that a superintendent must possess. Every Class A member will be required to assess their competencies in each category. Classes will be available to help improve your competency levels. GCSAA wants to inform employers about the HR WEB tool so that your employer can assist you in determining your competency levels and recommend courses the employer thinks are necessary for your improvement.

GCSAA want employers to use this information as a guide for deciding what level of competencies an applicant should possess. Just think, one day you will carry your competency profile into an interview and may or may not be considered for the position, depending upon your levels in each category. Of course, once you are a Class A member, there is no validation of the self assessments (Who is qualified to do that anyway?) So, you can have your competency levels read whatever you need.

How about the possibility that GCSAA might decide to "help out" employers? Rather than employers having to wade through 200 resumes, they might fill out a com-

petency profile questionnaire, have GCSAA input the data into the WEB and then, just like that, provide the employer with five or six names. You will never hear about the job opening and, if you are not one of the people on the "list", your name will never come up. Whether mandatory or volun-

tary, there will be problems that arise from the use, misuse, and/or access to the data in the HR WEB.

The next requirement for maintaining your "branded" Class A status is to acquire a certain number of CEU and PDU credits during a three year period. The amount of credits has yet to be determined.

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The GCSAA education department is supposed to make education more affordable and accessible. GCSAA has no idea of the cost, or exactly how they will make it accessible. Nor have they given us a time frame for the implementation of their plans. This requirement should not be voted on before GCSAA has proven to the members that they can, in fact, produce

affordable education. We run the risk of losing good members just because they lack the financial backing that others enjoy. Many superintendents cannot afford to go to the National Conference. Most superintendents are attending as many seminars and meetings as they can afford or have time for. I do not think that this requirement should even be discussed until GCSAA has their programs in place and the costs are known. Only then can we make a fair, knowledgeable decision about the amount of credits to require or not require.

GCSAA's purpose was to support ALL members, and now they want to regulate and qualify who they represent. The membership has no right to act as judge and jury of their peer's qualification. Our Association should be encouraging superintendents to join and participate. Only 45% of the courses in the U.S. have a Class A member and if this initiative passes, GCSAA stands to represent even fewer courses. Superintendents may drop their membership because of the education requirements, a lack of financing or time, a lack of interest or simply because they disagree in principle with the new requirements. Both the Carolinas Golf Course Superintendents Association and GCSAA (dual membership) will suffer financially, but worst of all, both associations will lose quality members.

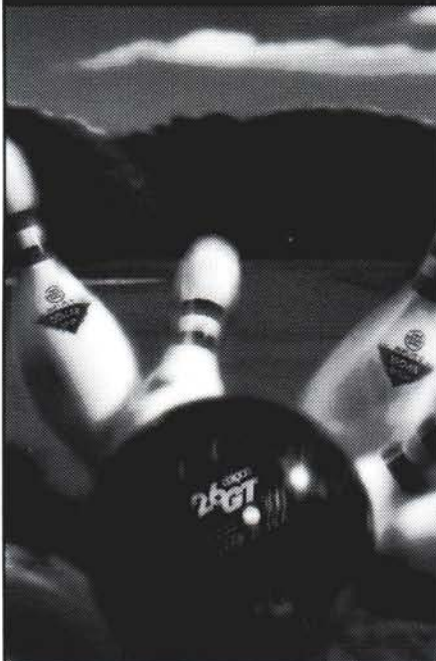
The Carolinas and GCSAA memberships have come to a crossroads. Either you do as they say and be what they want or you choose a different road. Luckily, we in the Carolinas and surrounding states have our local associations and the Turfgrass Council of NC. We also have the state supported certification program for those who are interested in becoming a NC Certified Turfgrass Professional. I believe employers will respect this achievement more than the "branded" Class A status. The Internet now provides

unlimited access to educational materials and data. There are other options such as joining TURFNET and the new GOLFSAT program for fast access to information and products, etc. But I for one would miss the camaraderie that I have enjoyed from being associated with the Carolinas over the years. The most beneficial educational opportunity we have is the willingness of superintendents to help each other and share their knowledge and expertise. Will the passing of PDI affect this special relationship among superintendents? I think it will and in some cases, it already has.

The majority of the members have been apathetic as to how their vote has been cast. I know I have been. We gave our votes to the Carolinas BOD to cast as they saw fit. But then, we have not been informed or asked how they should vote either. The communication between members and the BOD has been poor in this regard. It is very likely that the dual membership would not have passed if the membership had not been apathetic and if the BOD had really been interested in member opinions. We are all accountable for the lack of communication and interest in the policies of CGCSA and GCSAA. This must change now!

PDI has already cost over one million dollars (and it is still in the developmental stage) and will affect every current and potential member for years to come. It is the member's responsibility to become informed, express opinions, and vote on this issue. We, the members, must make certain that the Carolina's BOD casts our votes exactly the way we want. If not, we will have to reclaim our vote and vote individually, or proxy it to someone who will. The PDI issue is much too important to allow only a few BOD members to decide how 500 members will vote. Please, get involved, whether you are pro or con. Take responsibility for the direction of your associations. ♻

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# May Meeting At Janesville Country Club

By **Mike Berwick**, Golf Course Superintendent, Golf Courses of Lawsonia, Inc

Superintendent Dan Mosblack hosted the monthly meeting on Monday, May 8, at the Janesville Country Club. Although thunderstorms and showers were forecast for the day, 78 persons attended and played golf in the two-man bestball format. Dan and his staff had the course in great condition and their hard work is much appreciated.

A lunch of salads, brats, hot dogs and burgers prepared everyone for an afternoon of golf on this challenging course.

The winners of the best ball event were:

- 1<sup>st</sup> - Dave Arden and Jim Bohlman (64)
- 2<sup>nd</sup> - Andy Kronwall and Doug Yaden (64)
- 3<sup>rd</sup> - Bob Lively and Kerry Anderson (65)
- 4<sup>th</sup> - Steve Van Acker and Paul Schaefer (66)

The winners of the flag events were:

Dan Mosblack	Longest Drive on #1
Charlie Ocepek	Closest to Pin on #3
Dave Arden	Longest Putt on #5
Jack Knulty	Closest to Pin on #10
Brad Johnson	Longest Drive on #15
Al Pondel	Closest to Pin on #16

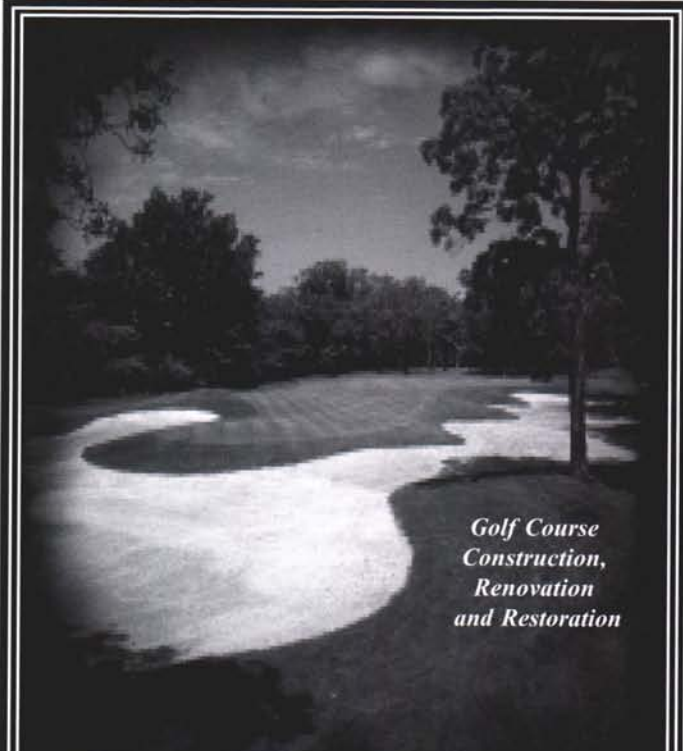
After a delicious prime rib dinner our guest speaker was Mr. Jeff Gregos of the TDL, Department of Plant Pathology at the University of Wisconsin - Madison. Jeff's topic was "What is Involved in Sample Processing." Jeff spoke about proper handling, packaging and shipment of samples to the TDL. He had lab equipment set up and was able to show us a sample of ERI [ectotrophic(outside) root infecting] hyphae on the roots of a sample plant. This disease is better known as take-all

patch and he believes it is what was currently being misdiagnosed as leaf spot.

Jeff explained his position at the TDL and stated that he is responsible for raising funds for part of his salary and the activities of the lab. The TDL contracts are a means of raising the funds, much like an insurance policy, so that the TDL will be there when we need it.

Jeff also mentioned that Reinders Brothers irrigation department was starting a registry similar to a bridal registry for irrigation needs of the O.J. Noer Research Facility. If you care to donate something for the Noer's irrigation expansion just call Reinders and they will give you the details.

Special thanks go to Dan Mosblack, Professional Lance Marting and the entire staff at Janesville Country Club for inviting our organization and making the day enjoyable. ♣

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# The Mound Builders

By **Monroe S. Miller**, Golf Course Superintendent, Blackhawk Country Club

When anyone mentions earthen mounds in the landscape, of course I think of golf course features - mounds, moguls, chocolate drops and the like. They are intended mostly as hazards to deflect a mis-hit golf ball, but they can also be used to help define a play area, accent a feature or even hide a golfer's look at the intended target.

Most of us even have our favorite shaper, a person who can create mounding with the hand and eye of an artist using a dozer instead of a brush. Rafael Ripp is the best there is anywhere, bar none in my view and experience. He's talented in interpreting an architect's intentions on paper and transforming a piece of ground to reflect the design, while using one of Lee Bruce's John Deere dozers. Ray has left a mark on our course that will endure as long as it does. He is a modern day mound builder.

Wisconsin is also the home to some excellent work by ancient mound builders. In fact, in the basin of the Mississippi River, especially in areas lying east of the river, are tens of thousands of mounds which were built by humans before American history started. Trempealeau county, for example, has over two thousand mounds itself.

Obviously, these mounds in the middle U.S. were built by Indians, although earlier theories held that the earthen works were constructed by a civilization who lived in the great basin before the Indians.

It was heavy work accomplished by a relatively small number of people. At the time of the pilgrims, I've read estimates that the entire Indian population in North America was under a quarter of a million. Of these Wisconsin may have had only 10,000, a small number of people to have built so many mounds. But their work was over generations, maybe 500 years.

Most of the mounds are a few feet high. Exposure to weather and the elements for hundreds of years have worn them down. But there are some with a height of 80 feet or more yet today, giving hint to their original majesty. Some I have seen near the river at St. Louis are nearly that big; it stretches the imagination to understand the amount of work involved in construction at a time of hand labor and crude implements. They didn't have access to any John Deere dozers!

Mounds have many shapes. The conical mounds are sometimes call tumuli. There are linear mounds, squares and circles. These are believed to have been use as fortifications. In many places, especially here in Wisconsin, mounds were shaped to resemble buffaloes, bears, squir-

rels, birds, lizards, turtles, serpents and dozens of other shapes. Some apparently were designed by Indians to represent clubs, bows and spears. Mounds with these particular and peculiar shapes are call effigies.

The conical mounds were frequently built as a burial place for important tribal members. Archeologists have excavated tumuli and found the person was frequently buried in a sitting posture, surrounded with clay pots containing food (presumably to last him until he arrived at the happy hunting ground) and weapons of stone or even copper. Large tumuli were the sites of council houses or the wigwam of a chief.

Indians belonged, through their mother's side of the family, to a clan and each clan had a symbol (or totem) - bear, turtle, buffalo, etc. It follows that the many effigy mounds in Wisconsin and elsewhere represented these clans. Any village could have several clans, explaining why several differently shaped effigy mounds can be found in close proximity.



Three conical mounds at the 14<sup>th</sup> hole at Blackhawk.

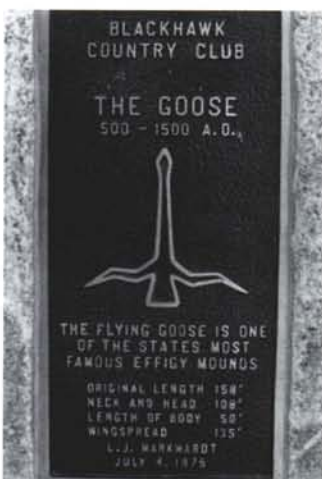


A sign at Baraboo CC asking player to keep golf cars off the Indian mounds. "Piniggi" is an Indian word meaning "thank you."

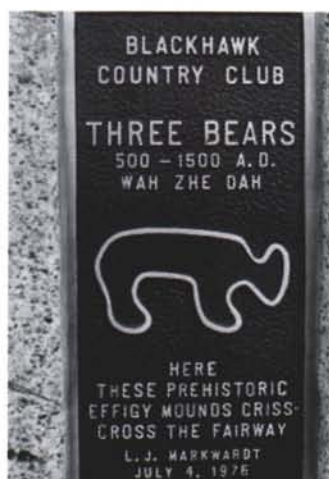




Al Jansen and his crew at Baraboo CC use white marker paint to note the boundaries of the Indian mounds. This accents the subtle shape of the mounds.



A bronze plaque on a granite boulder marks the large Goose Effigy Mound at Blackhawk CC.



Boulder with bronze plaque identifies site of Three Bears Effigy Mound.

Indian mounds. And all three are on or near water - Koshkonong Mounds CC, Baraboo CC and Blackhawk CC.

The mounds at KMCC were first noted by Dr. Increase A. Lapham in 1855, about the same time he wrote of those around Baraboo CC (1850). Lapham was an early settler in southern Wisconsin and an archeologist. One of his writings dealt with area Indian mounds - *The Antiquities of Wisconsin*. In 1908, archeologists surveyed the mounds around Lake Koshkonong and found over 500 effigy mounds. Thirty-six of those were on the property that became the golf course. The club provides a handout for interested viewers that includes a map of a self-guided tour of their mound collection. Twenty-two of the mounds remain today. I have taken that tour and published photos of the mounds in past *Grass Roots* issues. They are a fascinating collection you may want to visit yourself if you haven't already.

Baraboo CC has eight mounds. Five were documented in the 1800s and three additional were found in 1996 by Al Jansen, golf course superintendent at BCC. Their collection includes a bear effigy (82 feet long), a mink shaped mound 185 feet in length, a linear mound with a head terminating in two parts (230 feet long), a 64 foot long beast lying on a slope and a linear mound bent at the pointed end of its 152 foot length. Jansen found a 200

The age of Indian mounds is a common question. Two groups built mounds in Wisconsin; the Hopewell Indian Culture (0 to 500 AD) and the Effigy Mound Builders Culture (500 to 1500 AD). Although some of the mounds in Wisconsin may be well over a thousand years old, others are from a time near our history. Skeletons have been found during excavations of Indian mounds wearing silver jewelry and ornaments made in France, some of which are dated as late as 1680! In fact, there is documented evidence that Indians were actually building mounds in our southern states as late as our Revolutionary War of 1776.

Indian mounds in Wisconsin are frequently found on the banks and areas adjacent to lakes and rivers and often upon the summits of high bluffs overlooking the countryside. That probably illustrates the point of this brief essay on ancient mound builders: at least three golf course I am familiar with in Wisconsin are home to some



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