



Catching Up On The News

By Monroe S. Miller

It's finally going to happen — the Golf Course Superintendents Association of America is going to build a new headquarters building. I'm 100% behind this project, as is anyone who has visited the current GCSAA building in Lawrence, Kansas.

The building we now operate from (and own) is a beauty, but it is simply too small. The people who work for us are crammed into quarters too tight for comfortable and efficient operation. Talk about a new building moved to action during an officers' meeting at the U.S. Open in Rochester, New York. They approved schematic plans for the project, clearing the way for the architect to complete details of the design.

The current building is located on the Alvarado Golf & Country Club; the new building will be, too. The new site is west of the current building by about a mile. The difference is that it will be on a new 18 hole golf course. Seems fitting, doesn't it? Plans call for a groundbreaking in early 1990 and occupation in the summer of 1991.

The building is going to be big — 35,000 square feet spread over four stories and an attached classroom and meeting facility. And it is going to be expensive, costing \$4 million.

The planning has made provisions for future expansion. Given the growth of golf in America, they may have to do that sooner than anyone thinks!

Since I'm on the subject of the GCSAA, hats off (to us) for the generous GCSAA contribution to the USGA Turfgrass Research program. The donation of \$25,000 was made during the USGA/Golf Writers Association of America banquet during the U.S. Open in Rochester.

The research committee has distributed over \$2.8 million to turfgrass studies since 1983. There are currently 25 research projects funded by the program.

Happiest of all was Bill Bengeyfield, National Director of the USGA Green

Section. A sum like \$25,000 is distinct approval of the direction the research is going.

The early season was rough on trees. They had a difficult year last year because of the drought. Now the bugs are after them. There was the usual worry this spring about gypsy moths, the usual ration of tent caterpillars, the usual problem with birch leaf miners.

But in our town and on our golf courses, seldom have we seen aphids on ash and honey locust like we did in late spring and early summer. Many trees were nearly totally defoliated. In the case of aphids, the lack of rainfall early on to simply knock them from the leaves is primarily to blame. Some superintendents have treated with orthene; others used the high pressure from their irrigation system to wash the trees.

Fortunately, most of the trees pushed out new leaves. But the combined effects of so many stresses will someday take its toll on the prized possessions of most golf courses — their trees. A watering and fertilizing program seems a must to help lead them back to prosperity.

The National Weather Service, valuable to all Americans but especially to golf course superintendents, is about to undergo a major overhauling of its forecasting service. That includes \$1 billion worth of the latest technology and a reorganization of its network of forecasting offices.

Regardless of your business, modernization is important, even critical. That is particularly true for an organization like the NWS, whose forecasting impacts on so many. Many of their radars were built in the 1960s and some have stopped working because of simple metal fatigue. The huge computers in use in their offices have less capacity than the IBM computer that runs my irrigation system (PC2). No-

body is arguing there isn't a need for new machinery.

The new technology includes a radar system that can detect impending tornadoes and measure the severity of approaching storms; also slated are improved satellites, superspeed computers, an advanced data-processing system and 1,000 automated observation units for collecting local information on pressure, wind, precipitation and temperature.

The reorganization is more controversial and is raising a stink in some quarters. Like Wisconsin.

We are going to get one of those high tech offices in our state. It's going to be built near Sullivan, about midway between Madison and Milwaukee. The current offices in these two cities, along with a radar operation in Neenah, will be phased out.

That's causing some of the griping. There are those who are concerned that this will cause gaps in our coverage of the weather. Personally, I seriously doubt it. The NWS is keeping the offices in Green Bay and La Crosse open after the changes. More likely will be an improvement in our forecasts.

I do believe that we need to insist that our national professional association (GCSAA) puts forth a strong lobbying effort on behalf of the NOAA and the NWS. Misplaced priorities during part of Reagan's presidency cost the NWS budget dearly. We should support adequate funding for this agency. It's an old argument and one I use frequently, but the \$20 or \$30 million that would really help the NWS isn't much more than a landing gear or cockpit on one of those Stealth bombers some Pentagon dimwits want to build.

I vote for the NWS.

AWARDS

Hottest New Items (Affordable) in '89. The new slow release wetting agent pellets and their applicators. We purchased a couple of these and they make hand watering more efficient. I

love them and so do most golf course superintendents who have them.

I put in a vote for the McKenzie Calibrator, too. This new item, which I first saw at the GCSAA show in Anaheim, is quick, accurate and consistent. It saves a lot of misery when it comes to calibrating a sprayer. We double checked it against another method the first few times we used it until we got enough confidence to use the McKenzie alone. It is now all we use.

The new Red Max trimmers are working to rave reviews. And fiberglass handles on hand tools seem to have gained total acceptance this year, although I still prefer a good hickory wood handle.

Hottest New Items (Expensive) in '89. Jacobsen's LF-100. Between their two companies, John Mortimer and Curt Larson have put 35-40 of them on-to golf courses in our state. The golf course superintendents I've quizzed generally seem pleased with the machine and the job it is doing. Toro and Ransomes will each have one available next year to join Jacobsen and Lesco in this market.

Another new item that was especially popular this year, probably because of all the winterkill in Wisconsin, was the Ryan Mataway Overseeder.

Hottest Fungicide in '89. My informal poll of superintendents and distributors of golf course pesticides gives this award to Banner. It's incredibly expensive but appears to be very effective.

What's Out in '89? Wettable powder pesticides. Give us flowables or dry flowables. Most of us have absolutely had it with the WP materials, even when they are in the water soluble bags.

Biggest Golf Story in '89. The game's skyrocketing popularity. It is

also becoming a big story outside of the game but in the business world. The story has captured the attention of such national publications as *Business Week*, *The Wall Street Journal*, *USA Today*, *Research Recommendations*, *Time*, *Venture*, *Glamour*, *Rolling Stone* (believe it!) and *Parks & Recreation*.

Wildest Event In Golf in '89. This is an easy one. Take a guess. Yup, you're right. It has to be the four holes-in-one at the sixth hole at Oak Hill Country Club during this year's U.S. Open. The four aces were made within one hour, 50 minutes of each other. The probability ranges were from 332,000 to 1 up to 1,890,000,000,000,000 to 1. That last number is 1.89 quadrillion.

In the 88 previous U.S. Opens, only 17 aces had occurred. The most at any previous Open was 3 in 1982 at Pebble Beach. Curiously, that event had a Wisconsin connection. Bill Brodell, golf pro at Butte des Morts C.C. in Appleton had one of them.

CONGRATULATIONS are due Cherokee's Dennis Tiziani. He was inducted into the Wisconsin State Golf Association's Hall of Fame this summer. I applaud the selection. His accomplishments are many and formidable and his contributions to golf in our state are matched by few over all time.

In addition to that, Tiz has a good rapport and respect for golf course superintendents and the WGCSA. He's never hid that respect and has been willing to lend a hand whenever he can.

Three years ago, Dennis was a speaker at our Wisconsin Golf Turf Symposium at the Pfister Hotel in Milwaukee. What I remember almost as much as his talk about "First Impres-

sions" was that he had to borrow \$20 from Mike Semler so he could pay to get his car out of the parking ramp — he didn't have any money with him!

In late June there was a story in the papers in which some "environmentalists" (I'm using the word very loosely) were quoted as saying they were hoping for a sizzling, dry summer this year so Congress and the White House will be persuaded to take aggressive steps to combat the "greenhouse effect".

"If this summer is especially bad, a crisis mentality will take over, and Congress will want to pass legislation to show they're on top of the situation," said the director of the Sierra Club's global-warming campaign.

"If we have another hot summer, it might not mean that the greenhouse effect is here, but it will galvanize political opinion around the issue," said a senior associate at the World Resources Institute and an advocate of action to mitigate future warming.

These miserable little people work in air conditioned comfort and wish those of us and our crews who have to struggle with the heat and high temperatures even more misery.

I don't care how deeply or sincerely these two jerks feel about global warming — they don't feel any stronger on the issue than any of us — there is no excuse for wanting to heap difficult times on us. They lose support for their cause when they wish for hot, dry summers just to suit their political agenda. Wisconsin's golf course superintendents don't want another drought year just so these "environmental" groups can put more heat on the politicians. We don't need nor do we want to suffer like we did in 1988.

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It is ludicrous to wish for a lousy climate just so they can "make the world more livable".

There seems no end to the surveys and reports detailing Wisconsin's status as a high taxing state.

The latest figures from the Public Expenditure Research Foundation show that on a personal income basis, Wisconsin's tax burden is 15.6% higher than our Great Lakes neighbors and 12.5% higher than the national average. The report ranks us in sixth place nationally.

Why am I bellyaching about taxes all the time? Two reasons: 1. I have to pay them, and 2. the tax revenue is too often poorly spent.

There is another tax issue that affects a couple of golf courses in our town that was the obsession of Rep. Travis. This small minded politician has so little to do and is so filled with jealousy that someone might be having an enjoyable time on a golf course that he developed special legislation to salve his envy — a special tax for these two clubs. Fortunately, Gov. Thompson vetoed it.

Politicians are among my least favorite people. When they're mean and jealous, I dislike them even more.

All of this was happening about the same time I got a billing from Lois Latham for \$30 — state sales tax on Jim's visit to our golf course. I know that makes them more angry than it does me, and it makes me damn mad.

Another WGCSA member has retired. On July 8, Bud Kelzenberg retired after more than 30 years of service at the City of Madison's Monona golf course. Best wishes, Bud, May your

golf game improve enough so you can play with Butch!

Details on the Lake Geneva area golf courses proposed for construction are beginning to surface. Here's what I've heard about the project.

First, the ANVAN Corp. is going to build 54 new golf holes. Around 1,900 home sites are included, along with a hotel and conference center, stables, a hunt club, etc. The architects will be Lee Trevino, Arnold Palmer and Gary Player. Dick Nugent will be the coordinating architect.

And a correction from last issue: ANVAN owns only **one** golf course in Wisconsin — Lake Lawn. They also own the Abbey, but the Abbey Springs golf course is unrelated.

Distributors are saying it appears 1989 will go down as a good year for the turfgrass equipment and supply business — no bin buster or record setter, but not bad either. They are experiencing some of golf's good times.

Did you receive your Summer 1989 issue of Scotts *Proturf* magazine? Nice story about West Bend Country Club and WGCSA members Bruce Worzella and Roger Baumann. The beautiful photography used in the article gives testimony to the job these guys are doing on one of Wisconsin's finest golf courses. WBCC is also hosting the 1989 Wisconsin Turfgrass Association golf tournament on September 25th.

With the flush of regulation in our industry has come the requirements for

forms, plans and policies. I like the policy for pesticide or waste spills Russ Weisensel found. "Our spill policy is don't spill NUTHIN'."

That would solve a lot of potential problems!

The O.J. NOER CENTER for TURFGRASS RESEARCH is starting to get some notice outside our professional world. For example, in the July 1989 issue of *Wisconsin Golf* there is an excellent article by Jeff McCrory on the focus of our fundraising efforts on behalf of a turfgrass research facility in Wisconsin. It's written from an outsider's point of view and notes how the golf players, homeowners and citizens of the state will benefit from the realization of the NOER CENTER.

If I'm not mistaken, more stories like this one are on the way in popular golf journals in our state.

The biggest news from Russ Weisensel's office is that the Wisconsin Supreme Court has set a hearing date for the Town of Casey vs. Ralph Mortier and the Wisconsin Forestry/Rights-of-Way/Turf Coalition suit. Oral arguments are going to be held at 10:00 a.m. on Thursday, September 7, 1989. The suit brought against the Town of Casey by Mortier and the F/ROW/T Coalition was to overturn a town ordinance which prevented a land owner from applying registered pesticides on his own land.

We won that suit in the Washburn County Court and hope the same logic prevails in the Supreme Court. It is definitely going to be a precedent setting case.

Cross your fingers.

Continued on page 15

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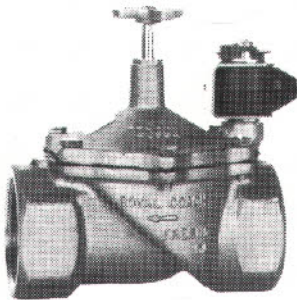
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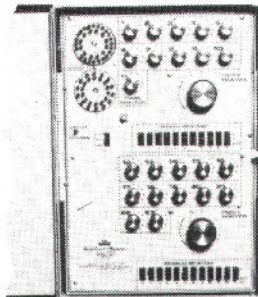
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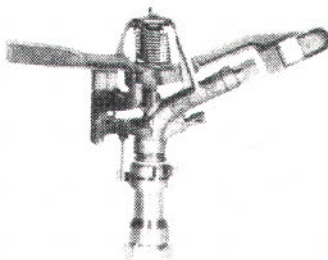
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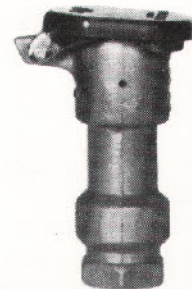
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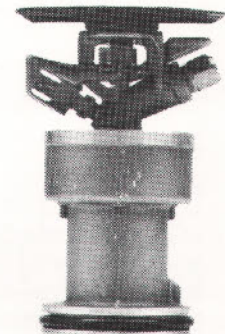
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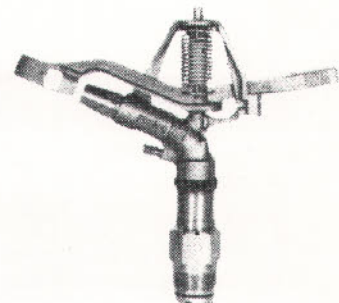
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I hated to see it — Lawn-Boy is for sale. It seems only yesterday that Outboard Marine Corporation moved the Lawn-Boy manufacturing to Plymouth. Now they are trying to sell this nationally known maker of lawn mowers and power equipment. The reason given for putting it up for sale was that the parent company needs operating capital. The incredible thing is that they are putting Cushman up for sale, too.

It isn't like Lawn-Boy is a loser. It had sales of \$153 million in the last fiscal year. Cushman had sales of \$92 million in its last fiscal year.

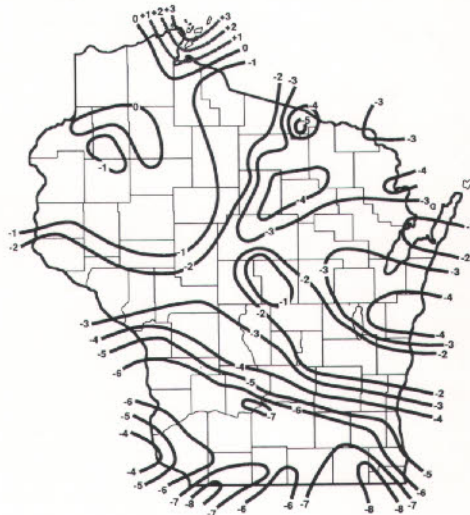
We can only hope that if the sale is consummated it will be with a solid, humane company that will protect the jobs of the 600 or so people employed in the Plymouth and Sheboygan Falls plant.

It would be impossible not to include a note about the weather we've experienced since the last issue of *The Grass Roots*, for posterity's sake if for not other reason.

Rain in our town since mid-July has relieved some fears. Although the conditions have improved with rainfall and more moderate temperatures, we still have a lot of catching up to do.

In our town it was reported that January 1989 through June 1989 was the driest such period on record.

RAINFALL STATUS FOR FIRST SIX MONTHS IN WISCONSIN IN 1989



The accompanying map from the State Climatologist's office, UW-Extension, shows how much less precipitation than normal Wisconsin received during the first six months of 1989. Those deficits follow the below normal precipitation during most of 1988.

Things are **not** back to normal yet.

As I put these words on paper on August 28th, our city is still 5.94" below normal in rainfall. We've had enough moisture for the area golf courses to "look good", but the moisture deficit takes its toll on trees and shrubs on golf courses. And there are longer term problems, too. I don't know about anybody else, but I'm praying for a lot of rain this autumn.

Speaking of Cushman being available for sale, one has to ask the question, "Will a Wisconsin turf equipment manufacturing company make a major purchase and acquire Cushman?" I could think of several with the resources to make that acquisition. Is anyone making any bets?

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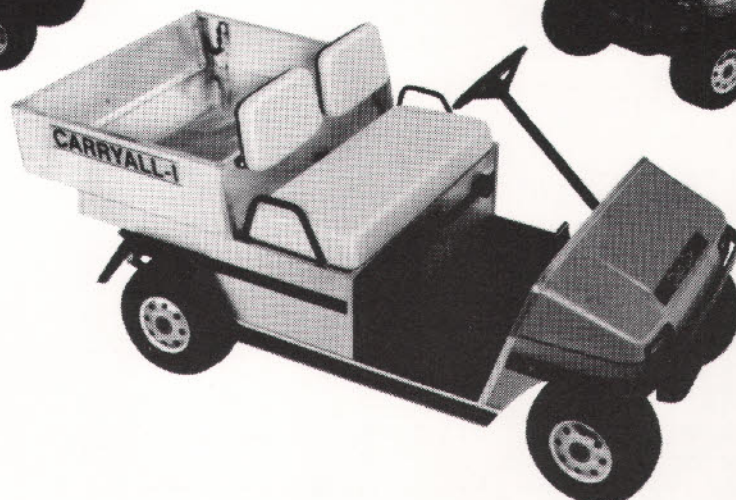
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THE ASSISTANT SUPERINTENDENT: TRAINING FOR THE FUTURE

By Mike Bailey

Editor's Note: Mike Bailey is a fellow newsletter editor from Delray Beach, Florida. Mike's newsletter is "The Florida Green Sheet". He also happens to be a golf course superintendent at The Falls Country Club there.

Mike, a native of Kentucky, is a graduate of Eastern Kentucky University where he earned a B.S. degree in turf-grass management. After graduation he served Sandpiper Bay before moving to Boca Greens Golf Club, a Joe Lee designed golf course built in Florida in 1979. Mike was the golf course superintendent throughout the construction of that golf course. In 1986 he accepted the challenge of another new golf course — a private country club to be called "The Falls" near Lake Worth.

I selected Mike's article to share with you in "From Across The Country" not only because it is well organized and well written but because he discusses a subject seldom addressed in "The Grass Roots" — the assistant golf course superintendent. My hope is that Mike's article will serve as a catalyst to one of our assistant superintendents in Wisconsin to share his thoughts about the position with us.

Thanks to Mike Bailey for giving permission to include "Training For The Future" in our journal. It originally appeared in the Spring 1989 issue of "The Florida Green."

Have you sat down with your assistant and clearly stated your expectations of his role? Perhaps in the beginning, disagreements will arise and perhaps someone might even want to quit his job. In order to put to rest all disagreements, the superintendent and the assistant must see clearly eye to eye and mutually respect each other's world of responsibility.

First off, what is the definition of an assistant? The answer might be "to assist the immediate supervisor in a manner to effectively operate a business." We commonly refer to the assistant golf course superintendent as simply "the assistant." This is not a problem. Everyone within the department usually

understands the assistant's responsibilities. I can say over the years my overall needs for an assistant have changed, but generally, the workload has remained the same and probably will remain the same for years to come.

I believe the following questions and answers set down a guideline for the management of an 18 hole golf course. Sure, there can be modifications and different styles of managerial practices. But this has been my style for over ten years and I can proudly say I've been associated with some great assistants because, hopefully, I have set down guidelines and expectations.

• Who lines up the crew at the beginning of the morning?

In order for me to command respect from the crew, I feel a need to be on time every day. We are blessed with a competent crew where tardiness is a rarity. Because I arrive 25 to 30 minutes before work begins, I also find the entire crew arrives ready to go anywhere from 5 to 10 minutes before work actually begins. Socializing, teasing, and light discussion about work creates a pleasant interaction.

Weekdays at 7:00 a.m., our work day begins. We congregate around the assignment board and erase yesterday's schedule and I write down the current day's assignments. The assistant contributes by reporting yesterday's progress and confirms my assignments. This procedure allows the assistant to participate from a "second level of command." The crew realizes the assistant monitors the day's activities. The crew also realizes the assistant will be the "first level of command in the field." An understanding is established between my expectations and the crew's deadline of expectations.

Also I might note, the golf course equipment manager (commonly referred to as the head mechanic) stands at the assignment board along with the rest of the crew. This allows him to be advised on the equipment that will be out on the golf course for the day, so

that he can plan accordingly. We also interact with employee responses on yesterday's mechanical problems and even discuss topdressing or aerification for next week. This way, no surprises come about. All of the employees feel a part in the team concept. Here again, however, guidelines have been established. The equipment manager is third in command and reports to the assistant when the golf course superintendent is off the property.

• Who manages the crew?

I strongly encourage the assistant to manage the crew during the "middle of the working day." What does this mean? Typically throughout the day, I find myself involved with other facets of managing a golf course where I will not be in tune with the performance of the work crew. This is where the assistant comes through. Our assistant is the person out on the golf course on an hourly basis, keenly monitoring the performance of the maintenance staff. Yet the managerial assistant is not an executive. The assistant does not appear to the membership as being the golf course superintendent. The assistant is dressed in the same uniform attire as the rest of the crew, busily performing various daily responsibilities throughout the golf course.

• What do you expect from your assistant daily?

I find a need for the assistant to be well diversified and knowledgeable about irrigation, pest management, cultural maintenance, not to mention helping to supervise the crew.

I prefer the assistant to inspect the irrigation system and the irrigation pumphouse daily. This includes the inspection of the pump motors, the pump station mechanisms, the irrigation central, setting up for appropriate irrigation needs, changing the pressure recorder and generally checking for any leaks, vandalism and any other problems associated with quality maintenance.

An assistant should review the golf course as another set of agronomic eyes. The assistant will look for disease, pest control, and review recent chemical applications. He will evaluate results and inspect the turf quality for future aerification needs, verti-cutting, topdressing, and even assist the mechanic on evaluating mowing quality performance.

• Does an assistant need an office?

Yes, but let's clarify what constitutes an office. Assuming the superintendent has an office complete with desk, file cabinets and a seating arrangement for meetings, does the assistant actually need such an office? I believe the answer is NO. Of course, the assistant requires a desk, file cabinet, and perhaps a few chairs for an impromptu meeting. But he needs "an office environment" appropriate to a worker, not an executive. It should have more of a storage room appearance where valuable items such as tools, irrigation parts and golf course supplies are kept under lock and key. A workbench for clock repairs and so on is also appropriate within the assistant's air conditioned storage/office room.

• When is the assistant not invited?

In the past I have had the problem of an assistant simply walking into my office without reason. My office is not a place to socialize. I have since set up a policy to prevent these interruptions. Before anyone enters my office, he is expected to look in the window and pause. If I wave my hand to come in, please enter. If I hold up my hand with a pause, please wait. I could be in a meeting, on a phone call, or reviewing paperwork that should not be interrupted. This has greatly increased our respect for each other's sense of responsibility.

• Should an assistant attend meetings?

Sometimes, it seems difficult to justify both the superintendent and the assistant attending various meetings together. While we are both off the property, who will supervise the crew? Because the assistant is employed to assist, he should stay home and "attend house."

Perhaps once or twice a year the assistant might attend a chapter meeting, an irrigation school or special seminars for CEU points for his pesticide license. The Palm Beach chapter successfully

conducts the annual assistant's meeting when all assistants are urged to attend this special meeting. This way, the assistants feel they have a place within the organization.

• Should the assistant be salaried or paid hourly?

I believe salaried. His job description is managerial, therefore a salaried position is more appropriate. If personal problems arise, the assistant can take time off and still receive pay, yet when the workload exceeds regular hours, all is clearly understood.

• Should the assistant work weekends?

Of course! As much as we need time off, our assistant was hired with the understanding that he would work on one of the two weekend days. In our situation, the mechanic works Saturday and the assistant works Sunday. There is a reason for this particular schedule. Since Saturday follows immediately after Friday, it is hoped that all goes well for such a short time. The equipment manager feels comfortable with his role of supervising the crew. Sunday can be a different experience. Because another day has transpired and more serious problems may develop, the assistant is more qualified to handle the work load.

Exceptions do occur. Vacations, special occasions, and sickness often create a need to switch work days. Of course, I am only a phone call away to help when needed, but I find their sense of responsibility is best appreciated if they tackle the weekend problems on their own.

• Does the assistant have the authority to hire and fire?

Yes. Years ago I received complaints about employee competency. I found myself with the responsibility of firing so-called incompetent employees because the assistant could not work with certain employees. Typically the new hires were no better than the previous so-called incompetent employees. I have authorized the assistant to become more involved with scrutinizing managerial needs. If an employee fails to perform, I now allow the assistant to get involved with the problems. If the problems are not resolved, the assistant will become burdened with the training of a new hire and try to improve the situations over the last employee. Sometimes this does not occur. In such cases, I now find the assistant has

more patience and he works more closely with crew members. It's easy to fire, but it's not easy to hire, especially a better new hire.

• Are you managing an assistants training school?

In my case, no. My job description is quite extensive. Sometimes I believe my job description could best be stated as, "DO EVERYTHING." Yes, I enjoy the challenge and responsibility of my job. Because of this, I need a good assistant. The individual must be devoted to the industry, be honest, loyal and, most importantly, have a willingness to spend a few years with me. No, I can not afford to lose an assistant once a year. I then would have to step back, punt and retrain. Unfortunately, I do not have the time to train employees.

I have developed the "on deck circle program" within the maintenance staff. I always try to have a person on the crew that is looking for advancement. Hopefully this individual is interested in working his way up the ladder. Proper formal education is important along with practical field experience. By the time the assistant moves on, the "on deck circle" assistant is ready and willing.

The new assistant will come to bat having a full knowledge of the game plan and he will clearly see eye to eye with me on what is expected of him as assistant.

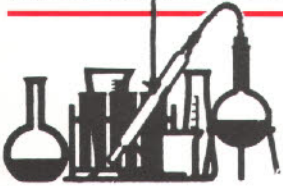
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Superintendent**



POA ANNUA UPDATE

By Dr. Wayne R. Kussow

Just in case you haven't heard, annual bluegrass has been renamed. The USGA Green Section now calls it *Poa annua foeva*. This was done so that professors can devote their entire research career to this grass without feeling guilty about not finding a way to eradicate the stuff.

I'm kidding, of course. *Poa annua* (hereafter referred to as PA) is a vexing problem that is not likely to be overcome soon. Two recent research reports bear this out.

The first report appeared in January in *Weed Science*¹. This particular study had the objective of determining whether or not PA seed from roughs and fairways contributes significantly to PA infestations of golf greens. The research involved detailed study of the botanical characteristics of PA grown from seeds collected from a putting green and from adjacent fairway and rough areas of a 22-year-old Australian golf course.

The putting green PA was found to differ from the fairway and rough PA in several important aspects. Most striking was the difference in PA seed dormancy. The fairway and rough PA seed did not germinate until stored for several months at room temperature or until chilled at 40°F for two weeks. In contrast, PA seed from the green had a germination greater than 95% immediately after harvest. Other distinguishing characteristics of the putting green PA were lower, more horizontal leaf growth, much greater tillering, no stolon development, and delayed flowering.

Based on these observations, the author concluded that PA from the green consisted of few and distinctly different genotypes as compared to those in the fairway and rough. This, in turn, leads to the conclusion that PA in the fairways and roughs is not a source of seed for maintaining the PA populations golf greens.

This conclusion has some interesting implications for golf course superintendents. One is the idea that tracking of PA seed from fairways and roughs onto greens need not be of concern. Another is that practices adopted

to reduce PA populations in fairways will not have an influence on PA populations in greens.

In my judgment, the conclusions of this study need verification or, at least, clarification. The fact that the research involved use of PA seed from a 22-year-old golf course could be quite important. This is sufficient time for PA populations to segregate into the few genotypes apparently capable of thriving on golf greens. Until this segregation occurs, fairway and roughs may well be important seed sources for putting green PA populations.

The observation that fairway PA seed that is produced in May typically does not germinate until fall is not a new one. This dormancy characteristic has been observed on a number of occasions. However, I did not find this to be the case for PA seed collected in May of this year from an unused section of fairway at the Nakoma Golf Club. The seed readily germinated at room temperature, thereby casting some doubt on the suggestion that delayed germination is a characteristic common to all fairway or rough PA populations.

The second PA study of interest was recently published in *Crop Science*². It is the result of research conducted at the Michigan State University Hancock Turfgrass Research Center. In this study, the effects of five management practices on PA populations in Penn-cross creeping bentgrass were followed over a three year period. The main observations at the end of this time were as follows:

Clipping removal reduced PA populations two years out of three for an average three year reduction of 12.1%. Clipping removal also reduced soil PA seed bank an average of 60%.

Nitrogen rate (2 vs 6 lbN/M) affected the PA population only one year out of three and had no effect on PA populations after three years.

Plant growth regulators alone did not change PA populations. Melfluidide reduced PA populations, but only at the 6 lb/M N rate and when clippings were not removed. An-

nual EL-500 applications reduced PA populations, but only when clippings were not removed and the plots were annually overseeded with 1 lb/M of Penn-cross seed.

Irrigation practices, by themselves, had no significant influences on PA populations.

Annual overseeding increased the creeping bentgrass populations by 8% over three years but only if daily irrigation at 75% of open pan evaporation rates was practiced. With less frequent irrigation (3x/week or at wilt), overseeding had no effect on PA or bentgrass populations.

The authors appropriately concluded that PA cannot be controlled with any single management practice. Rather, the outcome of any one practice depends on the overall cultural program. In other words, imposing a new management practice, such as PGR application, may or may not alter PA populations for you.

If one were to single out the one practice that seems to have the best potential for reducing PA populations on a reasonably competent basis, it is clipping removal. But don't expect miracles. In the MSU study, clipping removal for three years reduced PA populations by an average of 4% per year. Some plots started out with as much as 83% PA. Hence, after three years these plots averaged "only" 71% PA. This is not enough of a reduction for you or club members to see significantly less PA brownout when heat stress takes its toll.

One final note on *Poa annua*. The very popular concept that long-term use of Milorganite favors PA due to buildup of soil P has not been borne out in my research plots at the Maple Bluff Country Club. In May, 1988, counts of PA seedheads were unrelated to soil test P levels ranging from 86 to 280 lb/A. This is not to say that Milorganite did not appear to favor PA invasion of the plot area. Populations of PA in the Milorganite plots were more than twice those in the urea and IBDU plots.

So why does application of Milorgan-

ite favor PA? The answer seems to be earthworm activity. Counts of earthworm casts in the Milorganite plots have been found to be more than six times greater than in the urea and IB-DU plots and when I examined the relationship between PA and earthworm populations, the latter accounted for nearly 88% of the plot-to-plot variation in PA populations. Perhaps this is not too surprising, considering that earthworm casts typically contain five times or more plant available N, P and K than does the surrounding soil.

This brings us to one final thought. Assuming that earthworms are the link between Milorganite and PA, will application of Milorganite on sand-based putting greens favor PA?

References Cited

- ¹Lush, W.M. 1989. Adaptation and differentiation of golf course populations of annual bluegrass (*Poa annua*). *Weed Sci.* 37:54-59.
- ²Gaussoin, R.E. and B.E. Branham. 1989. Influence of cultural factors on species dominance in a mixed stand of annual bluegrass/creeping bentgrass. *Crop Sci.* 29:480-484.

WORZELLA HOSTING 1989 WTA GOLF OUTING AT WEST BEND COUNTRY CLUB


WGCSA treasurer Bruce Worzella invited the 1989 Wisconsin Turfgrass Association golf outing to West Bend Country Club. The benefit is going to be held on September 25th.

Lunch will be served at 11:00 a.m. and the golf event begins at 12:30 with a shotgun start. Dinner will be served at 6:00 p.m. and preceded by hors d'oeuvres at 5:30. Prizes will be presented during and immediately after dinner so that everyone can get an early start home.

The cost for lunch, golf, golf cart, hors d'oeuvres, dinner and door prizes is \$85. Dinner and hor d'oeuvres only cost \$50 for those who do not wish to play golf.

Bruce is inviting corporations, manufacturers, distributors, sales representatives, golf clubs, golf courses and individuals to make a donation of \$100. There will be a donor board on both the first and the tenth tees. Proceeds from this fundraiser will be donated to the O.J. NOER CENTER for TURFGRASS RESEARCH.





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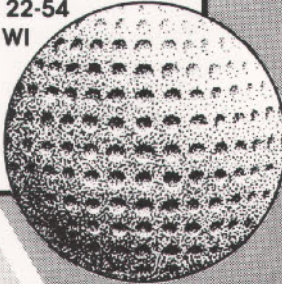
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* These companies have exhibited at every Field Day the Wisconsin Turf-grass Association has sponsored, going back to the first one at the UW Arlington Experiment Station.



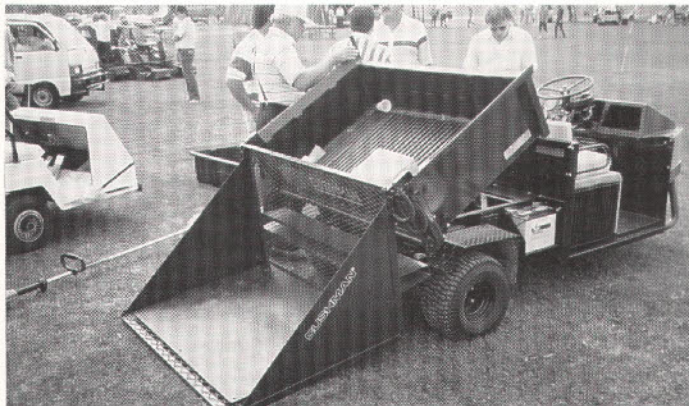
"Hauling equipment!"



Ransomes will sell the Fairway 5000 next year. We got a preview at the Field Day.



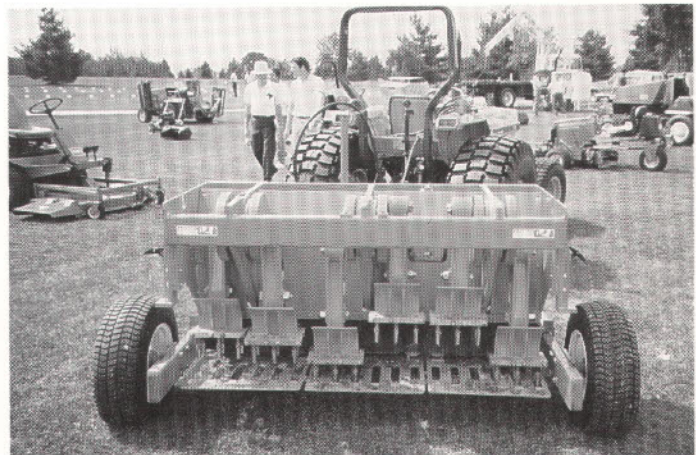
Deep tine aerification is gaining favor among some golf course superintendents. Wisconsin Turf offers this one.



"What's this attachment for?"



Field Days are meant for research and demonstration displays, too. Here Dr. Bob Newman and NK's Mark Grundman look at grass varieties.



Toro's PTO driven fairway aerifier.