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With the eventual passage of time, I have noticed fifty creeping over the horizon and forty fading in the dusk. At the last MGCSA Board meeting I looked around the table at the varying ages of people and noticed myself having more "life experience." It is interesting to note how our association has evolved in the last twenty-five years, but at the same time the level of commitment and intensity our board exhibits hasn't changed.

As a Board, we meet ten to eleven times a year to go over association business. Scott Turtinen, our Executive Director, handles all the day-to-day dealings, allowing the Board members to handle their committee assignments without interfering with their work or family. This doesn't mean that board meetings are short or without discussion. I have been everything from a fly on the wall (as a first time on the Board) to the center of lengthy debates on how best to improve our association for our members. As President, I have helped coach and guide a group of members as devoted to our membership as any before or possibly to come.

With five months remaining of my term as President, I would like to encourage our membership to become involved in the future of this organization. Join a committee that you have an interest in or toss your hat in the ring and get elected to the Board. An elected term runs for two years and during this time you will meet some individuals that share a common interest with you. Contact one of the board members or call Paul Eckholm if you are interested. I am confident you will enjoy participating.

* * * *

Mike Nelson, Superintendent at Dakota Ridge, hosted our annual President's Outing for the board this year. With ten Board members and three spouses participating in a two best ball event, all participants had a great time. The winning team of Jon Almquist, Scott Turtinen, Jack MacKenzie and Mike Nelson took home bragging rights for the coming year. First place prize was a dozen golf balls for each member of the winning team, provided by Phil Reith, the Pro at Woodhill. Last place earned a single ball.

* * * *

August 18th is our Championship at the Legacy Courses at Cragun's. Matt McKinnon, Superintendent, is looking forward to hosting this great event. Steve Busch, our defending champion will be there to defend his title.
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A larger number of covers were tested on small plots over the previous couple of years by Dr. Jon Powell. Based upon his data, three covers that had performed well were chosen plus a new product to test over an entire green or as large plots (25 by 50 ft).

**Materials and Methods**

The current study was conducted on push-up greens comprised of a mixture of creeping bentgrass and annual bluegrass at Rolling Green CC (RG) and on a newly established USGA green seeded to L-93 creeping bentgrass at the TROE Center on the St. Paul Campus (campus). This was the first year of a two year study. The data presented should be considered preliminary until a second year of data is compiled.

The treatments included in the research project were:
1. Uncovered control
2. Basic green/brown tarp purchased from Menards; laid green side up
3. Greenjacket which is a non-permeable cross-laminated high-density polyethylene with reinforcing tabs
4. Crane Creek which is a two layer system with straw placed between the layers. The lower layer is a polyester mesh that is staked to the ground and the upper layer is a non-permeable polyethylene cover that is laced to the lower mesh layer. The lacing attachment process is supposed to allow maximum air exchange. This treatment used 6-8 bales per 1000 ft² evenly spread between the layers
5. American Excelsior which is a four foot wide roll of wood fiber inside netting, (only included on the newly established USGA green on campus).

The covers were installed November 7, 2002 on the newly established green on campus and November 13, 2002 on the greens at RG. Temperature sensors/recorders were placed on the green surface, in the green near the crown of the turfgrass plant, and at a 2" soil depth before the covers were installed.

Covers were removed March 18, 2003 on campus and March 26, 2003 at RG. The plots were rated for turf quality (TQ), color, and percent injury (PI) the day of cover removal and then weekly until all treatments had ratings that were not statistically different. All treatments were replicated three times at each location.

**Results**

Some of the results were quite interesting. This past winter was an unusual year having little or no snow cover for the majority of the winter. As we examined the temperature data that was collected, we noticed that the temperatures under most of the covers fluctuated greatly along with the air temperature. A portion of the graph in Figure 1 shows the insulating affect that snow cover can provide by dampening the extremes in temperature. Only two inches of snow was required to have a dramatic affect on temperatures under the snow.

There was also a noticeable insulating affect from the American Excelsior covers as well as a major affect with the Crane Creek cover because of the straw (Figure 1).

When the covers were removed, all covered plots had significantly better TQ and color than the uncovered plots at both locations.

The campus ratings for the Crane Creek cover suffered because of excessive etiolation and some patch-like areas that had incurred some injury (because of the etiolation that occurred it may be better to use less straw than we used, although this has not been tested). After two weeks the etiolated turf had turned green and the plots had the top color ratings along with American Excelsior. The patches, on-the-other-hand took four weeks to heal and kept the TQ ratings suppressed because of it. The story was different at RG where there was only a little etiolation on some of the collars surrounding the putting green. These greens had good color and TQ (though color was not statistically different from others on some dates).
FOR SALE
1974 Toro Parkmaster 7-gang/9-gang
rough mower w/spartan reel. Needs power steering unit, and some work on the reel. Many extra parts. Very repairable or excellent condition. Will consider any and all offers.
Contact: Jim Barnett, Superintendent, Babbitt Golf Course, Babbitt, Minn. at home after 3 PM at 218-365-6946.

FOR SALE
Irrigation System
Woodhill Country Club will be replacing the present irrigation system. We have a Normally Open Hydraulic system which is fully functional. There are 38 Vani-Time Controllers, approx. 350 - 696 two speed sprinklers, approx. 400 - 630, 640, and 670 sprinkler heads. Also included are numerous parts.
Contact: Rick Fredericksen 952-473-8181 or 612-290-3810 r.fredericksen@msn.com

FOR SALE
12 Toro 80/UTCsatellites. All in working condition. 2 extra boards that go with them.
Contact: Terry Erten
The Crossings GC
Montevideo
320-269-6028
crossings@montegolf.com

FOR SALE
2000 Gandy Sweepmaster Greens Brush with electric lift - like new. $500 or best offer.
Contact: TOM or MICK
Albany Golf Club
320-845-4306 or 320-295-1698

Wanted
Toro VT-4 Irrigation Clocks
Contact: Bob McKinney
Mendota Country Club
651-454-1441

For Sale
Toro VT-1 Central controller $800
Toro Network LTC Satellites 16 Stations 7-($1000 each) Toro VT-4 Satellites (7 complete + 4 extra clock faces, many extra parts) $200 each 75 HP centrifugal pump with VFD (480 volt 3-phase) $6,500. 10 HP centrifugal pump (240 volt 3-phase) $500. 7.5 HP Blower pump (480 volt 3-phase) $500. Misc. cast iron pipe fittings for old pump house and water tower pump. 
Contact: John Granholm
Eau Claire Country Club
1-715-836-8422

For Sale
Par Aide Satellite tee markers. 81 sets - Tee markers have been sanded and are ready for paint.Unpainted $500. Painted your color $725, plus the cost of paint.Storage stands included. 
Acculom Bunker Rakes, 275 rakes @ $8 ea. $2750.00 for all. 
Contact: JEFF JOHNSON
The Minkahda Club
612-926-8427

For Sale
Broyhill 'Greenskeeper' Power Broom
White Street Ball Washer. Best Offer.
Contact: SALLY BERENS
Benson Golf Club
320-849-2109

WANTED
Rollers to fit a Greensking IV
Corter: RICK DOUNEX
218-299-5365

For Sale
Toro Spray Hawk, 45 regulation size plastic putting cups (some new, some slightly used), 21 flagsticks that were only used for a year and are all in original boxes.
Contact: Jason Stoffe ranh
The Legends Club
952-226-1148
jstoffers@legendgsc.com

For Sale
Coremaster 6 greens and tee aerator Like new. $3,000 or best offer.
Contact: GARY or AL
Viking Meadows Golf Club
763-434-5501

WANTED
Greens Rollers – vibratory or weighted
Contact: JOE or MATT
Red Wing C.C.
615-388-9204

Wanted
Cashman Frontline Model #88804-8810. 3 wheel greens and tee aerator.
Contact: Pete Grover or Tom Lundgren
Katheaven GC
765-786-2945

For Sale
14 hp Kohler engine to fit old GM 3-300 Toro. Hopefully in running order.
Don't want to spend much as it's just a back-up tee mower.
Contact: JOHN BETCHWARS
Creeksbend Golf Club
952-758-7202

WANTED
Super Court Master compact automatic grading system by Laser Leveling
Want to rent for the summer.
Contact: MARK PLOMBON
Small Golf Club
615-439-7819

FOR SALE
Foley Accu-Spin Reel Grinder - Model 5096, $3,500.
Contact: KEITH or DAN
Oak Ridge Country Club
952-838-6900

FOR SALE
B&B Technologies Turf Tech 300 Sprayer. 30 gallon pull behind sprayer 5.5 hp Honda Engine with centrifugal pump. Hose reel, electric boom, foam marker. Approximately 50 hours used, used 10-15 times to spray fairways. Price: $6,500.00 or best offer.
Contact: Joe or Matt
Red Wing Country Club
651-388-9204

FOR SALE
2000 Jacobsen Tri-King 1900 D. 3wd, diesel. hrs. 10 blade reel. In Great Shape. Price: $11,500.00 or best offer.
Contact: Matt or Joe
Red Wing Country Club
651-388-9204

FOR SALE
1998 JACOBSEN 1800G TRI KING 1700 hrs./72” Cut with 11 blade reels $4,000 or best offer
Contact: Steve Benson
Grand National Golf Club
320/284-7084

FOR SALE
1991 Cushman Outfront Rotary Kubota Diesel Engine 72” Mulcher
Fully Equipped
Great Condition $2,100 hrs. - $4,000
1991 Cushman Core Destroyer
Great condition - $1,000

1991 Ryan Greenside II Aerator Comes with 1/2 and 5/8 holders and some very nice heads in good shape - $1,000
Contact: Roger or Jim
Southview CC
651-451-1606

FOR SALE
Jacobsen parts – new and used.
Good prices, make offer.
Contact: KURT HOWALDT
Marshall Golf Club
507-352-5162

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Featuring bentgrass greens and aprons with bluegrass fairways and tees.
Gently, rolling terrain with beautiful mature trees with a pond and surrounding State Line Lake. Also included: Lake Point Bar & Grill. Located on the shores of beautiful State Line Lake just off Hwy. 149.
Special Features:
1. Banquet Facility and Dance Hall with Sound System (2,500 sq. ft.)
2. Two Bars, 3-Pro Shop
4. 20 golf carts (leased)
5. New Irrigation Pump (installed 2001)
6. 4 Jacobsen 422 Walking Greensmowers, all with grooming attachments and baskets. Bought new in the fall of 1997. Excellent condition. Original baskets. Asking $4,000 per car or 4,000.00 each if you take all five.
Contact: MICHAEL KLATTE
Creeksbend Golf Club
763-475-7394
Cell: 612-392-9446

FOR SALE
Five (5) 1997 Club Car Golf carts
48-volt electric golf cars with canopy’s and sweater baskets. Bought new in the fall of 1997. Excellent condition. Original batteries. Asking $1,450.00 per car or 1,400.00 each if you take all five.
Contact: DAVE BURMEISTER
Mayflower Country Club
Fairfax, Minn.
507-252-9946
mayloc@prairie.lakes.com

FOR SALE
6 Smooth Rollers for Toro 72” reels ($610) used for 200 hrs. at $1000 or $500 per car or $500 each if you take all five.
Contact: TROYloe
B&B Technologies Turf Tech 300 Sprayer. 30 gallon pull behind sprayer 5.5 hp Honda Engine with centrifugal pump. Hose reel, electric boom, foam marker. Approximately 50 hours used, used 10-15 times to spray fairways.
Price: $6,500.00 or best offer.
Contact: Joe or Matt
Red Wing Country Club
651-388-9204

FOR SALE
2001 Jacobsen Tri-King 1900D diesel, 292 hours, 3wd excellent condition $14,500.00
Contact: DAN SWENSON
1999 68DL National Deluxe Mower with 50 hours on it. $5,300 or make offer.
Contact: RICHARD GEIKE
Fritz's Resort
218-568-9898

FOR SALE
1993 Jacobsen 422 Walking Greensmower, in excellent condition. $14,500.00 or make offer. 
Contact: GUY LEACH
Spring Valley Golf Club
715-778-5513

For Sale
1999 Ramborn AR-250, 4WD Rotary
2,100 hrs.$9,900 or best offer.
Contact: GENO or HARTLEY
Daytona Country Club
715-735-2950

FOR SALE
9-Hole Golf Course Northern Minnesota. Par 31, 2000 yards
Contact: CHRIS KLATTE
218-247-8504

FOR SALE
1-Toro VT4000 Central Irrigation Controller $2,000. 14-Toro VT12 Electrical Irrigation. 3 Satellites $100/ea. 40 hp Jacuzzi Centrifugal Pump (230 v) $/Starter 20 hp Berkeley Centrifugal Pump (230 v) w/Starter Pump Control Panel w/Pressure Switches 4” Cla-Valve. Y-Strainer, Check Valves, Fittings, Pipe, Etc. Buy Everything for $2,000 or offer.
Contact: JEFF BACKSTROM
Cannon Golf Club
507-263-0851

FOR SALE
Contact: DEL TATF
1999 68DL National Deluxe Mower w/Pressure Switches 4” Cla-Valve. Y-Strainer, Check Valves, Fittings, Pipe, Etc. Buy Everything for $2,000 or offer.
Contact: JEFF BACKSTROM
Cannon Golf Club
507-263-0851

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Christmas in August –
(Continued from Page 5)

The uncovered plots were brown when the other covers were removed. It took 4-5 weeks before they were statistically similar to any of the covered plots and 6-7 weeks for full recovery. The recovery process was probably longer than normal due to the lack of snow cover which contributed to desiccation. One of the uncovered plots at RG had significant desiccation injury on the highest portion of the plot. After 7 weeks, there was still at least 50% injury whereas none of the covered greens received any desiccation injury.

GreenJacket plots took longer to green up than some of the other plots and had TQ ratings that were intermediate but ratings were significantly better than the uncovered plots.

The green/brown tarp provided excellent TQ and good color at RG however the ratings on campus suffered from some leaf tip browning after the covers were removed.

The American Excelsior covers were only used at the St. Paul campus on the USGA green, but they provided the highest overall TQ and color ratings. However, as we have seen with the other covers, it doesn't mean that they would necessarily perform the same at the other location.

The variation seen between the two locations could be attributed to the environmental conditions, location, soil type, grass species, or stand age.

Cost can be another important consideration when deciding upon the cover that best suits your situation. Table 1 lists the cost per square foot for each of the covers and additional notes about each option. Some companies offer early order and volume discounts. The costs for each cover should be adjusted to a cost per year based upon the anticipated longevity. The labor involved with the installation, removal and storage should also be considered. Discussion

<table>
<thead>
<tr>
<th>Cover</th>
<th>Cost/ft²</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncovered</td>
<td>$0.00</td>
<td>Turf may be vulnerable to some injury during severe winters.</td>
</tr>
<tr>
<td>GreenJacket</td>
<td>$0.12-0.17</td>
<td>Requires reinforcing tabs which are included along with spikes; can be cut to fit. Water impermeable.</td>
</tr>
<tr>
<td>Green/Brown Tarp</td>
<td>$0.03-0.05</td>
<td>Only available in precut dimensions so multiple covers for each green may be required. Spikes also need to be purchased which adds to the cost. Water impermeable.</td>
</tr>
<tr>
<td>Crane Creek</td>
<td>$1.00</td>
<td>Fully guaranteed for 10 years; custom cut to fit greens; yearly straw cost of about $0.01/ft². Top layer is water impermeable.</td>
</tr>
<tr>
<td>American Excelsior</td>
<td>$0.10-0.14</td>
<td>Storage can be an issue. Water permeable.</td>
</tr>
</tbody>
</table>

The biggest problem was on the newly established green. Because the soil was not yet stable, until the ground froze, it was difficult to keep the spikes anchored in the ground. All the covers except the American Excelsior allowed the wind to provide enough lift that the spikes would pull loose from the ground.

(Continued on Page 8)
Other problems were also encountered. Some of the tabs for the Greenjacket covers did not adhere as they should have and allowed the covers to tear. You also cannot stake the cover with out the tabs. The grommets on the green/brown tarp could not always withstand the force from the wind and would tear off. We later learned that if we triple fold the edge of the tarp, the spikes didn't tear free. The Crane Creek cover also had grommets and some of the stitching in the tie downs tear off during a wind storm. Also, the straw removal for the Crane Creek cover was very laborious and you need to have a place for disposal or composting of the straw. Although there were no problems with the American Excelsior ripping or coming up, it did allow dirt that had blown onto the green from a nearby open field to filter down through the cover and leave a thin soil layer on top of the sand profile and the turf along the seams sometimes responds differently. American Excelsior are also very bulky and can create a storage problem. Noticeably, both the green/brown tarp and the Greenjacket stretch after the sun warms them. They were less prone to the wind pulling them off if they were spread out temporarily and allowed to warm before the final stretching and staking.

(Continued on Page 9)
No matter which type of cover is used, it is extremely important that fungicides be applied for the prevention of snow mold. Most of the covers retain moisture or allow the surface to remain wet for longer periods of time than uncovered turf. This increases the likelihood of having an incidence of typhula blight or microdochium patch.

This first year of data showed that all of the covers tested provided increased TQ and color ratings over the uncovered areas. However, it also showed that under differing site conditions each cover might perform differently. Therefore, it is important to take your specific factors into consideration when choosing the right cover for your greens. If you are in a site with very cold temperatures and little snow cover, you may want to use a Crane Creek or American Excelsior cover to provide some protection from low temperature injury. If your potential problem is crown hydration from excess water, you may want to use one of the water impermeable covers (Table 1). However, if your only concern is desiccation, any cover may work well. Finally, during open winters like the one we just had, covers can provide you with good quality turf 4-5 weeks sooner than when covers are not used.

We look forward to collecting the second years data and seeing how it compares.

Figure 5: Color ratings on the USGA green the day of cover removal and for 6 weeks after removal.

Color Ratings at St. Paul Campus

<table>
<thead>
<tr>
<th>Date</th>
<th>No Cover</th>
<th>Crane Creek</th>
<th>GreenJacket</th>
<th>Green Tarp</th>
<th>American Excelsior</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/19/2003</td>
<td>a</td>
<td>a</td>
<td>c</td>
<td>d</td>
<td>b</td>
</tr>
<tr>
<td>3/25/2003</td>
<td>b</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>4/17/2003</td>
<td>c</td>
<td>b</td>
<td>b</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>4/22/2003</td>
<td>d</td>
<td>c</td>
<td>c</td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>4/15/2003</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>4/28/2003</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

Bars labeled with the same letter within each date do not significantly differ (P=.05).

Below: An example of all treatments at the TROE Center on the day that the covers were removed, March 18, 2003.
Grigg Bros. Liquid Fertilizer Now Available Through

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