rangers as they stop me to give their version of how the golf course could be improved...aaahhh!!!

I wince because these innocent golfers and part-time workers have no idea how nasty...and how pain inflicting a golf course can be!!

Their only love/hate relationship is with the game of golf itself...which pales in comparison with the intense positives and negatives that are experienced by those of us in the golf business. See if you can spot yourself in the examples below:

- The tremendous amount of daily effort required to keep any golf course looking good...which translates into gruelingly long hours and endless hours at the old colf course... it's impossible to avoid.
- The great early AM feeling on a cool summer morning...things look good..."the entire crew showed up on time today... and they even seem to know what they're doing"...
- The incredible early morning or late evening beauty of a golf course either awakening for the day or settling down for the night. The evenings are especially great...and make me wish that I lived on a golf course.
- The incredible daily frustration of knowing that there's always too much to do...with a staff that requires lots of patience and training...resulting in problems and situations that could be avoided...if, if, if!!
- Golf course equipment that seems to have the ability to fail, break down, or generally misbehave with all too much regularity...resulting in problems and frustration that make too many days way too difficult! On the other hand...is there a choice?

If the new solenoid for our Multi-Pro 5200 comes in on a Friday...gets installed immediately...putting me back in action for fairway spraying just before a very busy upcoming weekend...there is no choice...another hard fought stretch of days coming up! Enjoy your weekend, Mr. Superintendent! It gets very old, doesn't it?

For all of these and other examples concerning the course itself...there are an equal number of interesting anecdotes concerning the operation of the clubhouse and the golf operation.

We of the outdoors tend to think of our problems as paramount, but the amount of pressure and work involved in operating a successful public course goes way beyond the golf course itself.

When one considers all of the golf outings, leagues, tournaments, and especially weekend open play...it adds up to an extremely long week for our director of golf. He is putting in about 12 hours daily...including weekends. He is also much more involved with our marketing, sales, and revenue generation....dealing with the money adds a lot of pressure!

He has an extreme case of a love/hate relationship with our golf course...he rarely sees his young family until about 8PM. It's so bad for him that he really wants out...on his hateful days.

And I do not blame him one little bit. He is just like all of the great superintendents that I know...guys that start out as young men totally willing to make the time sacrifice needed to make things prosper...to make the public golf course percolate nicely! As time passes...the business that we all love begins to wear on us...and the hate starts to creep into the relationship.

Fortunately for me, it's about a 80/20 love/hate thing...otherwise I hope I'd have the wisdom to move on to something else. What keeps a golf person sane...at least for me...is the daily freedom to move about the property and have really quite a bit of authority on what happens on the golf course.

We're now in our fifth season of owning this place...so we know each other well enough to know and understand all of the policies and procedures necessary for our mutual existence. I do not go out on a limb without good reason...and our senior owners rarely...in fact only about twice per year...venture out and make their 'official' inspection of the golf course.

So life out here on the golf course ebbs and flows...resulting in good times and satisfaction most of the time...with the negative stuff kept to a minimum by a combination of the determination to succeed and a constant awareness that our prosperity on this little old golf course does depend on what the public golfer experiences when he is here for the day.

A large part of that golfing experience is the golf course itself. Another large part of that golfing experience is the treatment that they receive from the golf staff. Both areas require lots of time, patience, and effort from all of us involved here.

In the end, we all feel fortunate to be able to bolster one another when things get tough. In this way, the love/hate relationship is kept in the proper perspective.

And truthfully...as with life itself...keeping the proper balance in your love/hate relationships on the golf course is probably the key to continued success.

There may come a day when I just don't want to continue doing this type of work...a feeling that it's time to move on to something else. That time will come when my love/hate relationship gets all out of whack and kilter...and forces me to the same crossroads that others have experienced.

The love/hate relationship within me...that force that lives within all of us...will tell me when it is time to consider an alternative.

For now though, the love/hate thing is controllable and in perspective...so I guess that means that I'll continue on with the 4:30-4:45AM daily risings from a warm and comfortable bed...usually bleary eyed and tired...and drag my butt out to the course...just so that I can greet the sunrise on my beautiful golf course. And isn't that just the nicest description of a lovely relationship that you've ever read? Or does it sound too hateful?



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#### MAY MEETING AT CEDAR CREEK COUNTRY CLUB

By Mike Lyons

Scot Spier at the Cedar Creek Country Club in Onalaska hosted the May meeting on Monday the 11th. It was a beautiful day for golf and the conditions were outstanding. A superb lunch of Cordon Bleu was served, followed by golf beginning at 12:30 p.m. The event was a four-man best ball and numerous flag events. The event winners are as follows:

FOUR-MAN BEST BALL

Bob Emmerich Lyle Christopherson Tony Baxter Paul Derezinski

FLAG EVENT WINNERS

Jeff Bahr Joe Bahr John Bahr Mark Kienert Paul Derezinski Shawn Hillard Byron Deaner

Following lunch, Dave Brandenburg introduced our guest speaker, Professor Stanley Nichols UW Extension-Madison. His informative and well-presented topic was on "Pond Management". Professor Nichols stated the importance of determining the type of problem you are dealing with before attempting any type of control. An example of these problems may be the various types of algae or the many types of aquatic plants that are causing problems in your ponds.

Types of control also vary. There are four types of control without the use of chemicals - Drawdown, Mechanical control, Barley straw, and Grass carp. Barley straw is still in the research stage and grass carp can cause more problems then it is worth and can be illegal. Chemical controls have not changed over the years. Copper sulfate is still widely used, but check the hardness of the water, it can effect the length of control. Chelated copper products give the best control because of its active ingredient, which will stay active much longer. They are very effective against bottom growing algae before

they become a problem. For aquatic plants, many herbicides are available.

Lastly, Professor Nichols suggested cutting cattails below the water in the late fall and let old man winter take care of them. It may take a few years to see success.

A special thanks to Scot Spier and the entire staff at Cedar Creek Country Club. The efforts were well appreciated by everyone in attendance.



Professor Stan Nichols of the UW-Madison was the guest speaker at the Cedar Creek CC meeting.



Cedar Creek captures the beauty of the coulee region of Wisconsin.



The May WGCSA meeting was hosted by Scot Spier.



Bob Lohmann, who designed Cedar Creek, was in Onalaska with some of his staff to play their creation.

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## **Summer Nights On A Golf Course**

By Monroe S. Miller

A couple of years ago, at the GCSAA conference, a speaker shared his program of night time maintenance of a golf course. Most of us in the audience wondered why in the world such a topic was selected for the program. It was an idea none of us wanted to hemorrhage to our golf course.

Night time on golf courses is pretty much associated with problems, misery and hassle. Long days are one thing; working at night is something else.

When the phone in my house rings late at night, it means one thing — irrigation system trouble. With the sound of the phone at 2:00 a.m. I jolt straight up in bed, eyes wide open. The sound of the synthetic voice is sickening: "There is a low pressure problem at the Lake Mendota pump station." It means getting dressed quickly, brushing my teeth just as fast, driving the four miles to work and then trying to figure out what's wrong and fixing it. No fun. And I don't get to sleep in the next morning to catch up on sleep, either.

For golf course superintendents my age and older, night time on a golf course was a part of the job not too many years ago; manual irrigation systems required it. Most of us, when we were young summer golf course employees, held the job at one time or another. Training our own young employees as years went by was part of running a well trained staff, as well. Spring and fall, and in emergencies, we were the backups, too.

In those youthful years, spending nights on a golf course was, by and large, a pleasant experience. Summer nights are cooler than summer days, and evening work can almost be refreshing. Night watering also offered a person solitude, something all of us need every once in a while. It also offered a certain degree of independence. You knew the work that had to be done and there was some flexibility in doing that. In youth, those kinds of chances are significant, especially when the job is as critical as irrigation.

But those nights were worrisome when I had young people working at the course. How many times — hun-

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dreds, probably — did I drive over to the shop during stormy weather in the middle of the night to be absolutely certain the night waterman was off the golf course? One night I remember particularly well, Mike Lee shortened my life by at least a year. A violent storm was throwing pitchforks of lightning all across the night sky. Thunder boomed. The wind was blowing. And by the time I arrived at the course it was raining buckets. I quickly unlocked the shop. No Mick. No Jim, who was training him. I tore onto the course with my truck to find them, fearing the worst because I was scared myself.

I found them immediately, pulling the last RB808 sprinkler from a quick coupler valve in the sixth fairway. Despite my relief (and over the pounding of my heart) we established a clear understanding of the dangers of lightning, steel underground water pipes filled with water, and brass sprinklers. Those too numerous experiences tend to amplify the negatives of night on a golf course!

Anyone who has worked nights on a golf course learned the lay of the land in a way that is impossible during light hours. In fact, the measure of an experienced night worker was the ability to maneuver around without vehicle headlights or a flashlight. The ability to use "night vision"

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and find quick coupler valves was an acquired one, if the attitude was there.

Independence and solitude and moderate temperatures aside, sometimes nights were, well, spooky. "Are those kids lurking in the woods near the fifteenth? Will that mongrel dog give chase to my Cushman again when I swing around by the seventh green? What was that weird noise I heard in the shop between sets? Gee, I'm kind of lonesome out here."

Every night waterman has experienced these emotions, and many more besides. In fact, we used to install farm tractor radios on Cushman trucksters used to water at night, just to keep the waterman company.

The night waterman has passed, mostly, into golf course management history, an indication of the times. And another sign of the times we live in is demonstrated by a policy that when night work is required now — most of it as emergency — two of us report. Safety issues are real, especially on a golf course like ours in the middle of town. Even if it is the safest town of its size in America, like ours is. That's kind of sad.

Although night work in recent years takes on an air of emergency, there are still times out there on the course at night that are intriguing and interesting and fun to experience after dark. The best are from the world of nature, not man.

Evenings and nights are filled with familiar insect sounds that come alive after dark — crickets and katydids and cicadas. Lightning bugs and moths are seen almost exclusively after dark, in my experience. And mosquitoes, which are bad enough in light, are deadly after sunset.

Some birds are most noticeable at night in the middle of a golf course. The insects that abound after dark are food for bats. I have always been amazed at how many bats are flying around whenever I have been at the course at night. They kind of give me the willys, but we now recognize how valuable they are. Many courses build bat houses to encourage them to take up residence there. Whippoorwills are, to me anyway, a nocturnal bird. Their plaintive song sounds like their name and is a clear sign that darkness is either near or it has arrived. For a number of years a big owl lived in a silver maple tree near the eighteenth green at our course. He was most active at night, hunting small wildlife that came out after dark.

In the last few years, a serious topic among golfers and, therefore, among golf course superintendents has been earthworms. Fairways, when many of us arrive at work early in the morning, have a few worms on the surface. But what we mostly see are the casts. You have no clue as to the magnitude of the population of earthworms living beneath the surface UNTIL you are on those fairways in the dark. They are literally teeming with earthworms, alive with them. It seems as if the entire fairway is moving when you look at it in the absence of light. You cannot walk across a fairway turf area and take one step without stepping on scores of them every time. A guy wonders how many you could harvest if you cut those fairways at night with baskets on the mowers! It's a sight you won't see in the daylight when the earthworms are in their burrows. Seeing is required for believing, and that will only happen at night.

A lot of animals can be seen on a golf course at night, even a course in the city. Rabbits are out feeding, raccoons are searching the perimeter of the pond or on a march to the clubhouse dumpster area where the pickings are easy. More than a few times a village animal control officer has (Continued on page 17)

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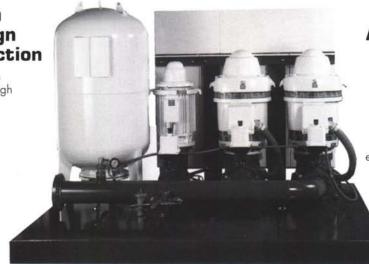
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(Continued from page 15)

come to rescue one that has fallen into a dumpster and cannot climb out. Mother possums with babies on their backs, a female fox and her kits, and all kinds of woodchucks can be found roaming around under the cover of darkness on our course.

These nights, a quiet moment in the middle of the course really is quiet. Gear driven sprinklers don't make much sound, unless it is the stream of water hitting the trunk of a tree in the rough occasionally. I will always enjoy the sound of the large aluminum impact arm of a Rainbird 808 sprinkler smacking into the stream of water from the brass nozzle. The rhythm of that sprinkler was reassuring. The quiet tonight may be broken by the sound of a train whistle — a track follows along our seventh hole and behind the sixth and the third — or the siren from an ambulance or squad car. Most likely, at home, you'd never notice. Even jets leaving the Dane County airport make their presence known in a way I never notice away from the course at night.

Because it is so dark on a golf course — no street lights, no businesses lit up, no car lights — the moon

looks like it does nowhere else. From bright yellow to milk white to pink, its color is accented by the dark blue/black sky. The pin prick light of stars is brighter, too. Heat lightning is something else to watch when your surrounds are completely dark.

Water, at night, is intriguing. On cool nights a mist rises from our pond that was warmed all day by the sun. And only at night have I ever listened for any time at all to the sound of waves from Lake Mendota lap the shore at our pump station.

Heat and humidity are marks of a Wisconsin summer, and they wear heavily on a golf course superintendent at times. The days are longest and the nights are shortest this time of year. But if you have a reason to be on the course at night it will give you a little needed relief. The evening hours are cool and refreshing and offer your senses that your course will make it through the next summer day.

Nights are good for golf turf and golf course superintendents alike. Darkness is never more welcome than it is in the summer.

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#### Phosphorus Requirement for Bentgrass Establishment in a Root Zone Mix

By Tim Cherwin University of Wisconsin-Madison

#### INTRODUCTION

Insufficient levels of soil phosphorus slow turfgrass establishment and retard root development (2). Turf managers are therefore advised to apply starter fertilizer P, but in accord with soil tests (1, 5). In Wisconsin, there is no information on the optimum soil P levels for bentgrass establishment in sand-based putting greens.

The purpose of this project was to identify the optimum soil test P level for bentgrass in a sand root zone mix. While this may seem like an easily researched topic, there may be a complicating factor. Applying N to turfgrass stimulates shoot growth that creates nutrient demand and stimulates P uptake. Hence, it is possible that the optimum soil test P level for turfgrass establishment varies with the rate of N application.

#### **METHODS**

The root zone mix used in this study was an 80/20 blend purchased from Wolosek Landscaping. The sand in the mix meets USGA requirements. The mix has a pH of 6.4, contains 2.1% organic matter in the form of peat humus, and has 6 ppm P as determined by the Bray-1 method.

Bulk samples of the mix were equilibrated for 2 weeks with 0, 10, or 30 ppm P applied as monopotassium phosphate. A fixed weight of each mix was weighed into each of nine pots. All pots had 1.0 lb N/M in the form of Scotts 29-3-4, shallowly incorporated before seeding to Penncross' creeping bentgrass. Emergence of the grass began 7 days after seeding. One week later, the pots were divided into three groups for weekly application of 0.2, 0.4, or 0.8 lb N/M in the form of a urea solution.

The bentgrass was clipped at 0.5 inch 1 month after seeding and three more times at 7-day intervals. All clippings were oven-dried and weighed. There was not enough time in some

treatments for P analysis. Therefore, all four clippings were combined, ground, and analyzed for P.

#### **OBSERVATIONS**

By the time the bentgrass seedlings were ready to clip, P deficiency symptoms were evident where no P was added to the root zone mix. These symptoms were in the form of bluish-green coloration and narrowed leaves. Clipping weights of the P deficient bentgrass were one-seventh the weights of non-P deficient treatments. Over time, the tips of the P deficient bentgrass became discolored, taking on a reddish-orange color. According to Love (4), these are symptoms of severe P deficiency.

The data gathered in this study are summarized in Table 1. The clipping weights clearly show that P levels controlled bentgrass growth. At each root zone mix P level, there was no response to increasing N rates. However, N did influence clipping P concentrations. Increasing the N rate significantly decreased clipping P concentrations.

A fundamental assumption in this

study is that bentgrass clipping weights were an index of bentgrass establishment. Thus, the first approach taken to identify the optimum soil P level was to examine the relationship of clipping weight to soil P level. This relationship (Fig. 1) suggests that when averaged over all N rates, the optimum P rate was around 25 ppm.

To examine whether or not N rate affected the optimum soil P level, clipping weight was simultaneously related to N rate and soil P by way of multiple linear regression. The resulting equation was used to calculate at each N rate the soil P required to produce 440 mg/pot of clippings. These calculations revealed optimum soil P levels of 25.7 ppm P at 0.2 lb N/week, 28.9 ppm P at 0.4 lb N/week, and 29.0 ppm P at 0.8 lb N/week.

By observing how much 10 and 30 ppm fertilizer P increased soil test P levels in the root zone mix, it was possible to estimate the amount of fertilizer P2O5 that is equivalent to 1.0 ppm soil test P. Depending on the amount of fertilizer applied, the ratio of P2O5 ppm/ppm soil test P

Table 1. Fertilizer N rate and soil P level effects on creeping bentgrass clipping weights and clipping P concentration.

N rate Soil P Clipping weight Clipping P lb/M/week ppm mg/pot %

lb/M/week	ppm	mg/pot	%
0.2	6	79	0.21
	12	301	0.50
	27	439	0.70
0.4	7	78	0.20
	12	286	0.36
	29	424	0.52
0.8	7	72	0.15
	13	285	0.24
	29	420	0.34
LSD $(p = 0.05)$		72	0.08

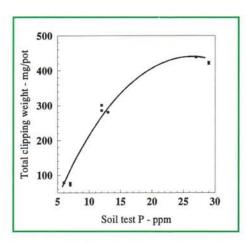


Figure 1. Relationship between bentgrass clipping weight and soil test P (Bray-1).

ranged from 3.2 to 4.1 and averaged 3.6. This ratio becomes useful only when expressed as lb/m P2O5/ppm soil test P. By assuming 1 inch to be the optimum depth of fertilizer

incorporation as found by King and Skogley (3) and the laboratory measured mix bulk density of 98 lb/ft2, the ratio of the weight of fertilizer P2O5 to soil test P was found to be 0.028 lb P2O5/ppm P.

#### CONCLUSIONS

For the acid (pH 6.4) root zone mix used in this study, indications were that a soil test level of at least 25 ppm P was required for rapid bentgrass establishment. This optimum soil test P increases as the rate of N application increases. Increasing the N rate from 0.2 lb/M/week (4.8 lb in a 24-week grow-in year) to 0.8 lb N/M/week (19.2 lb N for grow-in) increased the soil P requirement by about 4 ppm.

To calculate the P2O5 requirement of a root zone mix similar to the one used in this study, three pieces of information are needed: (1) the present soil test P level of the mix, (2) the desired (optimum) soil test P level, and (3) the conversion factor of 0.028 lb/M P2O5/ppm soil test P. In the present case, the initial soil test P was 6 ppm and the optimum was 30 ppm. Therefore, the appropriate rate of starter fertilizer P would be (30

ppm - 6 ppm) (0.028 lb/M P2O5/ppm soil test) = (24) (0.028) = 0.67 lb P2O5/M.

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Tim Cherwin is a May 1998 graduate of the Univ. of Wisconsin-Madison Turf and Grounds Management Program.

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