

Table 5.
Total Nitrogen Fertilization on Putting Greens
in the 1989 Wisconsin Survey

Total Nitrogen for 1989 Pounds of N/M	Number of Golf Courses
1.0	0
1.5	5
2.0	4
2.5	5
3.0	5
3.5	2
4.0	0
4.5	1
5.0	0
5.5	1 ¹
6.0	1 ¹
6.5	0
7.0	1 ¹

¹Two year old putting greens

gen applied correlates closer to higher bentgrass populations.

Table 6 lists all of the nitrogen fertilizers used from April to October on the 25 golf courses in this survey. It is included only for your information and I am certainly not going to comment on which products are better than others; I'll let the numbers speak for themselves. Nitrogen fertilizers used for late fall and dormant applications are listed in Tables 8 and 9, and will be discussed later.

Table 6.
Sources of Nitrogen Fertilizer Used on Putting Greens
from April-October in 1989 Wisconsin Survey.

Source of Nitrogen	Number of Users
Andersons 18-3-12	1
Custom Blended 8-0-12	1
IBDU 31-0-0	1
Lebanon 18-4-10	2
Lebanon 33-0-16	4
LESCO Iron Plus N	7
Milorganite 6-2-0	8
Nitroform 38-0-0	2
Nutriculture 28-8-18	9
Nutriculture 12-45-10	2
Scotts 22-0-16	3
Scotts 20-4-8	1
Scotts 17-23-6	1
Scotts 31-3-10	1
Scotts 15-0-30	9
Spring Valley 25-0-25	1
Spring Valley 12-4-8	1
Spring Valley 5-1-10	1
Spring Valley 6-1-12	1
46-0-0	5
12-62-0	3

Sources of nitrogen applied in October at a rate of 0.25 pounds of N/M or greater are listed in Table 8. All sources of nitrogen applied in November are listed in Table 9.

Table 7 lists the nitrogen applied monthly from April-November. Since the popularity of nitrogen rates and timing can easily be found in the table, I will only point out the continuing trend towards applying the majority of nitrogen in the fall. In fact in this survey, an average of over 60 percent of the total nitrogen is applied in September-November with 34 percent of that coming in November alone as a dormant treatment.

When analyzing the rates and timing for nitrogen applications in Table 7 together with bentgrass-*Poa annua* population values found in Table 3, the following general patterns emerge:

For putting greens with over 75 percent bentgrass:

- 1) No nitrogen before mid-May.
- 2) Spoon feed soluble nitrogen at 0.15 pound of N/M every three-four weeks from mid-May to mid-September.
- 3) Late fall nitrogen in mid-October at 0.25-1.0 pound of N/M.
- 4) Dormant nitrogen in November at 0.9-1.5 pound of N/M.

Table 7.
Monthly Nitrogen Fertilization on Putting Greens in the
1989 Wisconsin Survey.

Month	No. of Golf Courses Making an Application	Range of Applications Pounds of N/M	Avg. of Applications Pounds of N/M
April	5	0.05-0.50	0.12
May	22	0.05-1.00	0.30
June	21	0.05-0.90	0.25
July	16	0.05-0.50	0.16
August	13	0.05-0.50	0.12
September	25	0.05-0.50	0.30
October	16	0.05-1.00	0.32
November	20	0.25-1.50	0.82

Average yearly nitrogen application is 2.49 pound of N/M.

For putting greens with less than 75 percent bentgrass

- 1) May 15-June 10, one or two nitrogen applications totalling 0.5-1.0 pound of N/M.
- 2) June-August, granular and soluble nitrogen at 0.25 pound of N/M each month.
- 3) Early September, one nitrogen application at 0.5-1.0 pound of N/M.
- 4) Dormant nitrogen in November at 0.25-1.0 pound of N/M.

Table 8 lists the sources of nitrogen used for late fall fertilization. For the purpose of this article, late fall nitrogen fertilization is defined as applying at least 0.25 pound of N/M after October 1 and before any dormant nitrogen treatment.

As mentioned in the discussion of Table 7, the majority (75 percent) of the users of the late fall nitrogen fertilization technique are managing putting greens with over 75 percent bentgrass populations. Note that the nitrogen availability of most of the fertilizers in Table 8 is not temperature dependent.

Table 9 lists the sources of nitrogen used for dormant application. Slow release nitrogen fertilizers, whose WIN components are temperature dependent due to microbial activity, dominate the list. A strong preference for one product, Milorganite 6-2-0, indicates that superintendents are looking for very specific responses from their dormant applied nitrogen.

As I already touched on in my discussion of Table 7, putting greens with over 75 percent bentgrass populations are dormant fertilized at rates of 0.9 to 1.5 pound of N/M, usually with Milorganite, 6-2-0. Putting greens with less than 75 percent bentgrass populations receive dormant nitrogen at rates of 0.25-1.0 pound of N/M that is supplied by all of the products listed in Table 9.

Table 8.
Sources of Late Fall Nitrogen Fertilizer Used on Putting Greens in the 1989 Wisconsin Survey.

Source of Nitrogen	No. of Users	Range of Applications	
		Pounds of N/M	Avg. of Applications Pounds of N/M
IBDU 20-0-16	1	1.00	1.00
IBDU 31-0-0	1	0.50	0.50
Nutriculture 12-45-10	2	0.25	0.25
Scotts Fertilizer & Fungicide	1	0.50	0.50
Scotts 22-0-16	1	0.90	0.90
Scotts 15-0-30	4	0.50-1.00	0.75
Spring Valley 12-4-8	1	0.75	0.75
46-0-0 Soluble	4	0.50-1.00	0.60

Late fall nitrogen fertilization is defined as applying at least 0.25 pounds of N/M after October 1 and before any dormant nitrogen treatment.

Table 9.
Sources of Dormant Nitrogen Fertilizer Used on Putting Greens in the 1989 Wisconsin Survey.

Source of Nitrogen	No. of Users	Range of Applications	
		Pounds of N/M	Avg. of Applications Pounds of N/M
LESCO 14-0-28	1	0.75	0.75
Milorganite 6-2-0	12	0.36-1.50	0.90
Scotts 22-0-16	1	0.50	0.50
Scotts 15-0-30	4	0.25-1.00	0.75
Scotts FFI	1	0.50	0.50
Spring Valley 6-1-12	1	0.50	0.50

Dormant nitrogen fertilization is defined as applying nitrogen fertilizer in November.

Phosphorus fertilization (Note: In this article, phosphorus is elemental P and not P_2O_5) on putting greens reveals some striking differences in management programs. Seven golf courses in this survey are using no phosphorus in apparent attempts to reduce *Poa annua*. The three new golf courses apply phosphorus at average yearly rates of 5.0 pounds of P/M. The remaining 15 golf courses apply phosphorus at yearly rates of 0.2 to 1.3 pound of P/M with an average of 0.5 pound of P/M. On these same 15 golf courses, extra phosphorus is sometimes applied to the one or two new sand based greens at a yearly rate of 0.5 pound of P/M.

Although seven golf courses are using no phosphorus, several superintendents commented on both the fallacy of trying to control *Poa annua* with low phosphorus fertilization as well as the need to apply a fertilizer containing nitrogen, phosphorus and potassium, even when soil tests indicate adequate levels of phosphorus and potassium. They favor balanced nutrition with properly timed nitrogen applications along with cultural practices to control *Poa annua*. In fact, it turns out that many of the golf


courses with the highest bentgrass populations on their putting greens have been applying yearly phosphorus rates of 0.4-0.6 pound of P/M for many years.

In general, phosphorus applications are made as part of a complete fertilizer containing nitrogen, phosphorus and potassium. There are two exceptions, however. The first involves four golf courses that apply a single Spring application of soluble 12-62-0 at an average rate of 0.30 pound of P/M. The second, takes into account the eight golf courses that use Milorganite, 6-2-0, during the season and the 12 golf courses that use Milorganite as a dormant nitrogen treatment. In 10 out of these 12 golf courses, the dormant phosphorus applied in Milorganite makes up 80 percent of the total phosphorus applied for the entire year.

Ideas about potassium fertilization (Note: In this article potassium is elemental K, not K_2O) are undergoing some dramatic changes. For years, the classic recommended N-K ratio was approximately 2-1 (Remember, K is expressed as elemental K, not K_2O).

In recent years, however, many superintendents have begun to use N-K ratios of 1-1, 1-2 and even 1-4 (The overall topic of N-P-K ratios will be covered in the discussion of Table 11.).

The increase in potassium use is due to the increases in disease resistance, drought tolerance and winter hardiness that have been attributed to potassium fertilization programs. Many of us seem to be applying the old saying that "If a little bit is good, more will probably be better." It must be pointed out, however, that most of the nation's turfgrass researchers are sticking to the traditional N-K ratio of 2-1. Some have even suggested that N-K ratios such as 1-2 and 1-4 may alter the soil chemistry enough to cause deficiencies of calcium and magnesium.




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In response to the increased demand for potassium fertilizers, several companies have come out with products that apply nitrogen and potassium in ratios of 1-1 and 1-2. Those superintendents who want even more potassium are applying additional potassium sulfate, mainly in the Spring and Fall at rates of 0.5 to 1.5 pound of K/M per treatment.

Table 10 lists the seasonal variation of potassium fertilization on putting greens. Potassium application rates parallel nitrogen application rates (see Table 7). Both are applied at moderate rates in the Spring, sparingly in the Summer and the heaviest applications occur in the Fall. The average yearly application of potassium is 3.07 pounds of K/M. When compared to the average yearly nitrogen application of 2.49 pounds of N/M (see Table 7), the N-K ratio is 2.49-3.07 which factors out to 5-6. It appears then, that many of us are entering some uncharted fertility waters with our ever increasing use of potassium.

Table 10.
Seasonal Potassium Fertilization on the Putting Greens in the 1989 Wisconsin Survey.

Season	Range of Applications	Average of Applications
	Pounds of K/M	Pounds of K/M
April & May	0.40-3.50	0.92
June-August	0.40-3.50	0.55
September-November	0.50-5.00	1.60
Total for the Year	1.30-12.00	3.07

Values are expressed as elemental potassium, not K₂O.

In my individual discussions of N, P and K fertilization programs, the ranges and averages for the application of these three nutrients is well documented. In my discussion of N-P-K ratios, I am going to deal with proportions of N, P and K rather than the actual values. For example: A N-P-K ratio for the actual pounds of N, P and K/M used on a putting green in one year might be 2.6-0.3-1.7. Comparing 25 different such values as this is difficult; so I convert the values by multiplying the N, P and K by a factor that changes the P value to a whole number and then round the N and K values to the nearest whole number. Thus an actual value of 2.6-0.3-1.7 becomes a modified value of 9-1-6. These modified values are much easier to compare. In a similar fashion, all 25 values for actual N-P-K ratios have been modified to the ratios found in Table 11.

The ratios in Table 11 are divided into three groups; N greater than K, N equal to K and N less than K.

The N greater than K group contains the six golf courses that come closest to matching the traditionally accepted ideal N-P-K ratio of 7-1-4 (based on elemental N, P and K).

The N equal to K group, with 11 golf courses, accounts for the most popular N-P-K ratio. In addition, I find it extremely interesting that all seven of the golf courses that do not use phosphorus fertilizer have a N equal to K ratio.

The N less than K group represents the eight superintendents who are breaking new ground in putting green management. As you can see from the ratios, some are using two to four times as much K as N.

The average ratio for all 25 golf courses is 13-1-16 as compared to the traditionally accepted ideal ratio of 7-1-4. It is obvious, then, that putting green fertilization in Wisconsin is evolving away from traditional standards and to-

wards a new era of proportionately less N and P and more K.

Table 11.
N-P-K Fertilization Ratios on Putting Greens in the 1989 Wisconsin Survey.

N-P-K Ratio	Number of Golf Courses
N greater than K	
3-1-2	4
20-1-10	2
N equal to K	
1-0-1	7
15-1-15	3
40-1-40	1
N less than K	
2-1-6	2
5-1-10	3
20-1-30	2
12-1-48	1

The average N-P-K ratio for the 25 golf courses is 13-1-16. The derivation of the ratios is explained in the text.

Although N, P and K remain the three dominant elements in putting green fertilization, secondary nutrients (Ca, Mg and S) and micronutrients (Fe, Mn, Mo, Zn, Cu, B, Cl) are also generating some attention.

The use of sulfur is being limited by some superintendents in response to the "Black Layer" situation. This will be discussed further in the second part of this article.

Table 12.
Sources of Iron Fertilizer Used on Putting Greens in the 1989 Wisconsin Survey.

Source of Iron	Number of Users
Agriplex 0-4-4-5 Fe	3
Ciba-Geigy Fe330	4
Iron Sulfate	9
Microgreen	4

This table contains only those iron fertilizers not already listed in Tables 6, 8 and 9. Iron application range is 0.25 to 4.5 pounds of Fe/M. Iron application average is 0.80 pound of Fe/M.

Two golf courses add small amounts of magnesium sulfate (0.25 to 0.5 ounces of MgSO₄/M) to their regular soluble fertilizer applications. The reasoning is that supplying additional magnesium, the central atom of chlorophyll, will enhance the green color without increasing nitrogen application.

When it comes to micronutrients, many of the fertilizers listed in Table 6, 8 and 9 contain sufficient amounts to supply the needs of putting greens. Iron is the only micronutrient thought to be needed in amounts greater than that supplied by the above mentioned fertilizers.

Each of the 25 golf courses uses at least one of the iron containing fertilizers listed in Tables 6, 8 and 9. Additional iron fertilizers are given in Table 12. Single application rates can vary from 0.01 pound of Fe/M with soluble fertilizers up to 0.7 pound of Fe/M when using Milorganite, 6-2-0-4 Fe, as a dormant fertilizer at the rate of 1.0 pound of N/M. These rates place iron fertilization ahead of phosphorus fertilization at 18 of the 25 golf courses.

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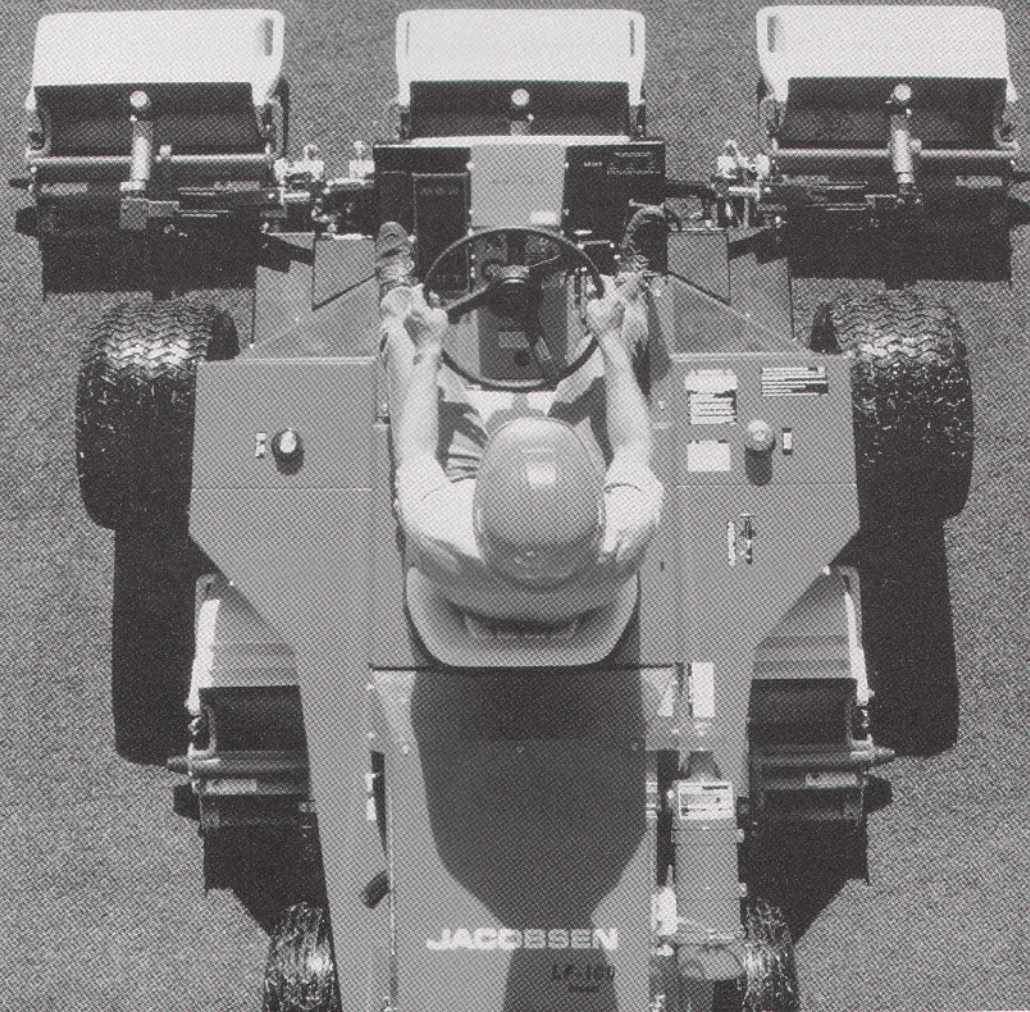
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The reason for iron's popularity is its ability to enhance the synthesis of chlorophyll which results in greener color without increased nitrogen use. Putting greens in Wisconsin also respond favorably to iron applications because of cooler soil temperatures throughout much of the growing season that limit the microbial release of iron from organic sources along with pH levels that are just high enough to start limiting iron availability in the soil.

Before concluding this discussion of putting green nutrition, I feel it is necessary to stress the importance of regularly scheduled soil testing. Pick a reputable soil testing laboratory that uses extraction procedures that are calibrated to Wisconsin soils. Be sure to submit representative samples that are the depth recommended by the soil

testing laboratory. Testing every two years will assure you of staying on top of any changes in the nutrient levels in your putting greens.

The second part of this article will appear in the next issue of the *GRASS ROOTS*. It will cover the following aspects of putting green management in Wisconsin.

Aerification	Mowing
Spiking	Irrigation
Verticutting	Pesticide Applications
Rolling	Winter Protection
Turf Groomers	Snowmold Control
Top Dressing	<i>Poa annua</i> Control
Overseeding	Changing pH's
Wetting Agents	Additional Special Topics

CEDAR CREEK: Birthplace Of A Golf Course

(Part One)

By Pat Norton

Have you ever been involved in "bar talk"? Bar talk, by definition, is when avid golfers get together in post-round situations and begin discussing golf courses. I personally have had bar talk conversations with people ranging from golf professionals and club members to our pediatrician and fellow church members. They all assume that since I work in the golf course business I must really love talking about golf courses.

The conversations usually go something like this — "Have you ever played Hole in the Woods?" or "How about that third hole at Okeechobee Mounds?" Closer to home, every superintendent has probably been cornered and asked about remodeling those two or three bad greens, adding a dozen sand bunkers, and building those long needed ladies tees (now known as front tees). Usually the idea is that all of these projects will be absorbed into the existing maintenance budget, accomplished with in-house labor, and completed before the end of the year.

"Wouldn't that be great? Let's talk to the green committee about that, right guys? If they don't agree, then we should get together, buy some land, and build our own golf course! Membership here at Prairie of the Swamps is too darn expensive anyway!" That, my friends, is called bar talk.

The point is that golfers do love to talk and they do love to dream. Sometimes that's how new golf courses come into being. Cedar Creek is the result of one man's dream coming to fruition on 200 beautiful acres between Onaska and Holmen in La Crosse County.

Initial site visits involved Terry Clemons, original project developer, and Bob Chalsma, project engineer. These preliminary visits determined site suitability for residential development. After Bob Lohmann was retained as golf course architect it was soon determined that the site was very suitable for golf course as well as residential development.

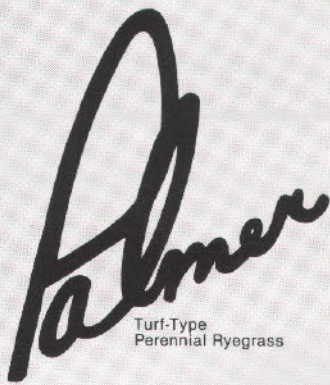
This site is close to La Crosse and will be within one mile of the new freeway connecting up with I-90. It also has 120 feet of elevation change, dense woods over some of the site, sandy soil in many places, and some really spectacular views — all great features for a new golf

course project. But the key to starting this project was the availability of and accessibility to high quality residential lots on the property. These 1 to 1¼ acre lots range in price from \$40,000-\$65,000 depending on location, accessibility, and view.

After determining that the site was indeed suitable for this type of development, the golf course portion of the project began. Preliminary clearing and grading on holes four and five began in October 1987. These two holes were constructed on extremely hilly and wooded land. It seemed impossible, in my amateur view, to build golf holes through this maze of natural features. Where is the green supposed to be? Puzzlement was quite literally my attitude in the early stages of Cedar Creek. I couldn't imagine the land changing its appearance so abruptly and completely. But through the assurance of Phil Sage, project architect for Lohmann Golf Designs, I soon began to understand the grading plans and see what was happening. And there was a lot of finality in the three Cat D-6 dozers daily moving out trees and knocking down hills in enormous quantities. I got into the construction mode quickly.

Engineering, survey and layout, and construction itself continued in April 1988. As work proceeded, everybody quickly learned to trust the design plans, the layout stakes, and the earthmoving operators. Charlie Kisow and I were responsible for on-site project supervision, which meant anything from surveying, to lining up construction materials, to daily communication with the contractors. We were both relatively inexperienced at this earthmoving game, however, so it worked out best in the early stages to trust Terry Links' judgment. It was always stressed to us by Bob Lohmann that we were looking for a certain quality in the finished product. How it was achieved — the mechanics and methods — was Terry's decision as the primary earthmoving contractor. Daily cost figures were kept and periodic assessments were made — total hourly machine costs divided by total estimated yardage moved equals cost per yard. These costs were constantly compared to budget and shared between Terry Link and ourselves to insure that the earthmoving stayed on budget.

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All Star	5.6	Elka	5.1
Ranger	5.6	Manhattan	5.1
Birdie II	5.5	Citation	5.0
Fiesta	5.5	Linn	3.4
Pennant	5.5		

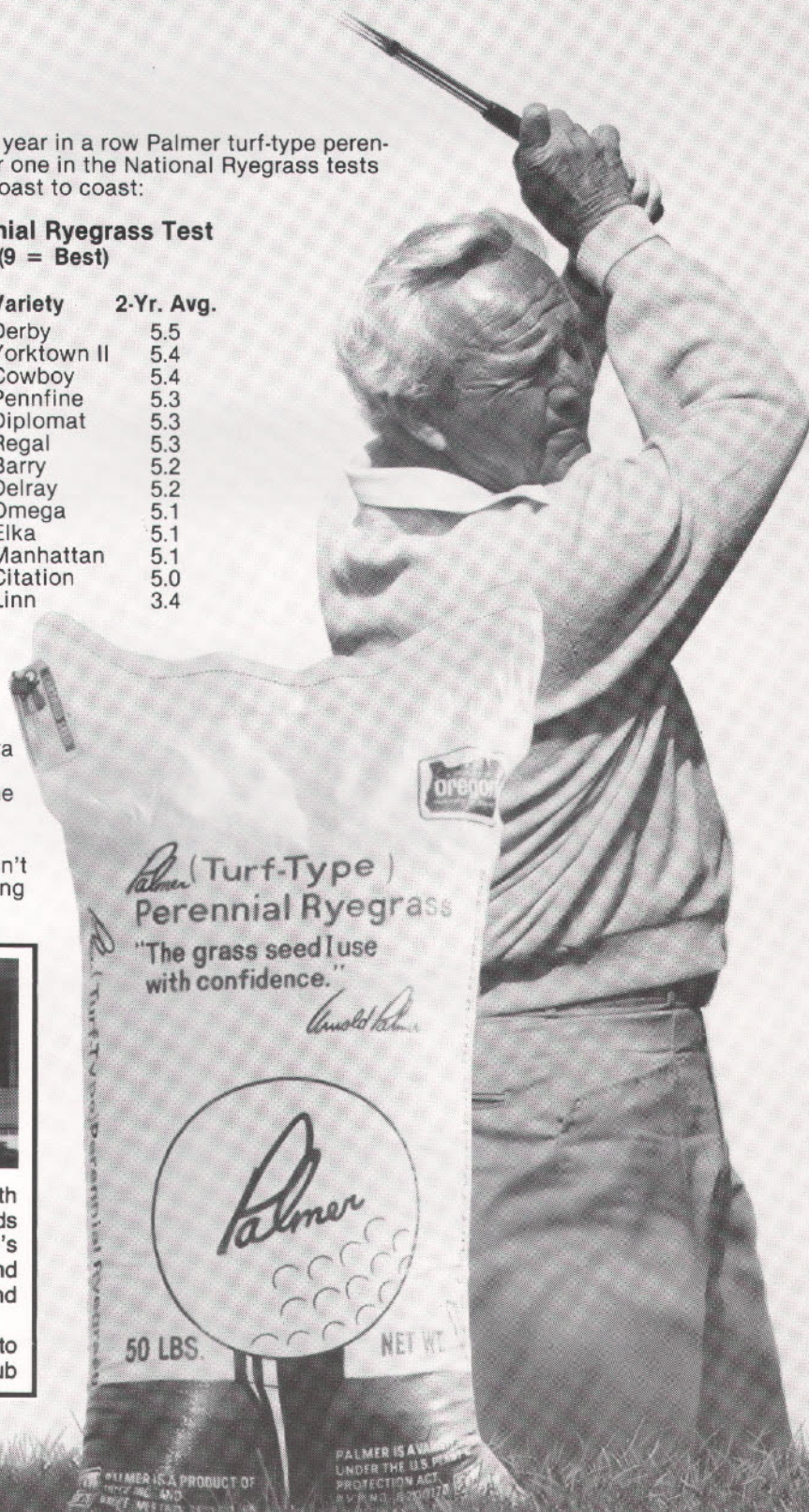
It's no wonder courses like Bay Hill in Florida, Shinnecock in New York, PGA West in California and Sahara in Nevada are only a few of those that are demanding the excellent performance of Palmer.

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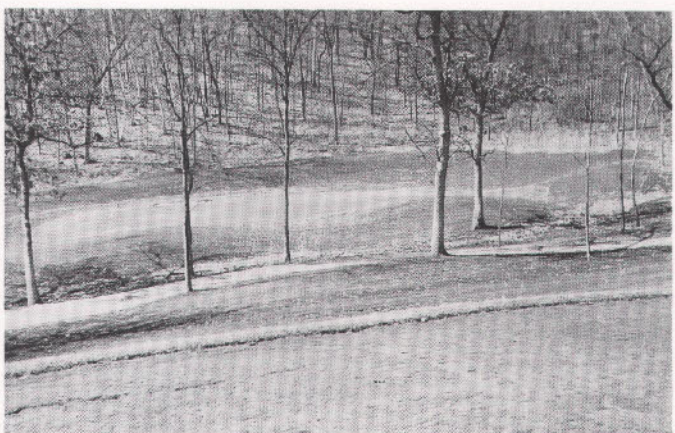
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A view of the fourth and fifth holes looking back from no. four green.

The early months of the 1988 construction season involved a lot of stopping and starting on this entire project. The original developer was unable to acquire the investors necessary to finance the project and was finally forced to sell out completely. The people who took over fortunately continued on with the original plans and contractors. By this time we were staring the Fourth of July square in the eye and knew full well that we'd all have to work a lot of overtime in order to get even nine holes seeded in 1988. After reworking our construction schedule we still felt that this goal was possible, if the weather cooperated. After numerous meetings with our new clients the decision was made to go ahead with the project.

At this point we still had quite a lot of earthmoving yet to do, but also had three greens that had been shaped to subgrade by Scott Schaul of Midwest Golf Development. Scott has been in golf construction as a finish shaper for quite a number of years. He was involved with his father, Hank Schaul, in many projects in earlier years. The Reedsburg Country Club addition in the late 70's saw the involvement of both Scott and Hank, Bob Lohmann and Randy Witt, currently of the Oneida Golf and Riding Club.



No. four green is far up in a coulee (valley) — could well be a disease hotspot.

We now had construction in various stages happening over about half the site. All of this organized chaos does require careful planning and organization. We had no time to waste or rain days to lose, and fortunately for us there was a big drought in progress. Few days were lost to the weather. Usually the best planning took place at day's end over a case of Old Style. Everybody was able to hash over progress to date and examine upcoming tasks. There were



The fifth hole at Cedar Creek — a very breathtaking hole. The elevation drop 40' from tee to landing area.

also numerous midnight discussions between a "fully krauzened" Scott Schaul, the voice of experience, and me, the groggy wake-up victim.

After green sites were filled or cut to within six inches of plans by the mass grading contractor, Scott shaped the green to subgrade with a John Deere 550B dozer. This dozer was used for all green, tee, bunker, and mound shaping. The tiling crew came in next and installed four-inch tile backfilled with 1/4" washed pea gravel. Schaul then returned and ringed in the entire putting and bunker surfaces with topsoil. The next step in this process was to bring in and place a four-inch blanket of pea gravel, followed by two inches of coarse sand (in this case it was actually called rice gravel). The pea gravel was finish smoothed with a Toro Sand Pro, while the rice gravel could only be smoothed using aluminum landscape rakes.

Our rootzone mix was provided by Waupaca Materials/Greensmix in conjunction with a local contractor. We topped off all greens with 12" of mix that consisted of 80 percent medium textured sand and 20 percent Canadian sphagnum peat. The specifications for the top mix were supplied by Judith Gockel of Agri-Systems in Texas. We felt that this testing by an independent source was money well spent. We did have some problems with rocks in the delivered mix. This we attributed to loader operators picking up rocks with their huge buckets of peat. There were also a few problems working the bugs out of Waupaca's new blender, but everything was solved to mutual satisfaction. I'm very happy with the quality of the delivered mix although I am keeping my fingers crossed that there aren't many rocks hiding in my greens.

The irrigation design and equipment were provided by Reinders Irrigation. They recommended Toro 660's and 680's for this application, with the Network 8000 satellites, central controller and computer. The irrigation installation was subcontracted by Reinders to Leibold Irrigation of Dubuque. I first met John Leibold in 1987 and feel fortunate to have had him install our irrigation system. He and his men all had good previous experience, worked very hard, and throughout the job took the time to do quality installation. If anybody out there needs irrigation installation, contracting with John Leibold will not be a mistake. The jury is still out on the Toro 660's and 680's as far as I'm concerned. So far, I'm not impressed.

After irrigation installation the green area is then finish graded and smoothed for sodding and seeding. This step is very much a transitional one. Up to this point the entire

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area is still a construction zone, but once finish grading takes place, the area has to stay perfectly smooth. Add in the time pressure to get the seed or sod in place during the optimal seeding period and you can probably guess how frustrating the seeding phase can be.

Sodding of these green, tee, and bunker areas is really enjoyable. During this phase everybody gets their first taste of how the features will look. We sodded around the edge of each tee, green, and bunker with two widths of bluegrass sod in order to give exact definition to the various shapes of the features. In this phase the idea is to be liberal, using sod instead of seed where possible. For example, all bunker fingers are sodded, as is the entire surrounding area. Our sodding budget allowed for 16,000 square yards of bluegrass sod, of which 9,000 square yards were used in 1988. In 1989 we'll probably go far over budget due to some very severe areas needing to be sodded.



Four year old John Ryan looks back and says, "Give me a ride on your shoulders, Dad, that hill is too big."

Actual seeding began on September 1 with hydroseeding of severely sloped, hard-to-reach roughs and hillsides with a Kellogg blend of fine leafed fescues. The hydro-

mulching then followed in a completely separate operation, as we didn't want any seed getting caught in the mulch instead of the soil. Roughs were seeded with a different Kellogg blend of 40 percent perennial ryegrass, 30 percent Kentucky bluegrass, and 30 percent fescues — all improved varieties. Greens, tees, and fairways were all seeded with certified Pennncross treated with NutriKote plus Apron. Pennncross may give us some heartaches down the road on our fairways, but should perform nicely on tees and greens. All seeding, except for hydroseeding and putting surfaces, was accomplished with Brillion seeders. All Pennncross was blended with Milorganite to insure accuracy and ease of handling. Seeding straight Pennncross without Milorganite as a carrier is not advisable.

Overall, this project made great strides in 1988. Many times it seemed as if there would be no Cedar Creek. But, with good planning and design, good construction technique, and great on-site supervision by Midwest Golf Development, the project prevailed. Midwest Golf had no easy task controlling this project. We were under the guidance of Lohmann Golf Designs, but had big responsibilities in our own right. These responsibilities included project supervision, layout, shaping and feature construction, drain tile installation, finish grading (with tractors, culti-mulchers, harrows) of all large areas, finish grading of all small areas (with rakes and a lot of effort), brushing, and all seeding operations. That's a lot of responsibility. Then add in the fact that I left Midwest Golf in September to become the superintendent for Cedar Creek. That gave even more responsibility to Charlie Kisow, who replaced me. Charlie proved up to the challenge and did a fine job.

The original construction schedule called for completion of the entire course in 1988, but due to financial delays, we scaled back to finishing nine holes in '88 with completion of seeding in spring 1989. We hope to open our first nine around August 1, 1989. The second nine will be seeded this spring, which I dread. But we have no choice. The second nine should be ready to open by May of 1990. Progress on the finishing of this project will be reported on in a future issue.

Reinders Brothers Turf Conference and Show

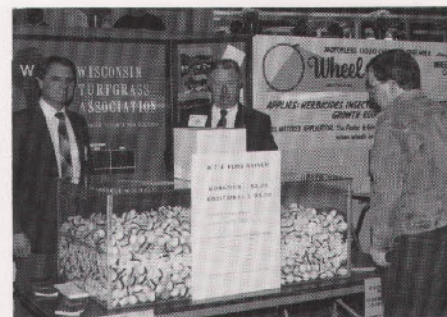
By Randy Smith

"The customers made it possible" were the words from Reinders Sales Manager Ed Devinger in describing Wisconsin's largest turf and irrigation conference, equipment show, and service clinics. The conference and show was sponsored by Reinders Brothers, Inc. from Elm Grove, Wisconsin and was "staged" in the Waukesha County Expo Center this past March.

The Center was literally "bulging at its seams" with an attendance of over

1600 persons for the two day event. Weather cooperated too! In addition to the educational sessions, workshops, and clinics, over 34 exhibitors displayed their products and equipment.

The sessions began with the ever popular coffee and donuts and ended with door prizes, refreshments, and conversation. All in all, it was a very successful event to help prepare us for the long season ahead.



How many?



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Reinders sales staff.

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