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# HOLE NOTES

Official Publication  
of the  
Minnesota Golf Course  
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## From Your President's Desk



E. Paul Eckholm, CGCS

### From Early Rains to Near Drought, Wonder What the Fall Will Bring?

The heart of the season is upon us and it looks like we will not be having an easy workload. From the early rains to the near drought I can only wonder what the fall will bring. Perhaps we will have really nice weather mixed with nighttime rains. Wouldn't that be a switch.

I met recently with Dr. Powell and Dr. Horgan for lunch. They seem to complement each other quite well. Together they have a vision for the research and extension turfgrass program that is truly exciting. The Drive for the 'U' program has filled some of the immediate needs of the program but we are far from finished. In the near future you will be receiving information about where they would like the program to go as well as how you can help. Please support the program as best you can.

As some of you may have noted, The GCSAA has instituted an internet sales site. This site is presumably in the interest of the members, to allow them to get better pricing on goods. If you are so inclined to use these sites please remember a few things. Our local vendors are the ones that for years have foot the bill for many of the things our association has been able to do. They are the ones that buy the booth spaces at the trade shows, they are the ones paying for the advertisements that fund the newsletter, the roster and the web page. They are the ones that pay for the hole sponsors, event sponsorships and hospitality rooms. In short, the vendors are the people that drive the funding of our association. Without them, we would all be getting a lot less or paying a lot more. So support your local vendors, and maybe buy them lunch for a change.

The Board of Directors has been busy planning for the future. The budget has been submitted and approved and although we have been diligent in the last two years our expenses continue to outpace our incomes. For that reason you will all be seeing a slight increase in your dues for the fiscal year beginning in July 2002. Unlike the increase we had a few years ago this increase will affect all classes of membership except those that are exempt from dues. Buy the way, when I say slight I do mean slight, probably less than 5%. It has been the feeling of the Board for some time that these small corrections every other year would be far better than waiting until we are strapped and need a large increase. We will continue to look for ways to cut our overhead and do things in a more efficient manner.

\* \* \*

Keep smiling and doing the best you can. "If you don't know where you are going, you will surely never get there." - anon.

--Respectfully,  
E. Paul Eckholm, CGCS  
epeckholm@msn.com

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## MGCSA CALENDAR

- Monday, August 20**  
**MGCSA CHAMPIONSHIP**  
Wayzata Country Club  
Host: Bob Distel
- Tuesday, September 25**  
**STODOLA SCRAMBLE**  
Edina Country Club  
Host: Mike Kelly
- Wednesday, October 3**  
**MGCSA FALL MIXER**  
Ruttger's Bay Lake Lodge  
Host: Joe Wollner
- Tues.-Thurs., December 4, 5, 6**  
**MGCSA ANNUAL BUSINESS MEETING  
AND MTGF CONFERENCE AND SHOW**  
Minneapolis Convention Center

# Bluebird Recovery Program

In February, BBRP wrote an article for the MGCSA (Minnesota Golf Course Superintendents Association) March Newsletter. The purpose of that article was to inform Superintendents that golf courses are ideal habitat and to encourage them to start a bluebird trail. Ten Golf Courses responded. We would like to talk about two that had significant success after making a commitment to work with us:

Lori Bluedorn of Tournament Players Club in Blaine contacted us in the middle of March and made a commitment to buy 26 Peterson Bluebird boxes. Lori listened well and learned fast and was awarded with Bluebirds nesting in 9 out of 13 paired-boxes by late June. Lori and TPC are to be congratulated for the fine work they did in creating one of the finest Bluebird trails around.

Jay Gustafson of Wendigo Golf Club in Grand Rapids contacted us in early April. Superintendent Tom Marquardt

and Jay built 12 bluebird boxes of their own design and installed them in 6 pairs. While passing thru Grand

Rapids on his way to an annual vacation spot, Jack Hauser stopped and met Tom and his wife Becky. While waiting for Becky to wait on two golfers, I heard her say: "Look for the Bluebirds on the back nine." Tom showed me three of the six paired-houses. The first pair had 5 Bluebird chicks about 9 days old, the second pair had a bluebird nest with 5 eggs, the third pair had a bluebird nest with no eggs but the male and female were watching us from a nearby tree. Great job Tom & Jay.

BBRP would like to apologize for not getting out to see every Golf Course that called. Many things are still in the planning stage and we should be able to respond faster in the future. We still hope to visit everyone before the end of the year. Any one who has a question, can call Jack Hauser (952-831-8132) or Dorene Scriven (612-922-4586).

*Lori Bluedorn of Tournament Players Club in Blaine contacted us in the middle of March and made a commitment to buy 26 Peterson Bluebird boxes. Lori listened well and learned fast and was awarded with Bluebirds nesting in 9 out of 13 paired-boxes by late June.*

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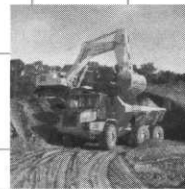
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# Winter Cover Evaluation Trial

By JON F. POWELL  
*University of Minnesota*

## Introduction

During the winter of 2000 /2001 a field trial was conducted to examine the value of winter covers for protecting greens from winter injury. The study, sponsored by the Minnesota Golf Course Superintendents Association was the first year of a multi-year project to assess different aspects of winter covers including spring green-up and the risk of cold injury to turf wintered under different covers.



**Jon F. Powell**

One of the goals of this project was to examine the value to water impermeable covers (WICs). The interest in WICs has developed due to the incidence of crown hydration, in which the excessive moisture freezes and causes injury to the crown of the plant. The WICs would reduce the risk of crown

hydration by shielding the plant from water from rain and snow melt. The interest in this aspect of WICs comes despite past concerns about the risk of these covers limiting gas transfer, such as occurs under ice cover, resulting in anoxia (lack of oxygen) and injury/death of the plant.

The winter cover trial was conducted on two greens at Rolling Green Country Club in Hamel, MN. One of the greens was located near the maintenance shop on a higher elevation and received greater exposure than the other green located near the road was more protected at a lower elevation. Both were pushup greens established from Toronto creeping bentgrass.

The study included cover that were water permeable and water impermeable. The water permeable covers used in the study included wood fiber, 2 year old wood fiber, wood fiber with black netting, a white winter blanket, and a cover of green and clear woven plastic. The water impermeable covers included 6 mil clear plastic, 6 mil clear plastic over a wood fiber cover, a generic green tarp, closed cell foam, and closed cell foam with a backing that did not allow light to pass.

Covers were applied to the greens on November 17, 2000 following a fi" snowfall. The snow was removed from the

study site by shoveling and brushing with a shop broom. The covers were cut to 6' by 6' and held in place with nail/washer. The seams between WICs were sealed with taped. At the time of application there was only fi" of frost present in the greens.

## Cover Removal and 1st Rating?

The winter covers were removed from the greens on April 6, 2001. The quality of the turf was collected on a 0-9 scale (9 being the greenest) and soil temperature were taken from each plot at a 2" depth. At both locations the uncovered plots had the lowest quality throughout the duration of the study although the quality improved steadily with no decline. The covers that yielded the best turf quality at the time of cover removal were the generic green tarp, and the closed cell foam with the backing. The highest quality turf was under the wood fiber under clear plastic which had about 1/4" growth. This is of interest as all of these covers are water barriers. The next best covers were the wood fiber which provided consistent quality at both locations. The closed cell foam without backing provided a quality turf on the protected green but the quality was lower on the exposed green. The woven plastic and white blanket yielded turf of better quality than the uncovered plots, but not up the level of other treatments. The clear plastic provided turf quality better than the uncovered plot but the lowest quality of all turf covers.

The temperature data collected following cover removal also indicated significant differences among winter covers. At the protected green, soil temperatures under the woven plastic, closed cell foam without backing, white blanket, and clear plastic covers were not different from the uncovered plot at 39° F. The wood fiber, green tarp, and plastic over wood fiber were cooler than the uncovered plots at ~ 37° F. The soil temperature below the closed cell foam with backing was only 34° F. At the protected green, the only cover to yield a significant temperature difference from the uncovered plot was the closed cell with backing. The soil temperatures under this cover (2" depth) was 33° F, 9° F cooler than the other plots.

## Additional Rating Dates

The second rating was taken on April 18, 2001. Again the uncovered plots at both locations had the lowest turf quality.  
*(Continued on Page 10)*



# Winter Cover Evaluation Trial—

(Continued from Page 9)

ity. The best quality turf on the exposed green near the maintenance shop were the wood fiber, closed cell foam without backing, and the wood fiber under clear plastic. The turf covered with the foam with backing and generic green tarp decreased in quality at this location from the time of the first rating. This trend held through April 27, with an increase in the quality of the closed cell foam with

Cover Type	Rating 4-6-01	Rating 4-18-01	Rating 4-27-01	Rating 5-4-01
Uncovered	2.3	3.7	4.7	5.7
Wood Fiber	6.3	7.2	6.8	6.7
Wood Fiber (2 year)	6.8	7.0	7.2	6.7
Wood Fiber (Black)	6.7	7.3	7.5	6.7
Closed Cell	7.2	6.7	6.0	6.0
Closed Cell/Backing	7.7	6.8	7.0	7.0
Woven Plastic	5.5	6.5	6.0	6.3
White Blanket	5.3	6.0	5.8	7.0
Generic Green Tarp	7.5	6.5	6.3	7.0
Clear Plastic	4.3	5.3	6.3	6.3
Wood Fiber/Clear Plastic	8.7	7.5	5.5	6.3

**Quality data for the protected green.** Data collected on 0-9 scale (9 being best quality) and listed the average of 3 plots.

backing. By May 4 the only the uncovered plots were identifiable and there were not differences among any of the plots that were covered throughout the winter.

At the protected green near the road there were only limited differences between the treatments with the best quality in the plots covered with the wood fiber and wood fiber under clear plastic. The clear plastic plots had the lowest quality, but were still better than uncovered plots. As with the other location, the closed cell foam with backing turf

Cover Type	Rating 4-6-01	Rating 4-18-01	Rating 4-27-01	Rating 5-4-01
Uncovered	3.3	3.0	4.0	5.0
Wood Fiber	6.3	6.0	6.5	6.7
Wood Fiber (2 year)	6.3	6.2	6.8	7.0
Wood Fiber (Black)	7.0	6.2	7.2	7.0
Closed Cell	7.1	5.7	5.8	6.5
Closed Cell/Backing	8.3	4.5	6.3	6.7
Woven Plastic	4.2	4.8	5.8	7.0
White Blanket	6.0	5.3	5.8	6.5
Generic Green Tarp	7.3	4.8	5.5	6.8
Clear Plastic	4.0	4.3	5.0	6.2
Wood Fiber/Clear Plastic	7.3	6.7	7.0	6.7

**Quality data for exposed green.** Data collected on 0-9 scale (9 being best quality) and listed the average of 3 plots.

improved in quality through April 27. By the final rating date of May 4, the closed cell foam with backing, the generic green tarp, and white blanket plots gave the highest quality ratings and were the only plots significantly better than the uncovered plots. The other covered plots had higher quality ratings than the uncovered but the differences were not significant.

## Tolerance to Freezing Injury

While it is obvious that the ability of a cover to prevent desiccation and crown hydration are important, along with the quality of turf when the covers are removed; the hardiness of plants following cover removal is of equal consideration. To examine the tolerance of turf from the different covers to freezing injury, turf samples collected on April 6 after the covers were removed. The turf samples were subjected to temperatures of 39° F, 21° F, or 10° F for 1 hour. The sample were then transferred to the greenhouse and rated for turf quality.

There were no differences in turf quality of samples that were maintained at 39° F, but this was expected as this is similar to temperatures the turf would have been experiencing prior to sample collection. When the samples were cooled to 21° F all covers yielded similar quality turf to the uncovered turf with the exception of the turf from the wood fiber covers which had greater levels of turf injury. The most noticeable effect of freezing temperature was observable when

(Continued on Page 32)



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