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**David R. Behrman, CGCS**

**President's Message**

At this point I am sure we have all had our fill of noisy grinders, air tools, and paint fumes permeating the air. The first opportunities to start preparing the course for play are at hand. I assume many of us have those same urges to dive in and meet the coming of spring head on.

Spring, however, is also a time of organization. We now have the opportunity to set into motion the plans we have made over the winter. So, now we must remember that patience plays an important part in the scheme of things. Before rushing out, make sure to take the proper amount of time to motivate your newly structured crew. Remember they have not spent the winter attending seminars, preparing budgets, and making plans. They are conceivably totally in the dark as to your intended goals. Hence, it becomes a vital concern to take the time to relate new ideas and reinforce old standards that may have been shelved for the winter. After all, as spring brings the golf course out of dormancy the players are again making their first contact with you and your crew. It can be important to remember that the first impression lasts the longest. A well organized highly motivated crew now will set the stage for the golfers overall impression of the season.

We as professionals should realize that a well maintained golf course is not enough by today's standards. Members and owners have grown to expect quality turf in the Chicago area. Since this has been delivered, new demands are becoming dominant. These demands are for skilled management technics. We are now judged not only on our turf, but also, on how we achieve our results. Whether this judgement be through scrutiny of budgeting or analysis of the individuals we employ, awareness is the key to success. In order to effectively maintain our growing reputation as professionals we must concentrate on presenting our entire operation as a well planned, well organized endeavor. By getting the early jump this spring we can save numerous hours that might be wasted reorganizing later. In addition one can reap the benefits of early recognition, enabling you to pass this on to continue the motivational process with your employees.

Our achieving recognition as professionals in the golfing community today was hard fought and well earned by our predecessors. Let us keep moving up the ladder.

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*David R. Behrman*

## Director's Column

### "If I Only Had a Half Million Dollar Budget"

by Bruce Williams, CGCS

Bob O'Link Golf Club, Highland Park, IL

This article is not intended to defend those clubs with higher budgets but rather to show how that money is utilized to provide the best golf courses possible. Without a doubt there is a direct correlation between the amount of money spent on the golf course and the quality of the playing conditions.

No matter what size your budget is the money must be managed effectively. Contrary to popular opinion the "open checkbook" country clubs do not exist. It is so important that as Superintendents we have budgets that will meet the desired objectives of our memberships.

In the case of clubs desiring the best conditions the budgets in the Chicago area are in the \$400,000 - \$500,000 range. These clubs normally employ 13-16 employees in the growing season and 5-6 employees during the Winter. Labor normally comprises 60% of the total budget. What follows is a brief explanation of the activities at Bob O'Link Golf Club.

Our Assistant Superintendent, **Rick Bowden**, is in a supervisory position which I like to refer to as a Production Mgr. He makes sure the jobs get done. Our mechanic is kept busy with equipment maintenance 40 hours a week. Our gardener spends the entire workweek on the bedding plants, clubhouse, landscape, and parking areas. The irrigation technician is responsible for the pumping plant, irrigation applications, system upkeep and repairs. We use our apprentices or interns for chemical and fertilizer applications.

On a daily basis four men mow greens, two men change cups and tees, and two men rake bunkers. Fairways, approaches, tees, and collars are mowed three days per week with clippings collected on all areas. The remaining bluegrass areas including the rough and green banks are mowed once a week. Hazards are marked once a week also.

Even with the use of Embark tree bases are rotary mowed 4 times per year. Bunkers are edged 3 times per year and lake banks are trimmed twice a month. Flagsticks and cups are replaced once a month and then we paint the spare sets.

Fungicides are applied with the preventative approach to greens, tees, and fairways. Greens and tees receive up to 10 applications annually and fairways average 7 applications per year. Fairways are treated for *Ataenius* as well as two insecticide applications for cutworms. We are currently establishing methods for earthworm suppression on the fairways. Greens and tees are treated with insecticides for cutworm control as needed. Topdressing on greens is monthly and we use sand topdressing on our tees four times per year. Wetting agents are applied to all playing surfaces 3 times per year.

In the Spring we spend 2 weeks aerifying 35 acres of fairways with Greensaires followed by an overseeding of Penneagle creeping bentgrass. In the Fall we run blowers and mulchers 8 hours a day until the end of the season. We prepare the golf course in the same manner for 20 players as we do for 150. This includes the slow days in the Spring and Fall as well as Mondays throughout the playing season.

The bottom line is that given the same budgets and tools to work with most all of us could provide the same quality playing conditions on any given golf course. If only the golfers would understand that you get what you pay for.

## The Specialized Management of "Fast Putting Greens"

by Michael W. Rothenberg, CGCS

West Shore Country Club  
Camp Hill, Pennsylvania

There has been a great deal of discussion in our industry the past few years about the growing trend toward faster and faster putting surfaces on golf courses. We've heard university researchers describe the technical methods a superintendent must employ to produce fast greens in the first place. We have heard debates over the merits of fast greens, especially from the viewpoint of the average or high-handicap player. One area, however, that has received way too little attention has to do with the fact that golf course superintendents who embark on a fast greens maintenance regimen invariably suffer a certain degree of decline in the quality of the turfgrasses on those greens.

This decline can manifest itself in a number of ways. It is most frequently observed as simply a thinning of the grasses, a general overall decrease in the turf density, if you will. During severe summer stress periods, a yellowing or chlorotic appearance may develop on these fast greens, for no apparent reason other than the added stress of the fast greens regimen. There is also a definite decrease in the tolerance of these grasses to wear and tear. Things like ballmarks, spike marks, and the plugs from old cups are much slower to heal than they are on a slower green. Of course, the rock bottom of this vicious decline cycle occurs when we observe the encroachment of moss and algae into the thin areas that have formed on these greens.

I first began the switch to fast greens around 1980. After about a year or so (there does appear to be a grace period between the time you initiate a fast greens program and the time turf decline begins), I started to experience exactly the type of decline symptoms that I just described, and about the same time I also began to search for an answer to the question: "Can fast greens co-exist with a quality stand of turfgrass?"

Before I go any further, I want to draw a distinction between two types of "fast greens programs", only one of which I am alluding to in this discussion. The first type is where the superintendent normally maintains his greens at moderate speeds, and only throttles them up to 10 feet or so during major tournaments and club events. This method appears to be quite safe and will generally not lead to the type of decline I'm referring to. The second type, which is the type I am referring to, is where greens are maintained at fast speeds (if I had to assign a stimpmeter reading, I would say 9½ feet or greater), but the important distinction is that they are maintained that way day in and day out, all season long. This is something we are seeing more and more of in the northeast, and as I stated earlier, it is usually accompanied by a decline in the turf quality.

When I first set out to find the solutions to the problem, I was initially disappointed by the fact that there was little or no formal research being geared toward the specific turf problems associated with fast greens. However, in looking for that research, I had a number of informal conversations with turf researchers, with USGA agronomists, and with a number of superintendents who had been on fast greens programs longer than I had, and who were already confronting these problems. Out of these conversations came a number of excellent suggestions and "home remedies", many of which dramatically improved my greens.

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## Renovation Techniques and Management Strategies for Bentgrass Fairways

by Dr. R. T. Kane  
CDGA Turf Advisor

In recent years, there have been increased demands by the golfing public for higher quality fairway turf. However, maintenance of high quality fairways is often precluded by the dominance of *Poa annua* over other fairway grasses. *Poa annua* is susceptible to disease and "burn-out" when exposed to summer stresses, and high inputs of water and pesticides are often required to avoid large scale losses of fairway turf. Past attempts to establish Kentucky bluegrass or creeping bentgrass fairways have met with little success due to the competitiveness of *Poa annua*. However, new, innovative management strategies and improved renovation techniques have stimulated interest in bentgrass fairway establishment and maintenance. In this column, I will discuss fairway renovation techniques with Roundup herbicide, and subsequent management practices that reduce competition and reinvasion by *Poa annua*.

Before beginning renovation activities, it is critical that the membership be well informed as to procedures and consequences of spraying Roundup (brown grass!). In general, renovated fairways will have to be closed for one to several days, and cart traffic will be restricted. Other factors to be considered before renovation relate to construction aspects and changes in fairway design. For example, sprinkler heads can be raised, leveled, or relocated, and drainage problems can be corrected. Also, the size, shape, and contour of fairways can be altered during renovation, which can lead to reduced acreage



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Several renovation techniques have been used by area superintendents. One of the easiest and least disruptive methods is to apply Roundup followed by overseeding directly into the dead turf. A slit or groove seeder can be used, or seed can be dropped or broadcast onto the surface of the dead turf, then matted or raked to the soil surface. These methods are most suitable for fairways that do not have excessive thatch build-up. Seedling establishment is often reduced in heavy thatch, and poor mowing quality and increased disease problems may result.

A second, more disruptive renovation method includes intensive core cultivation prior to overseeding Roundup treated fairways. Following cultivation, soil cores are shattered and matted-in provide top dressing. This method can lead to improved seedling establishment and better turf quality when fairways have a moderate thatch layer. Fairways with excessive thatch build-up should undergo a multi-season thatch reduction program before renovation to assure acceptable results.

When bi-directional slit seeding is conducted following Roundup applications, diamond shaped patches of turf are often torn loose. These "diamonds" must be replaced or soiled over to keep the fairway surface level. An alternative method which reduces or eliminates this problem is to carry out all cultivation and slit seeding **before** spraying Roundup (e.g. Olympia Fields Country Club). In this approach, Roundup must be sprayed as soon as possible after seeding to prevent injury to germinating bentgrass. Perhaps the best solution to the diamond tearing problem is to scrape off and discard the dead mat and

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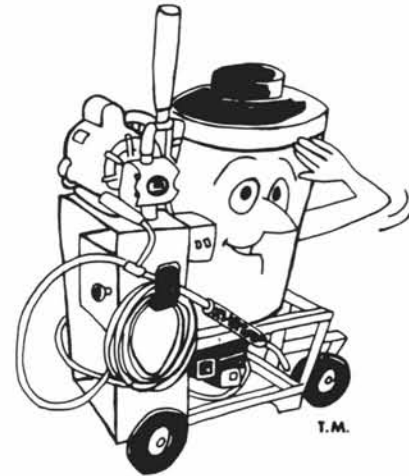
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(Fairway Renovation cont'd.)

thatch before overseeding (a road grader was used at Butterfield Country Club). An excellent seedbed can then be prepared, which will greatly enhance bentgrass development.

Late summer or early autumn is generally regarded as the best time to renovate fairways, primarily because the golf season is winding down at this time. However, **Poa** seed germination increases in autumn, and reestablishment and competition by **Poa** can become a problem. Since bentgrass seed germinates at higher temperatures than **Poa annua**, it is advantageous to begin renovation in mid to late August, before the arrival of cooler temperatures. Also, many area superintendents have applied the herbicide bensulide 5 to 6 weeks after renovation in an attempt to reduce **Poa annua** emergency.

At present, there are only four of five seeded varieties of creeping bentgrass available in the Chicago area — Penneagle, Penncross, Seaside, Prominent, and Emerald. Penneagle and Penncross have been the preferred varieties for renovation work, but seed shortages have led to blending of these varieties with Seaside. In general, Penncross and Penneagle perform well in most fairway situations. Seaside is less wear tolerant and disease resistant, but can provide an acceptable turf if blended at 50% or less of the total. Prominent and Emerald have not been used frequently in northern Illinois, although Prominent has performed well in several university tests.

Once fairway renovation is complete and a solid stand of turf is established, one can expect to have around 50-70% of bentgrass — with the remainder composed of **Poa annua**, other

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grasses, and weeds. The objective now is to increase and maintain the bentgrass population as high as possible (80-90+ %) by utilizing sound management techniques. These include alterations in fertility, irrigation, and mowing practices, along with responsible thatch management and use of herbicides or plant growth regulators. Please note that no single change in management will have the desired effect; an integrated approach utilizing several key strategies is required.

It has become apparent that bentgrass fairways require much less additional nitrogen than bent putting greens. Annual application rates as low as 1 to 2 lbs/1000 ft<sup>2</sup> or less are now common. **Poa annua** apparently requires much more N than bentgrass under fairway conditions, and low N rates greatly reduce the competitiveness of **Poa**. N applications in late spring (during **Poa** seeding) and in late autumn to early winter ("semi-dormant") may also favor bent growth, since at these times **Poa** root absorption of nutrients is thought to be lessened.

By most accounts, **Poa annua** also requires levels of phosphorus than bentgrass when intensively managed. Most soils in northern Illinois contain adequate P to sustain bentgrass growth, with the exception of high pH soils. Because of this, area superintendents have reduced or totally eliminated P applications in an attempt to further stress **Poa annua**. Now, following renovation and bentgrass establishment, only potash application rates remain as high as before renovation.

Controlled reduction of irrigation frequency is also of importance to successful bentgrass fairway management. Infrequent irrigations that deeply wet the soil profile favor bentgrass rooting and water uptake. When properly maintained, bentgrasses have

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## Naturalizing with Wildflowers

by F. Dan Dinelli, Ass't. Supt.  
North Shore C.C., Glenview, IL

Naturalizing with wild flowers is an adventure much different from that of cultivated gardening or growing turf. The use of wildflowers offers an opportunity to use an adverse habitat, and to accentuate nature. Use of wildflowers, especially on golf courses, has been justified by their low cost and low maintenance. I believe there are many other arguments for advocating the use of these modest yet romantic plantings.

I have met few people who do not like flowers. Croly wrote, "Flowers are nature's jewels, whose wealth she decks her summer beauty." Flowers brighten up our lives and are a great way to break up conformity. Unlike turf or cultivated flower beds, wild flower gardens offer an ever changing progression of color and textures. The fast growing annuals are the first to fill in, baby's breath and snapdragons offer a soft texture with whites and pinks. In progression, corn poppies dominate with their brilliant splashes of vibrant reds, pinks and whites. This stage appears to be everyone's favorite, the colors are so radiant they seem to glow at night. Next the area turns to a sea of powder blue, as the bachelor buttons emerge. With each visit the field offers a different scenic attraction.

However, as odd as it may seem wildflower plantings offer more than just beautiful flowers. They offer opportunity for interesting wild life. Few environments are more sterile than a well manicured turf; it is an unnatural and vulnerable monoculture. Turf itself, is one of the most impoverished bird habitats on earth. While some birds such as robins and starlings will feed on grassy areas, goldfinches and song birds will be attracted to the seeds of bachelor's buttons, cornflowers, thistles and others. Butterflies, who display beautiful fleeting splashes of color will be attracted to goldenrod, mallow, Queen Anne's lace and thistle. Occasionally, a hummingbird can be found seeking the sweet nectar of snapdragons or dianthus. Honeybees keep the garden alive and buzzing with their restlessness. Though bees can be a hazard, due to stings, these pollinators are indispensable inhabitants on this planet.

Wild flower planting sites might include problem areas, such as hill sides which are difficult to mow; low wet areas which are difficult to drain; or shaded areas where turf will not thrive. An area can be selected that will be far enough out of plan and offer a



pleasant scene. It is nice to select areas that can be viewed from more than one golf hole. Consulting with the pro may be of some help in selecting an area.

The size of the area is not as important as the shape and location. Interesting contours on a gradual slope are pleasing. The area may include trees or shrubs. Wildflowers play "survival of the fittest". They will in time select the habitat which suits their needs. The more diverse the soil, moisture and shade, the more diverse the flowers will be. The wildflowers in the garden that North Shore Country Club planted in 1983 has already segregated into their own niches.

Many seed houses, garden centers and suppliers offer wildflower seed mixtures. Distributors, supplying the most complete mixes, formulate them for different geographic regions or different climatic areas as to wet or dry. For each, the mainstays are perennials native to the regions, or perennials which are best suited to the growing conditions. For this reason a mix with a high percentage of perennials is desirable. A mix may contain as many as 20 different annuals, biennials and perennials to provide a continuous period of bloom. Some firms list varieties separately, enabling you to select those best suited to your locality or interests. There has been some concern as to whether wild flowers invade lawn or surrounding areas. I have not noticed such a problem. However, two pest species should be avoided. Purple loosestrife (*Lythrum salicaris*) and siderwort (*Tradescantia virginiana*) are aggressive pushy plants that may create a problem. Purple loosestrife is so prolific, it is threatening our natural wet lands. Currently most seed companies have excluded these species. Non-aggressive grasses, such as hard fescues, may be added to the mix if planting is done on a slope, or where erosion may be a problem. Hard or sheep fescues offer quick germination, providing soil

stabilization. However, it should be noted that aggressive grasses, such as bluegrasses or bentgrasses are wildflower's worst enemy. For this reason fertilizing is not recommended. It is believed fertilizing promotes weeds and excessive vegetative growth. Never-the-less, I fertilized half of one of our gardens with Superphosphate and these flowers held their blooms longer. I believe high nitrogen fertilizers are the culprits.

Spring is the best time to plant most wildflower mixes, preferably as soon as the soil is workable. The idea is to provide ample time and proper condition for the plants to germinate, grow, flower and set seed. For the annuals, that is the only way to ensure the next generation. Recommended planting rates vary on seed mixes. Generally 4-7 pounds per acre are sufficient to establish a good ground cover. I like to increase the rate by 50%. This gives a quick establishment of thick flowers. However, if too high a rate is used, the quick germinating annuals may shade out the next phase.

We prepared the bed at North Shore Country Club by first spraying the area with roundup at its recommended rate. Ten days later the area was rototilled with a tractor mount tiller. This was done until the soil had a fine texture 3-4 inches deep. The bed was then raked firm with a sand pro. Marking paint was used to create a grid to assist in the hand broadcasting of seed. Miorganite was used as a filler to aid in even seed dispersion. After seeding, the area was dragged with a piece of chain link fence to lightly cover the seeds with soil. Finally the bed was rolled, and lightly irrigated until seedlings were well established. Alternative applications may include hydroseeding or the use of a No-Till Rangeland Grass Drill. This special drill seeder is especially good for overseeding older wildflower areas that have lost most of their annuals.

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Duosan <sup>2</sup>	2 oz.	8.0
Bayleton <sup>3</sup>	2 oz.	4.3
Rubigan <sup>4</sup>	8 oz.	11.0
Daconil 2787 4F <sup>5</sup>	6 fl. oz.	4.8
Untreated	—	26.8

Benignus, Fungicide Application 8/15/17, 7/8 P. H. University, J. D. Fry Dept. of Agronomy, University of Maryland

**ANTHRACNOSE CONTROL** Michigan State University 1982  
and Gary Golf Club, Michigan, 1988

Treatment	Rate/ L/1000 Sq. Ft.	Application Interval	Disease Rating & Plant Injury 8/9	8/17
TERSAN® 1991	1 oz.	21 days	8.3	0.7
Bayleton	2 oz.	20 days	11.7	1.7
Duosan	4 oz.	21 days	21.7	8.3
Clearys 3336 <sup>6</sup>	1 oz.	21 days	30.0	18.3
Fungo 50 <sup>7</sup>	1 oz.	21 days	28.3	19.0
Daconil 2787 4F	6 fl. oz.	14 days	28.3	26.3
Actidione TGF + Actidione RZ <sup>8</sup>	34 - 56 oz.	14 days	48.3	68.0
Vorlan	1 oz.	21 days	55.0	60.0
Untreated	—	—	58.0	66.7

Applied 8/15/17/18  
Application on 14 days  
Data from 8/15/17/18 Michigan State University

# TERSAN® 1991 controls brown patch and anthracnose better than the fungicide you are now using.

Test results, like these from Michigan State University on anthracnose and the University of Maryland on brown patch, prove nothing works better than Du Pont TERSAN® 1991 fungicide against these two turf diseases.

TERSAN 1991 handles the heaviest disease pressure. Its unique systemic activity withstands heavy rainfall and frequent watering for longer-lasting disease control. And TERSAN, 1991 may be applied for anthracnose control either preventively or after the disease is already present.

Schedule TERSAN 1991 in your

summer spray program. Apply it in tank mixtures or as supplemental applications from June through August, when brown patch and anthracnose threaten. And get tee-to-green control.

- The following products are registered trademarks:
- <sup>1</sup> Vorlan, <sup>2</sup> Duosan, and Fungo 50—Mallinckrodt, Inc.
  - <sup>3</sup> Bayleton—Mobay Chemical Co.
  - <sup>4</sup> Rubigan—Elanco Products Co.
  - <sup>5</sup> Daconil—SDS Biotech Corp.
  - <sup>6</sup> Clearys 3336†—W.A. Cleary Chemical Corp.
  - <sup>8</sup> Actidione TGF and Actidione RZ†—TUCO Div. of Upjohn Co.
- \* Not labeled for brown patch control.  
† Not labeled for anthracnose control.

*With any chemical,  
follow label  
instructions and  
warnings carefully.*

