

Syngenta Professional Products

Syngenta Professional Products

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Product focus:

The vision of Syngenta is to provide the best products and services in the industry and to build optimal packages of chemistries and technologies to help its customers achieve their goals. For golf course superintendents, Syngenta offers industry leading products to prevent and cure diseases and manage turf — as well as a variety of additional resources to help customers better manage their operations. Syngenta's Golf Mission Statement is as follows: *Offering the best golf experience through innovative golf course solutions and exceeding our commitments to our customers, the industry and Syngenta.*

Manufacturing facilities:

Syngenta Crop Protection operates five manufacturing facilities and two formulation facilities in the United States. Syngenta also contracts 43 other formulation and packaging facilities. These state-of-the-art facilities manufacture many of Syngenta's herbicides, fungicides and insecticides. Worker safety is top priority for manufacturing operations while producing the highest-quality products possible. Contract formulation and packaging allows rapid response to changing demand needs.

Technical support, sales, training and/or customer support:

In addition to its strong portfolio, Syngenta has the industry's most complete line of non-product-related offerings. These include the Web-based service GreenCast™ (www.green-castonline.com) that can deliver pest, weather and product information directly to a customer's desktop. In addition, Syngenta has five field technical representatives (which include former extension agents and university researchers, all with many years industry experience) who live and work in all districts across the United States. Through the GreenPartners® (www.greenpartnersonline.com) reward program, customers can accrue points for each Syngenta product purchase. These points can be redeemed for business tools such as com-

puters, equipment, and classes for GCSAA courses and conferences.

Major product lines:

Syngenta offers some of the most highly regarded products in the industry, including:

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Research and development:

Syngenta has two research facilities in Stein, Switzerland, and Jealotts Hill, U.K. Its dedicated staff conducts high throughput and secondary screening that targets key turf and ornamental pests. Syngenta has the highest research and development spend in the industry based on percentage of gross income.



Tee-2-Green Corporation

Tee-2-Green

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Product focus:

Tee-2-Green manufactures, markets and distributes Penn bentgrasses, the highest quality seed available for golf course tees, fairways and greens. Starting with the release of Penncross creeping bentgrass in 1955, all of Tee-2-Green's Penn Pals have been developed for disease resistance, aggressiveness, low mowing properties, and overall appearance and color.

Manufacturing facility:

All Tee-2-Green Penn Pals and their select consortium of Penn bent growers are subject to rigid production and certification standards governed by breeder Dr. Joe Duich and Oregon seed certification officials. The seed goes through a process of combining, cleaning, certification testing, packaging and tagging before being shipped for fall seeding. Scrupulous seed analysis awards the purest seed (98 percent or better) the Putting Green Quality tag.

Since 1955, all of Tee-2-Green's Penn Pals have been developed for disease resistance, aggressiveness, low mowing properties, and overall appearance and color.

Technical support, sales, training and/or customer support:

Tee-2-Green has an experienced team of experts covering the United States and the world to make recommendations for every region. The knowledgeable, accessible staff includes individuals formally educated in agronomy, and customer relationships are viewed as ongoing partnerships. In addition, a variety of tools are available, including reports, studies and data, as well as such resources as their Web site, informational videos, an annual Field Day and private tours.

Major product lines:

Penncross is still the industry standard for bentgrass excellence because of its aggressiveness, vigor, wear tolerance and ability to perform under a wide range of conditions. Also available from Tee-2-Green are Penneagle, PennLinks, Pennway and Penn Trio Blends, as well as the Penn A's and G's, each tailored to specific applications and objectives.



TEE-2-GREEN®

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Product focus:

Jacobsen®, Cushman®, Ryan®, Bob-Cat®, Bunton®, Steiner™, Brouwer™ and E-Z-GO® — these are the companies of Textron Golf, Turf & Specialty Products, the largest supplier of precision-cut mowers, golf cars, utility vehicles, high-performance aerators and turf renovation equipment to the golf and turf care industry. These companies serve customers worldwide through an extensive distribution network of professional turf-care dealers and distributors.

Affordable financing is available to customers of the Textron Golf, Turf & Specialty Products companies through Textron Financial Corporation.

Manufacturing facilities:

Manufacturing facilities are conveniently located throughout the United States and abroad:

Dalton, Ohio (Steiner turf tractors and Brouwer sod equipment)

Charlotte, N.C. (Jacobsen premium fairway and greens mowers and Ryan turf aerators)

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Johnson Creek, Wis. (Bob-Cat and Bunton commercial mowers)

Ipswich, U.K. (Ransomes and Jacobsen mowers and turf equipment)

For more than 100 years, Textron Golf, Turf & Specialty Products companies have been involved with the golf and turf care industry. Together, they comprise the largest corporate sponsor of GCSAA. Their longtime relationship with the association is a strong example of their commitment to golf course superintendents and to all other turf-care professionals.

For more information about products and services, please contact Textron Golf, Turf & Specialty Products.



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PEOPLE ON THE MOVE

The following superintendents recently achieved certification: **John Stevens** of Golf & Country Club of Swan Lake in Abingdon, Md.; **Andreas Herrmann** of Golf Club an der Schlei in Busdorf, Germany; **Chad Palicke** of Gowanie GC in Mount Clemens, Mich.; **Stephen Smith** of Lake Waramaug CC in Danbury, Conn.; **Randall Butler** of Naples (Fla.) Lakes CC; **Joseph Livingston** of River Crest CC in Fort Worth, Texas; **Brad Fryrear** of Whispering Pines GC in Trinity, Texas; and **Bruce Olson** of Emerald Hills GC in Redwood City, Calif.



The GCSAA awarded **Joel Jackson**, director of communications for the Florida GCSA and a *Golfdom* contributing editor, a Distinguished Service Award.

The GCSAA awarded the Center for Resource Management its 2003 President's Award for Environmental Stewardship in recognition of its coordination of the "Golf and the Environment" initiative.



Pete Dye was awarded the 2003 Old Tom Morris Award from the GCSAA. Textron Golf, Turf and Specialty Products announced that seven superintendents from the United States and Canada won its Jacobsen Super LF 1880 Demonstration Contest. The contest winners are: **Andy Fassett**, Sugar Creek GC, Villa Park, Ill.; **Todd Schmitz**, Fox Valley GC, North Aurora, Ill.; **Terry Boehm**, Avon Oaks CC, Avon, Ohio; **Bob Maibusch**, Hinsdale GC, Claredon Hills, Ill.;

Paul Brown, Islington GC, Islington, Ontario; **John Shaw**, Rolling Hills CC, McMurray, Pa.; and **Paul Dermott**, Oakdale Golf and CC, Downsview, Ontario.

The First Tee awarded GCSAA its inaugural The First Tee Founders Award.

KemperSports Management promoted two members of its executive staff: **W. Scott Beasley**, director of operations, was named vice president of operations for KemperGolf Management, and **Ken Carrano** was named controller for the same division.

TDI International, a golf course construction company, named **John Anderson** as president.

Douglas Shelnett, superintendent at Lane Creek GC in Bishop, Ga., won Club Car's "You Deserve a

Gimme" sweepstakes. He received a new Turf 2 utility vehicle free for a year.

Scott Harer and **Tom Pape** formed Columbia Seeds LLC. Harer and Pape are former employees of Seed Research of Oregon.

ClubCorp named **Lauri Stephens** as membership services director.

Allan Pulaski, director of golf and grounds at The Landings Club in Savannah, Ga., and **Lance Johnson**, superintendent of The Heritage at Westmoor GC in Westminster, Colo., helped their courses achieve Audubon Cooperative Sanctuary Status.

Let us know about your people on the move. Send information/color photos to Frank Andorka at 7500 Old Oak Blvd., Cleveland, 44130. E-mail to fandorka@advanstar.com.

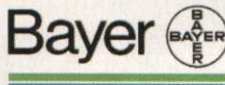
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The screenshot shows the website interface for TurfGrass Trends. At the top, there's a navigation bar with links like Home, Search, and Newsletter. Below that, the main content area features an article titled "Seashore Paspalum: A Rare Alternative for the Future" with a photo of a golf course. To the left, there's a sidebar with a table of contents including sections like "The Month's Issue", "Focus On", "Equipment", "Irrigation", "Plant Nutrition", "Soil", "Turfgrass Seed", "Weed Control", "Links", "Subjects", "Authors", "Resources", "Industry Links", "Industry Events", "Golfdom", and "Miscellaneous". On the right side, there are logos for Bayer, Andersons Golf Products, Scotts, and Jacobsen. At the bottom of the screenshot, there's a "NEED TO KNOW" section with links to various articles.

www.TurfGrassTrends.com

TURFGRASS TRENDS

Section II • Volume 11, Issue 12 • December 2002

www.turfgrasstrends.com

Inconsistent Weather Wreaks Havoc on Turf

This was an odd year for weather. Some areas were drier than usual, while others were wetter. This led to a number of problems for turf managers. Depending on the geography and rainfall, anthracnose, curvularia blight, gray leaf spot, microdochium patch, rhizoctonia blight and take-all root rot were rampant. However, there are cultural changes a manager can make to offset some of the curve balls thrown by Mother Nature.

The articles below take a look at typical situations in the Southwest and the Midwest this year, where Mother Nature threw even more curve balls than usual.

WEATHER TEXAS

Dry Winter, Wet Summer Caused Problems for Superintendents in Texas

By James McAfee

One of the old sayings in Texas is, "If you don't like the weather, just hang around a while because it will change."

The fall and early winter months for 2001-2002 in the state were dry, with temperatures above normal. This was followed by freezing temperatures that occurred in late February to early March. Next, for spring and early summer, the temperatures turned cool, and we received record rainfall in some areas of the state. In fact, by midsummer many areas of northeast Texas had already exceeded the average rainfall for the entire season, and temperatures remained well below normal. Rainfall continued in many areas of the state throughout the summer months, which is unusual for Texas.

While these weather conditions were welcomed by some individuals, because of lower water bills and reduced air-conditioning costs, these unusual weather patterns created numerous problems for superintendents.

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WEATHER MIDWEST

Abnormal Reversal of Conditions Led to More Disease in Midwest

By Karl Danneberger

For most of the Midwest, this was the year of extremes. Cool temperatures and wet conditions characterized the spring weather while the summer was the exact opposite: hot and dry.

In April, rainfall was 1 to 4 inches above the normal average, while average temperatures were two to five degrees below normal for much of the area.

This trend continued in May, with rainfall amounts of 6 to 10 inches above normal monthly averages while temperatures were close to normal.

June was a transition month, with the first part of the month receiving relatively high amounts of rainfall and normal temperatures, while the last half of the month saw a lack of rainfall and higher temperatures.

July and August had precipitation amounts half the normal rainfall expected, while average temperatures were five to eight degrees higher than

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- **Unmowed Roughs Save Time and Money**
Since 1988, native and exotic grasses, along with forbs, have been evaluated for their suitability to planting in unmowed rough areas. Here are the results from the University of Illinois. . . .T12

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One of the major problems associated with the unusual weather was increased weed invasion, particularly the grassy weeds such as crabgrass and dallisgrass. Besides increased weed problems, several turfgrass disease problems such as take-all root rot, rhizoctonia blight, curvularia blight and gray leaf spot in St. Augustinegrass were a more active in 2002.

Weed infestation

By the end of August, our office had received numerous phone calls from superintendents complaining about the large number of weeds on their properties. Most were inquiring as to what they could do in late August to September to remove unsightly weeds. While the arsenicals herbicides such as MSMA and DSMA can still be used at this time of the year for control of grassy weeds in warm-season turfgrasses such as bermudagrass and zoysiagrass, I generally discourage individuals from making MSMA/DSMA treatments in the fall. Control is harder to obtain because of the maturity of grassy weeds and, while the herbicides are selective, they do affect the growth and development of the warm-season turfgrasses going into the fall period.

My general response was to encourage the callers to live with these weeds for the rest of the season and then, most importantly, determine what led to such large populations of grassy weeds in 2002. Then, in future years when similar spring and early summer weather patterns occur, they can adjust their herbicide program to achieve a higher percent of control.

While there can be several reasons for above-normal weed populations, I believe the main culprit in 2002 was the unusual weather patterns, particularly above average rainfall in the spring and early summer months and below normal average temperatures which occurred until mid to late June.

In late May through mid-June, nighttime temperatures remained in the high 50 degrees F to low 60 degrees F range and the daytime temperatures were in the high 70 degrees F to low 80 degrees F range. Normally by the end of May, this area of the state will have mid to high 70 degrees F nighttime temperatures and mid to high 80 degrees F daytime temperatures. Freezing temperatures

occurred in late February to early March, which were followed by below normal temperatures and excess rainfall.

This resulted in a slow, delayed spring transition for our warm-season turfgrasses such as bermudagrass and St. Augustinegrass. By the time warm-season turfgrasses were actively growing in late June to early July, grassy weeds such as crabgrass, goosegrass and particularly dallisgrass had already become well-established in many golf courses.

Loss of some turfgrasses because of late freezes along with the slow development of the warm-season turfgrasses in the spring and summer of 2002 gave the weeds an opportunity to become well-established before the warm-season turfgrasses finally could form dense, actively growing turf.

In north Texas, late February to early March is generally regarded as the ideal time to apply pre-emergent herbicides for the control of summer annual grassy weeds such as crabgrass, barnyardgrass and goosegrass.

While some companies will make a second application in late spring, superintendents generally make one pre-emergent herbicide application in the spring for the control of summer annual grassy weeds.

In years such as 2002, where excess rainfall occurs in the spring and early summer months, the pre-emergent herbicide applications made in late January to early February start breaking down in the soil well before the turfgrasses are actively growing.

For many of these turfgrass sites, individuals managing these areas continued to make supplemental applications of irrigation even after high rainfall. This just adds to the problem of early breakdown by some of the pre-emergent herbicides. Continued rainfall throughout the summer months provided excellent conditions for continued germination and growth for many of the annual grassy weeds.

MSMA/DSMA

While it's normally recommended to start making postemergent applications of MSMA and/or DSMA for the control of grassy weeds in mid to late May for northern Texas, the below-normal temperatures in 2002 were still too cool for good activity with these products.

For the arsenicals to be effective, temperatures need to be in at least the mid to high

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80 degrees F range. Unfortunately, many individuals only looked at their calendars in 2002 and did not pay attention to the weather conditions. As a result, they started making their MSMA/DSMA treatments in early to mid-May as usual. Under ideal weather conditions, two to three applications of MSMA or DSMA should provide effective control of most grassy weeds.

However, when these products are applied below the required temperatures for good activity, it make take any where from three, four or even more applications to achieve effective control. These extra applications are not only costly, but can affect the normal growth and development of the warm-season turfgrasses at this time of the year. Even if good control is obtained in late spring to early summer months, the continued rainfall that occurred in 2002 helped more annual grassy weeds invade the turfgrass sites by mid to late summer months.

In years such as 2002, it will probably be necessary to schedule more than one series of postemergent applications for grassy weed control.

Companies contracting for weed control applications should build into their chemical budgets the possibility of having to make more than one series of applications for grassy weed control during years such as 2002. Also, in years where below normal temperatures occur in late spring and early summer, it will be best to delay the postemergent grassy weed control applications until the weather has become hot enough for good control to occur.

Overseeding factors

Another factor that contributed to the large number of grassy weeds in late summer 2002 is the practice of overseeding warm-season turfgrasses with a cool-season turfgrass such as perennial ryegrass.

This has been a common practice for golf courses in the South for many years. With below-normal temperatures and above-average rainfall for the spring and summer months of 2002, the perennial ryegrasses did not start to die off until late July to early August.

Once the ryegrasses did die in late summer, this left thin open areas in the warm-season turf which provided ideal conditions for increased germination and

growth of annual grassy weeds such as crabgrass.

In discussions with superintendents, this had to be one of the worst years for transition from the perennial ryegrass to the warm-season turfgrasses. Again, this slow transitioning of the ryegrass, along with the loss of warm-season turfgrasses, provided an ideal environment for the invasion of weeds, particularly the grassy weeds.

In years like 2002, it may be necessary to start forcing out the overseeded ryegrass in late spring to early summer to provide the warm-season turf a chance to form a dense, healthy stand of turfgrass.

Heightened disease problems

While the unusual weather conditions in 2002 had a major influence on weed populations in turfgrass, it also contributed to an increase in several turfgrass disease problems, such as take-all root rot, rhizoctonia blight, curvularia blight and gray leaf spot in St. Augustinegrass.

Of these three major disease problems, take-all root rot was the most active disease problem in St. Augustinegrass in the spring and summer of 2002. While the pathogen causing the disease has been identified in most warm-season turfgrasses in Texas, it has especially become a major problem in St. Augustinegrass throughout Texas.

According to Dr. Phil Colbaugh, experiment station plant pathologist at Texas A&M/Dallas, this pathogen is commonly found affecting the root system of our warm-season turfgrasses. The activity of this particular disease is greatly enhanced by prolonged periods of rainfall and/or excess supplemental irrigation in the spring and early summer months.

Take-all root rot is most active in the fall and spring months when soil temperatures are in the 60 degrees F to 65 degrees F range. However, above ground symptoms for this disease may not appear until summer months when the weather becomes hot and dry. The continuous heavy rainfall in late spring and early summer months of 2002 provided excellent growing conditions for this particular turfgrass pathogen, and its affects on St. Augustinegrass along the Gulf Coast were devastating.

Activity of the pathogen is also closely associated with stress problems such as hot, dry weather, excess nitrogen fertilizer, excess her-

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bicide applications, thatch, soil compaction and excessive shade problems.

In a recent survey, St. Augustinegrass infected with St. Augustinegrass Decline (SAD) was also more susceptible to take-all root rot activity. The unusual weather pattern that occurred in the winter of 2001 and through the spring and summer of 2002 no doubt enhanced the activity of the disease.

The winter months for 2001-2002 were dry with mild temperatures until late February and early March. Then in late February to early March, northern Texas was hit with several hard freezes, followed by continuous rain for the rest of the spring months and early summer months. These late winter freezes no doubt caused some damage to the St. Augustinegrass, particularly if it had not been watered during the winter months. Applications of excessive nitrogen fertilizer in the spring months to force recovery of damaged areas most likely added to the stress.

Also, applications of pre-emergent and postemergent herbicides to control weeds in these already thinned areas added to the additional stress to the turfgrass plants.

Initial symptoms for take-all root rot are yellowing of the St. Augustinegrass leaf blades in early spring. This yellowing is often mistaken for iron chlorosis, which is a common problem for St. Augustinegrass in Texas. However, applications of iron to these lawns will not correct yellowing problems caused by take-all root rot. As the turfgrass plants become stressed, patches of dead grass start to appear. These patches, which range in size from 1 foot to 2 feet and up to 5 feet to 6 feet, generally appear in the late summer months during the hot, dry weather conditions.

Close examination of the St. Augustinegrass plants will usually reveal plants with short, rotted black roots. In some cases, infected stolons will also have lesions on them. In severe conditions the stolons may become rotted.

Generally, the application of fungicides to control take-all root rot have not been effective. Fungicides listed for the control of this particular pathogen include azoxystrobin, myclobutanil, propiconazole, thiophanate methyl and triadimefon. In fungicide trials for take-all root rot in Texas, fall application of azoxystrobin provided the most effective control. These fungicides appear to work best as a

preventive program applied in late fall and early spring.

Fungicides applied as a curative for take-all root rot have generally given little control. Starting in 1999, we evaluated several organic topdressing products for control of take-all root rot in St. Augustinegrass. Of the six different treatments used in our first trial, a composted cow manure product provided good to excellent recovery of areas in St. Augustinegrass.

Further trials in subsequent years continued to demonstrate good turf growth in response to the composted cow manure product. However, disease control of take-all root rot was best obtained using a peat-moss material. Use of acid topdressing to reduce pH of the exposed stolon layer appears to be an effective way to control this disease.

While excess rainfall cannot be prevented in some years, it is possible to control other factors which may enhance this disease during these high rainfall periods. When weather conditions happen such as in the spring of 2002, avoid applications of high rates of nitrogen fertilizers. Apply light rates of a fertilizer containing nitrogen and potassium in the same ratio such as a 1-0-1.

Use an acidifying nitrogen source such as ammonium sulfate when possible. Application of lime products to areas affected with take-all root rot can enhance activity of this particular disease. Try to use acidifying type products whenever possible.

Also, avoid overapplication of herbicides on St. Augustinegrass. As a general rule, I have always recommended against the use of pre-emergent herbicides on St. Augustinegrass under stress in the spring months. Application of a pre-emergent herbicide to already stressed St. Augustinegrass can further weaken its root system.

Application of postemergent broadleaf herbicides to St. Augustinegrass during the spring transition can result in damage to St. Augustinegrass, particularly if it is already under stress.

Controlling thatch, alleviating soil compaction and reducing excess shade could also help prevent take-all root rot activity. If the turf has a history of take-all root rot problems, applying a preventive fungicide application in early fall and again in early spring when soil temperatures are in the 60 degrees F to 65

Bayer Environmental Science



QUICK TIP

The Chipco Professional Products group of Bayer Environmental Science is conducting a free online training program entitled "Poa annua Control" on its Web site, www.bayerchipco.com. The training session addresses how professionals have been challenged with *Poa annua* and will review strategies for control and management. Participants will learn about cultural practices and herbicides to consider, depending on the control method and situation.

degrees F range could also lessen the activity of this pathogen.

Rhizoctonia blight

Take-all root rot in St. Augustinegrass is often mistaken for rhizoctonia blight. One of the easiest methods to distinguish the difference between these two common turfgrass diseases is to examine the affected leaves of the St. Augustinegrass.

The yellow to tan leaves of plants infected with rhizoctonia blight can easily be pulled from the stolons, while the leaves of plants affected with take-all root rot are still firmly attached to the stolons.

Secondly, roots of plants infected with brown patch generally remain white, while the roots of plants infected with take-all root rot are shortened, black and usually rotted.

Rhizoctonia blight is primarily a disease problem for warm-season turfgrasses in the fall when nighttime temperatures fall below 70 degrees F and daytime temperatures are in the low to mid 80 degrees F range. In springs such as 2002, when continuous rainfall and cooler than normal temperatures occur, this pathogen can become active on warm-season turfgrasses.

It should also be noted that brown patch is generally more active in the spring on buffalograss than in the fall. This is especially true if the buffalograss is fertilized with nitrogen in late winter to early spring. For buffalograss sites, it is always best to delay the spring application of nitrogen fertilizer until late spring to early summer to avoid encouraging brown patch activity, especially in years like 2002 when excess rainfall and below-normal temperatures occur.

While spring application of fungicides for brown patch are not normally required, superintendents need to be on the lookout for brown patch activity and treat affected turfgrass areas as soon as possible during extended wet, cool spring and early summer periods.

Fungicides labeled for brown patch include azoxystrobin, flutolanil, iprodione, myclobutanil, PCNB, propiconazole, thiophanate methyl and trifloxystrobin.

Gray leaf spot

A third disease which can become a serious problem, particularly in late spring to early

TABLE 1

Texas rainfall

Days	Station	Rainfall
8	Comfort	32.00
5	Sisterdale	26.70
5	Campe Verde	21.45
6	Tarpley	20.56
9	Johnson City-SW	19.72
5	Boerne	19.44
9	Ballinger	17.82
9	Fredericksburg	17.74
4	Helotes	17.37
5	Fredericksburg	17.08
7	Johnson City-NW	16.70
9	San Antonio	16.48
5	Bulverde	16.25
9	Burnet	15.63
9	Round Mountain	14.77
9	Cypress Mill	14.62
9	Bertram	14.61
5	Abilene	13.97
9	Cypress Mill	13.39
8	San Antonio-NE	13.31
5	Kerrville	13.00
9	Marble Falls	12.99
9	Dripping Springs	12.96
9	Burnet-S	12.47
7	Spicewood	12.06

The National Weather Service's rainfall amounts (in inches) in Texas for the nine days starting June 29-July 8, 2002. Listed are only locations with a foot or more of rainfall; 77 more stations reported more than 6 inches.

DAYS = number of days of reported data for the stations. Some stations only report when rainfall occurs

summer months, is gray leaf spot.

While this pathogen is not nearly as widespread as take-all root rot and rhizoctonia blight, it can cause serious damage and/or loss of St. Augustinegrass in the late spring to early summer months when high humidity and mild temperatures occur.

In 2002, the continuous rainfall throughout the spring and summer months greatly enhanced the activity of this disease in St. Augustinegrass.

Application of a nitrogen containing fertilizer to St. Augustinegrass already infected with gray leaf spot will increase the activity of this pathogen.

In years such as 2002, closely monitor the St. Augustinegrass areas for gray leaf spot and delay spring application of nitrogen fertilizers until the disease is under control.

Fungicides labeled for the control of gray leaf spot include azoxystrobin, chlorothalonil, propiconazole and trifloxystrobin.

James McAfee is associate professor and extension turfgrass specialist for the Texas Cooperative Extension in Dallas. He works with turfgrass management in north and northeast Texas.



~~FLYING~~

FLIGHT
SCHOOL, 1989

~~HEIGHTS~~

CLIMBED
EVEREST,
1995

~~GRUBS~~

TREATED WITH
MERIT, 2001

CLOWNS



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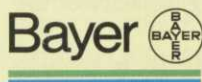


TABLE 1**Precipitation ranks for the Midwest region, 2001-2002**

Period	Rank
May	3rd driest
April-May	5th driest
March-May	5th driest
Feb-May	3rd driest
Jan-May	4th driest
Dec-May	6th driest
Nov-May	9th driest
Oct-May	6th driest
Sep-May	3rd driest
Aug-May	2nd driest
Jul-May	3rd driest
Jun-May	3rd driest

SOURCE: NATIONAL WEATHER SERVICE

Continued from page T1

normal. These extremes led to conditions that made for a difficult year in turfgrass maintenance.

The cool, wet spring resulted in considerable top growth, which required frequent mowing. At the same time, the wet conditions made mowing difficult. Scalping was common on many turfgrass sites. Although top growth recovered, repeated scalping had the long-term affect of reducing root growth.

Root growth was also restricted in areas where extended periods of excessive moisture resulted in saturated or waterlogged soils.

Under these conditions root growth was inhibited, in effect reducing the potential water-absorbing capacity of the plant going into summer.

In addition to the difficulty in keeping things mowed, the potential for significant compaction and wear from equipment on

wet soils was a concern. For example, on golf courses in areas that receive repeated traffic or wear like collars and greens surrounds (not to mention greens themselves), the potential for soil compaction was high.

Generally, turf thinning from soil compaction did not show until the occurrence of summer stress. Thus, once the rain stopped, many superintendents were out coring, quadratining or using a Hydroject to relieve compaction. Turf areas that were

Although noticeable, damage to leaf blades is a minor concern.

What is far more important as an indicator of the overall health of the turf is the status of the crown.

high in clay content were especially susceptible to compaction.

A variety of diseases occurred during the spring. In early to midspring microdochium patch was active. This disease, also known as pink snow mold, is generally easy to diagnose. When this disease occurs late in the spring, however, many turfgrass managers misdiagnose it as cool-temperature pythium.

Microdochium patch can produce streaking symptoms similar to what would be expected with pythium, especially in drainage areas. In most cases, however, if one suspected cool-temperature pythium blight, it was almost always microdochium patch in 2002.

Toward the middle to late spring, the wet conditions — with increasing temperature — resulted in dollar spot being active sooner than normally would be expected. Although this disease got off to an early start, once it got hot and dry the severity of this disease decreased compared to previous years.

Summer stress

As previously mentioned, temperatures above normal and drought conditions characterized the summer in the Midwest.

Although there were a number of prob-

lems associated with this past summer, I would like to highlight three. The first was anthracnose. Basal rot anthracnose occurred on greens that had previously been stressed, primarily by mowing greens intensively to achieve increased ball roll.

Anthracnose symptoms progress from small yellow patches to large blighted areas with a more orange appearance.

As the severity of the disease increases, large sections of the greens can decline rapidly. *Poa annua* greens were the most susceptible especially where wear was intensive or if the turf was growing under shaded conditions.

Greens that were under low fertility programs also appeared to be more susceptible to this disease. Creeping bentgrass was more tolerant to the disease, but under stress conditions anthracnose symptoms were expressed.

Tree removal

As greens are becoming more intensively managed, anthracnose will be a persistent problem. This year, many golf courses are contemplating initiating a tree removal program to help relieve the stress associated with shade and provide a better growing environment to help reduce the severity of anthracnose.

In a few situations, golf courses are converting *Poa annua* greens to creeping bentgrass. In these situations, knowing why *Poa annua* was there in the first place will help slow or prevent its colonization.

The dry conditions raised concern on the long-term effect on dormant Kentucky bluegrass. Dormancy is a mechanism that Kentucky bluegrass uses to avoid conditions where inadequate moisture is available for growth. The most noticeable aspect of dormancy is the brownish-tan color of the leaf blades.

Although noticeable, damage to leaf blades are a minor concern. What is far more important as an indicator of overall turf health is the status of the crown. If the crown is damaged, the plant will not recover. Conversely, healthy crowns will generate new leaves and stems with the arrival of moisture.

Research is not conclusive on how long Kentucky bluegrass can remain dormant,

Overwatering causes fairways so wet that golf ball will plug and have minimal roll.

but the dormancy phase could last indefinitely as long as the crown is healthy. This year, once rain did arrive, Kentucky bluegrass that had received light applications of water 6 to 8 weeks into the drought recovered quickest.

The last major concern was irrigation practices on golf courses that either resulted in too much water or not enough during the latter half of the summer.

Irrigation issues

Nonirrigated areas on many golf courses, including roughs and green surrounds, became dry and hard. These conditions made a poorly struck golf shot even more errant.

In contrast, some fairways were overwatered because superintendents were trying to throw water into nonirrigated areas to prevent turf loss. The result was fairways that were so wet that golf balls would plug and have minimal roll.

These two contrasting conditions often occurred together on the same courses, causing complaints from golfers.

Although the contrast between the spring and summer seasons was striking, the problems associated with this year were often related. The wet springtime conditions restricted root growth in areas where either saturated or waterlogged conditions persisted.

A turf that has a shallow root system going into a hot, dry summer will be greatly affected. A shallow root system places turfgrass at a greater risk to moisture deficits and high soil temperatures.

As this year comes to a close, we can hope that next year will bring more moderate weather conditions.

Karl Danneberger, Golfdom's chief science editor, is active in research, teaching and extension with the other turfgrass faculty in entomology, plant pathology, and natural resources at The Ohio State University in Columbus, Ohio.



QUICK TIP

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Unmowed Roughs Save Money and Time

By Tom Voigt

Whether it's because of golf course design trends, wildlife habitat creation, or perceived labor and chemical input reductions, unmowed roughs in Midwestern golf courses have become popular.

In existing courses, creating and managing these areas successfully often entails more than allowing previously mowed areas to go without mowing. In new construction, selecting the most appropriate mix of plants will ensure that not only is the ground covered and erosion controlled, but that the golfing experience is also enhanced.

Since 1988, native grasses and forbs have been evaluated at the University of Illinois for their suitability to planting in unmowed rough areas. In addition, through working with superintendents and through on-course observations, it has been easy to arrive at several conclusions about plant selection, management and golfer acceptance.

Finally, new questions about planting and managing unmowed roughs continue to be asked, giving rise to additional research opportunities.

What have we done?

Working with plants for unmowed roughs began in 1988, when a large group of native Midwestern grasses were planted at the University of Illinois Landscape Horticulture Research Center in Urbana (Voigt, 1993). These grasses were selected for their variable aesthetic appeal and also for their tolerance to a variety of environmental settings.

Following more than three years of evaluation, results were used to develop a planting plan for an unmowed rough area on the south course at Olympia Fields CC in south-suburban Chicago. While mostly successful, this experience exposed several problems with an all-grass design, weed invasion, planting methods and golfer acceptance (Voigt, 1996).

In 1999, a study was designed to improve superintendents' knowledge and under-

standing of more than 50 species of native grasses and forbs.

Planted at three Chicago-area golf courses in either full-sun or partial-shade settings, these plants were evaluated for aesthetic value in unmowed roughs and to evaluate their long-term performance following three different planting-bed preparation options (Voigt, 2001; Voigt, 2000; Voigt, 1999a; Voigt, 1998b).

During August and September 2000, another study was planted in an unmowed rough at a central Illinois golf course. The objectives of this research are to evaluate several species of exotic turf and native grasses suitable for use in rough naturalizing and prairie revegetation, and also to evaluate vegetation removal practices and chemical weed control in this planting.

Moreover, superintendents have been formally surveyed and informally questioned about their work with unmowed roughs since the beginning of these studies and demonstrations. Normally, most interactions with superintendents occurred during frequent golf course visits when on-course observations took place (Voigt, 1998a).

What we've learned

There are many grasses and forbs suited to planting in unmowed roughs (Table 1). Some of these plants solve landscape problems (e.g., wet or dry sites, shaded settings), some have great aesthetic appeal and some even look good while solving landscape problems.

Among the native grasses, big bluestem, side-oats grama, blue grama, northern sea oats, tufted hairgrass, bottlebrush grass, purple lovegrass, switchgrass, little bluestem, Indiangrass, cordgrass and prairie dropseed can perform well in unmowed roughs (Voigt, 1993). Nodding wild onion, false sunflower, ironweed, Culver's root, rattlesnake master, yellow coneflower, foxglove digitalis, mountain mint and stiff goldenrod can make valuable additions to roughs because of their attractive flowers (Voigt, 2001; Voigt, 2000;

Granular Pre-emergent Herbicides

Controlling crabgrass, goosegrass and other annual weeds is relatively easy compared with trying to choose between the multitude of active ingredients available today in both sprayable and granular forms. The evolution of pre-emergent herbicides has seen the active ingredient load decrease and the residual and spectrum of weed control increase, resulting in more cost-effective and environmentally friendly products. Improved formulation techniques have enabled fertilizer with pre-emergent combination products to provide residual control that equals or exceeds their sprayable counterparts, while providing essential plant nutrients.

Particle size and uniformity have a substantial impact on residual control, especially with low-solubility herbicides like Barricade® and Dimension®. Dusty, non-uniform large particle formulations can result in off-site drift and substantially reduced weed control. Low mobility herbicides must be uniformly placed on the treated area to provide the longer-term residual it was designed to have. University studies have demonstrated that low-mobility fertilizer with pre-emergent products perform better on a mid-sized particle (SGN 150) than on larger particle sizes ranging from an SGN of 200 to 300. A 150-pound per-acre application on a 150 SGN fertilizer base delivers close to three times as many particles per square inch as a 200 pound per acre application on a 240 SGN particle. The number of particles per square inch has a greater influence on the effectiveness of a pre-emergent product than the pounds per acre. Without a doubt, when evaluating the effectiveness of pre-emergent products, every square inch counts.

The Andersons offers a wide selection of high-quality granular pre-emergent formulations. The choices are:

- Dithiopyr with fertilizer in greens grade formulations;
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- Ronstar with Fertilizer;
- ProPendi® with fertilizer;



- Barricade with fertilizer;
- Dimension with fertilizer; and
- Kansel® + with fertilizer (Ronstar/Pendimethalin).

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For effective crabgrass and goosegrass control, tailor your program to your climatic conditions.

In the South and transition zones, apply two applications of Fertilizer with ProPendi at 1.5 pounds active ingredient (AI) per acre for each application. When goosegrass or winter injury to bermudagrass is a problem, Ronstar should be your top choice. Or apply a DNA (Pendimethalin or Barricade) early for crabgrass followed by Fertilizer with Ronstar at 2 pounds AI per acre.

In the South, Kansel + (28-0-0 with Ronstar and Pendimethalin formulated on a methylene urea fertilizer base) or one of several Ronstar and Dimension formulations provide season-long crabgrass and goosegrass control with one application.

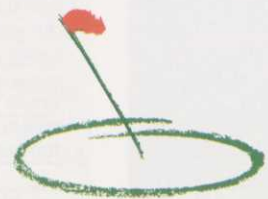
In the North, use one application of fertilizer with ProPendi at 1.5 pounds AI per acre.

In the North, the wider application window of fertilizer with Dimension allows for ryegrass seeding in the spring followed by a Dimension application of 0.16 to 0.25 pounds AI per acre. When the crabgrass germination period is longer, use two split applica-

tions ranging from 0.25 to 0.38 pounds AI per acre.

To control goosegrass on greens, apply Goosegrass/Crabgrass Control using two half-rate applications at a two-week interval. Fertilizer with Barricade will provide effective season-long crabgrass control with one application with rates ranging from 0.65 pounds AI in the North to 1 pound AI per acre in the South.

The Andersons' granular pre-emergent formulations have set the industry standard for low-dust, particle-sizing and consistently formulated products resulting in a balanced application pattern with even coverage. The Andersons unique formulation process insures handling integrity, ease of application and proper distribution of the active ingredient from the particle to the soil with rainfall or irrigation. This translates into superior pre-emergent weed control.



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TABLE 3

Twenty-five valuable plant species for unmowed rough planting

Plant (height)	Comments
Native grasses	
big bluestem <i>Andropogon gerardii</i> (3'-8')	Upright, spreading warm-season grass; blue-green foliage becomes dull red in autumn; best in mesic and hydric sites; use in far roughs as in masses, as a temporary screen, or a background plant.
side-oats grama <i>Bouteloua curtipendula</i> (1'-3.5')	Mounding, warm-season grass; gray-green foliage; xeric to mesic sites; flowers in mid-to-late summer; mass for best effect.
blue grama <i>Bouteloua gracilis</i> (1'-3.5')	Bunch-type, mounding, warm-season grass; fine textured, light green foliage; xeric to mesic sites; purplish flowers in late summer; mass for best effect.
northern sea oats <i>Chasmanthium latifolium</i> (2'-5')	Narrow, upright, weakly rhizomatous, cool-season grass; light green, coarse-textured foliage; mesic sites in light shade; flat, dark green inflorescences June to October becoming bronze at maturity; Very attractive in flower; Can spread by seed.
tufted hairgrass <i>Deschampsia cespitosa</i> (2'-3')	Mounded, bunch-type, cool-season grass; dark green, fine-textured foliage; xeric to hydric sites in full sun or light shade; light green to golden panicles in early season; propagate by seed and division; mass for best effect.
purple lovegrass <i>Eragrostis spectabilis</i> (1'-2')	Fine-textured foliage; xeric to mesic sites; very attractive red-purple panicles in late summer; mass for best effect.
bottlebrush grass <i>Hystrix patula</i> (2'-4')	Upright, bunch-type to weakly rhizomatous, cool-season grass; medium green foliage; xeric to mesic sites in light shade; bottlebrush-shaped flower spikes in May and June
switchgrass <i>Panicum virgatum</i> (3'-6')	Upright, aggressive, spreading warm-season grass; medium green foliage becoming bronze at maturity; xeric to hydric sites, will tolerate light shade; pale yellow flowers July through September.
little bluestem <i>Schizachyrium scoparium</i> (1'-3.5')	Upright, slowly spreading to bunch-type warm-season grass; blue green foliage becoming rust-colored in autumn and winter; xeric to mesic sites, can tolerate light shade; reddish flowers in late summer and early fall; mass for best effect.
Indiangrass <i>Sorghastrum nutans</i> (4'-8')	Upright, spreading, warm-season grass; bluish green, coarse textured foliage; short-lived, beautiful gold-bronze flowers in August and September; xeric to mesic sites; use in far roughs as in masses, as a temporary screen, or a background plant.
Cordgrass <i>Spartina pectinata</i> (5'-6')	Upright, vigorous, spreading, warm-season grass; arching, medium- to coarse-textured foliage with saw-toothed margins; can be invasive spreading by vigorous rhizomes; hydric to mesic sites, will tolerate light shade; golden-yellow flowers in August and September; especially useful in low, wet areas.
prairie dropseed <i>Sporobolus heterolepis</i> (1'-3')	Upright, mounding, warm-season grass; fine-textured, delicate, medium-green foliage begins growth in mid spring and becomes yellow in fall; xeric to mesic sites; pale pink fragrant panicles in August and September. Masses of this grass are especially interesting in August and September when foliage is changing color and it is in flower.
Native forbs	
nodding wild onion <i>Allium cernuum</i> (2'-3')	Upright growth with spreading habit; long, narrow leaves with drooping white pink flowers on upright stems July through early September; tolerates full sun and light shade in mesic settings
false sunflower <i>Heliopsis helianthoides</i> (3'-4')	Upright, slowly spreading growth; sharply toothed dark-green leaves and showy butter yellow disk and ray flowers July through early September; mesic to hydric sites in full sun; a reliable performer.
rattlesnake master <i>Eryngium yuccifolium</i> (4'-6')	Upright growth; stiff, gray-green, sharply pointed yucca-like leaves and interesting silvery greenish white ball-shaped inflorescences July and August; xeric to mesic sites in full sun.
foxglove beard tongue autumn, <i>Penstemon digitalis</i> (3')	Spreading, upright plant; glossy green-toothed foliage sometimes becomes reddish in attractive white flowers occur June through early July; xeric sites in full sun.
common mountain mint <i>Pycnanthemum virginianum</i> (3')	Upright, bushy spreading plant; fine-textured medium-green, narrow foliage and masses of dense white inflorescences in mid-July through August; hydric to mesic sites in full sun.
yellow coneflower <i>Ratibida pinnata</i> (3'-5')	Upright growth; medium-green foliage and yellow ray flowers with green gold cones in July and August; mesic to xeric sites in full sun.
stiff goldenrod <i>Solidago rigida</i> (3'-6')	Upright, spreading growth habit; leathery, hairy foliage and bright yellow inflorescences in late August through September; mesic to xeric sites in full sun.
common ironweed <i>Vernonia fasciculata</i> (3'-4')	Upright, spreading shrub-like growth; smooth, toothed leaves and dark purple inflorescences August through September; hydric to mesic sites in full sun.
Culver's root <i>Veronicastrum virginicum</i> (3')	Upright growth habit; leaves have saw-toothed margins and spire-like white inflorescences July through August; hydric to mesic sites in full sun.
Exotic cool-season turfgrasses	
orchardgrass <i>Dactylis glomerata</i> (2.5'+)	Coarse-texture foliage; plant in far roughs in light shade.
fine-leaf fescues (creeping red, chewings, hard, and sheep types) <i>Festuca spp.</i> (1'-1.5')	Fine-textured foliage of variable grays, greens and blue-greens; can lodge; avoid compacted or heavy, wet sites; full sun or light shade; mow prior to flower formation in spring and again in early autumn; usually forms dense stand.
tall fescue <i>Festuca arundinacea</i> (1'-2')	Medium-to-coarse textured foliage of medium green; tolerates full sun or light shade; usually forms dense stand.
Timothy <i>Phleum pratense</i> (2.5'+)	Coarse-textured foliage; plant in far roughs in light shade.



QUICK TIP

Scotts and Monsanto have withdrawn their petition to commercialize Roundup Ready Creeping Bentgrass while researchers compile additional performance data. The companies still expect to launch the product in 2004-05.

Voigt, 1999a; Voigt, 1998b). Among the exotic turfgrasses, the fine-leaf fescues, tall fescue, redtop, Timothy and orchardgrass have been grown successfully.

Unmowed areas serve a variety of purposes on the course. These areas are used to enhance wildlife habitat, define out-of-play areas, add variety and aesthetics to the golf course landscape, reduce maintenance and serve as wetland or water-retention areas.

It's important to develop a plan for the site, plant selection, planting method and post-establishment maintenance (particularly weed control and the use of burns). Use local experts, references and the Internet to assist with the planning process. Time spent planning may postpone planting, but produce better-quality long-term results (Voigt, 2000).

Planting methods and expenses vary. For most exotic turfgrasses and many native grasses, seeding is an economical establishment method. Rotary tilling immediately before seeding often brings weed seeds to the surface, producing heavy competition for the new seeding. Thus, weed control prior to planting often starts the year before planting and employs a combination of fallow growth, rotary tilling and herbicide applications.

If seeds are used to establish mixed plantings, forbs may not flower until the second or third year following seeding. Plugs of native plants can produce outstanding results. Up-front costs are high, however, and irrigation is usually necessary during establishment. Consider seeding large areas of grasses and using beds or island plantings of forbs to add color to the site.

Unmowed areas require inputs. A Chicago-area superintendent (noted for impeccable record-keeping) mentioned several years ago that at that time, he spent about \$1,100 per acre per year to maintain a mowed rough, while it cost about \$700 per acre per year to maintain an unmowed rough (mostly for labor-intensive hand-weeding).

In native plantings, fire can be used to control weeds, recycle nutrients, speed spring green-up and influence plant composition (spring fires can enhance warm-season grass development; autumn fires can enhance forb development). Before planting, check with local authorities on what is required prior to burning.

In Illinois, an industry has developed that will professionally design, plant and manage golf course natural areas. These firms often take care of all aspects of conducting a burn, including acquiring the required permits and local permission.

Weed invasions and mowing can be costly. In the Midwest, Canada thistle, chicory, white and yellow sweet clover, and wild carrot often develop in all types of unmowed roughs and can aggressively take over areas if left unchecked. One of the worst offenders, Canada thistle, can totally eliminate other plants from large areas as it spreads by underground stems.

Beyond weed control, roughs comprised of unmowed cool-season turfgrasses normally require mowing one, two or more times per season, and removing the clippings is usually recommended.

Weed control in mixed plantings containing grasses and forbs is often difficult. Broadcast applications of herbicides used for broadleaf weed control may damage forbs, while grass controls may damage desirable grass species. Fire, spot herbicide applications and hand-weeding are often used together in mixed plantings to control weeds.

Unmowed areas need to be sited or allowed to develop in areas where they will not interfere with play. A round of golf can be spoiled if play is slowed while time is spent searching for errant shots hit into tall plants.

At some clubs, golfers previously accustomed to wall-to-wall mowing complained about the unkempt nature of the course after areas went unmowed for a season.

Golfers often like to see some colorful wildflowers in unmowed areas. Be cautious, however, when planting seed mixes containing large amounts of annual and biennial exotic flowers. In some cases, even though perennial species are part of a mix, the plantings seem to become less attractive following one or two years of color because the perennials don't develop as hoped.

Future research in unmowed roughs

As these areas have become more commonplace in the golf course landscape, new ques-

tions about plant species, site management and playability are asked.

For example, in the past couple of years, superintendents have continuously requested playable, unmowed roughs where grasses and other plants are relatively low growing and without great density. In these areas, golf balls can be easily located and, because of the low plant density, a golfer has the opportunity to hit out of a hazard. Settings like this can occur when soils are relatively infertile or dry.

In much of Illinois, however, soils are fertile enough and retain enough moisture to support dense plantings. If desirable plants are planted at low densities, the unplanted spaces usually fill with undesirable vegetation, which creates maintenance problems.

The combined use of plant growth regulators and prairie-restoration herbicides on large native grasses has been suggested as a way of providing a setting that satisfies the superintendents desiring open, unmowed roughs.

A new research and demonstration site is now being developed at Cog Hill GC in the southwestern suburbs of Chicago at the Chicago District Golf Association's Midwest Golf House.

At this site, new, low-growing varieties of exotic turfgrasses will be tested to determine suitability for unmowed rough planting. Other studies will examine seeding rates of exotic turfs to identify differences in mature plant densities. Still other evaluations will test chemical-control applications to newly identified herbicide-tolerant plants.

Additional work will be conducted evaluating mixes of exotic ornamental grasses interplanted with exotic turfgrasses (A northern Illinois superintendent produced an interesting unmowed area in light shade when he planted clumps of Karl Foerster Feather Reed grass into a mix of tall fescue, Timothy and orchardgrass.)

Finally, low-growing Midwestern native prairie mixes have been selected and will be seeded following the 2002 growing season to evaluate over the next three to five years their suitability for unmowed roughs.

Midwestern golf turf managers have great interest and enthusiasm about the work to improve the quality of unmowed roughs. They seek more information about the palette of plants suited to these areas and improved techniques for their management. These superintendents, and the golfing public, stand to benefit as these areas provide a more interesting golfing experience coupled with improved wildlife habitat.

Voigt is an assistant professor and extension turfgrass specialist at the University of Illinois Extension.

REFERENCES

- Voigt, T. 2000. "Native Midwestern plants for golf course landscapes." *Ergenia*. Vol. 18:56-63.
- Voigt, T. 1999a. "Natives in unlikely surroundings." *Illinois Steward*. Vol. 8: 1. pages 4-8.
- Voigt, T. 1998b. "An evaluation of native Midwestern plants for use in the golf course landscape." Conference Proceedings. GCSAA 69th International Golf Course Conference and Show. Anaheim, Calif. February 2-8.

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Editorial: 440-238-4556

Web site: www.turfgrasstrends.com

Golfdom

December 2002
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NAME (please print) _____ JOB TITLE _____
 FIRM _____
 ADDRESS* _____
 CITY _____ STATE _____ ZIP _____
 *Is this your home address? Yes No
 PHONE (_____) _____ FAX (_____) _____
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I would like to receive GOLFDOM free each month: Yes NO

Signature _____ Date _____

1. My primary business at this location is: (fill in ONE only)

GOLF COURSES

- 01 10 Daily Fee/Public
- 02 20 Semi-Private
- 03 30 Private
- 04 40 Resort
- 05 50 City/State/Municipal
- 06 55 Other Golf Courses (please specify) _____
- 07 60 Golf Course Architect
- 08 70 Golf Course Developer
- 09 90 Golf Course Builder
- 10 105 University/College
- 11 115 Distributor/Manufacturer/Consultant
- 12 100 Others Allied to the Field (please specify) _____

2. Which of the following best describes your title? (fill in ONE only)

- 13 10 Golf Course Superintendent
- 14 15 Assistant Superintendent
- 15 25 Owner/Management Company Executive
- 16 30 General Manager
- 17 35 Director of Golf
- 18 70 Green Chairman
- 19 45 Club President
- 20 75 Builder/Developer
- 21 55 Architect/Engineer
- 22 60 Research Professional
- 23 65 Other Titled Personnel (please specify) _____

3. What is your facility's annual maintenance budget?

- 24 A More than \$2 Million
- 25 B \$1,000,001-\$2 Million
- 26 C \$750,001-\$1 Million
- 27 D \$500,001-\$750,000
- 28 E \$300,001-\$500,000
- 29 F \$150,001-\$300,000
- 30 G Less than \$150,000

4. If you work for a golf course, how many holes are on your course?

- 31 A 9
- 32 B 18
- 33 C 27
- 34 D 36+
- 35 E Other (please specify) _____

Please send Golfdom to the following people at my organization:

Name _____

Title _____

Name _____

Title _____

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103	115	127	139	151	163	175	187	199	211	223	235	247	259	271	283	295	307
104	116	128	140	152	164	176	188	200	212	224	236	248	260	272	284	296	308
105	117	129	141	153	165	177	189	201	213	225	237	249	261	273	285	297	309
106	118	130	142	154	166	178	190	202	214	226	238	250	262	274	286	298	310
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108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
109	121	133	145	157	169	181	193	205	217	229	241	253	265	277	289	301	313
110	122	134	146	158	170	182	194	206	218	230	242	254	266	278	290	302	314
111	123	135	147	159	171	183	195	207	219	231	243	255	267	279	291	303	315
112	124	136	148	160	172	184	196	208	220	232	244	256	268	280	292	304	316



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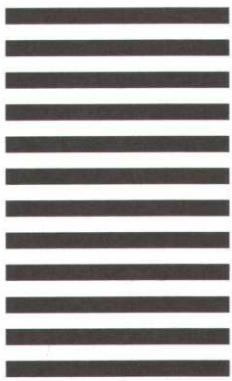




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The Company Line

■ PRODUCTS & SERVICES



▲ Stump cutters

Vermeer Manufacturing offers the SC90 (9 horsepower) and SC130 (13 horsepower) stump cutters, which feature enough power to remove stumps up to 3 feet in diameter. The unit's slim width allows it to be easily maneuvered into tight spaces. Convenient lift handles, located on each side of the unit, make for easy two-person loading, which eliminates the need for ramps.

For more information, contact 888-837-6337, www.vermeer.com or

CIRCLE NO. 200

► Meter

Spectrum Technologies

offers the new SC-900 Soil Compaction Meter, the latest in its line of portable meters. The meter features an ultrasonic depth sensor, integrated data logger with GPS compatibility and a user-friendly interface. The



meter offers instantaneous, research-grade data on soil conditions, the company says.

For more information, contact 800-248-88763, www.specmeters.com or

CIRCLE NO. 201

Vegetation control

Becker Underwood introduces Admiral WSP — a dry, concentrated product developed to control aquatic vegetation and algae. Admiral recently received California EPA registration.

Admiral controls aquatic vegetation and the formation of algae by restricting sunlight necessary for aquatic plant growth. Its natural blue color also improves the aesthetics of any pond, lake or waterway, the company says.

Admiral is labeled for use in ponds, lakes and other bodies of water where aquatic vegetation control is essential.

For more information, contact 800-232-5907, www.beckerunderwood.com or

CIRCLE NO. 202

Bunker lining

Green Mountain International

has been granted a patent on the Klingstone process for lining bunkers. Klingstone has been used on golf courses throughout the United States to lower maintenance costs by stopping contamination of bunker sand and sidewall erosion. Because it is applied as a liquid, it conforms perfectly to any bunker shape. Klingstone is easy to apply and durable. Tim Johnson, superintendent of Springhill GC in Wayzata, Minn., was instrumental in developing the application techniques and procedures.

For more information, contact 800-942-5151,

www.klingstone.com or

CIRCLE NO. 203

Roundup-tolerant fescue

Turf-Seed offers Aurora Gold, a Roundup-tolerant hard fescue ideal for creating weed-free areas and soil stabilization in numerous applications, including golf course roughs. Aurora Gold is the result of natural breeding and selection conducted by Pure Seed Testing, an affiliate of Turf-Seed.

Studies at Rutgers University show that Aurora Gold tolerates up to 16 ounces of Roundup per acre, with less than 8 percent damage, even with repeated applications. This tolerance makes Aurora Gold an effective component of a maintenance program to control annual bluegrass on golf courses, Turf-Seed says. When controlled in the rough, annual bluegrass is less likely to contaminate fairways and greens. To control resistant broadleaf weeds, a weed control program including broadleaf herbicides may be required.

Aurora Gold's drought and shade performance make it ideal for many situations, along with a low-growing habit that requires minimal mowing.

For more information, contact 503-651-2130,

www.turf-seed.com or

CIRCLE NO. 204



▲ Spill pan

Rubbermaid Commercial Products introduces the Lobby Pro Wet/Dry Spill Pan. Designed for environments where inevitable spills are a liability risk, the spill pan offers quick cleanup that leaves the floor surface dry and safe, according to the company. The double-moss squeegee wand draws liquids or solid/liquid combinations into the 2-liter capacity spill pan for easy transport and disposal. The spill pan can also be used with a dustpan broom for spot cleaning.

For more information, contact 540-667-8700 or

CIRCLE NO. 205

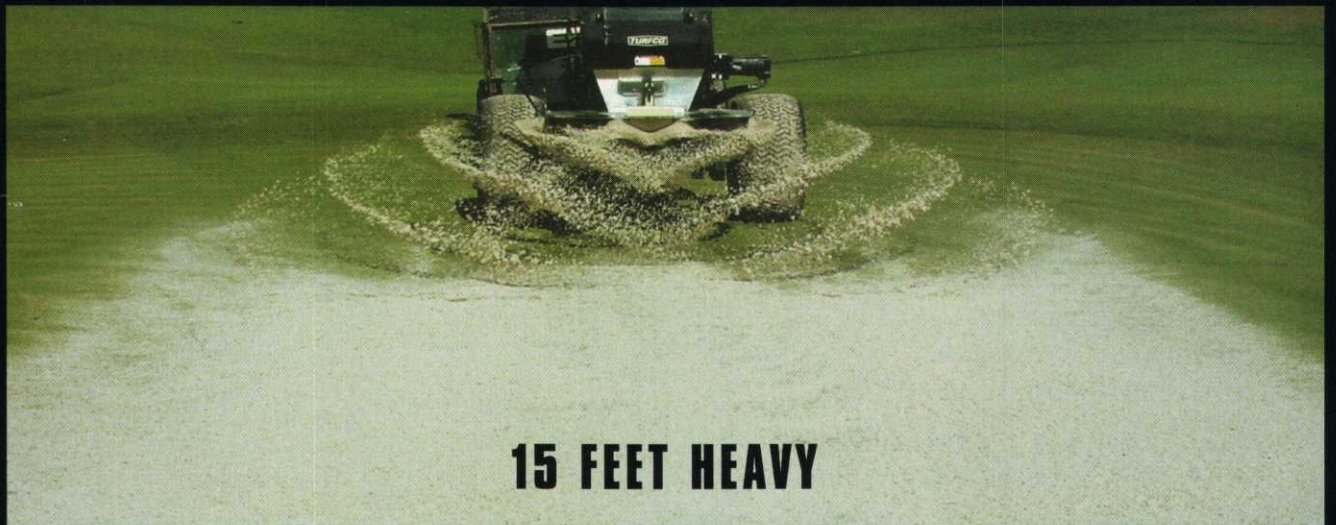
Turf blankets

Tyfar offers its turf blankets to help turf retain moisture and warmth to encourage early germination and green up, and protect turf from winterkill. Made of strong but lightweight nonwoven polypropylene fabric with ultraviolet inhibitors to help prevent breakdown from the sun's light, the blankets offer a number of benefits that can assist turfgrass recovery.

For information, contact 800-289-2448 or

CIRCLE NO. 206

INTRODUCING WIDESPIN™ 1530.



ONE MACHINE. A MULTITUDE OF APPLICATIONS.



The new WideSpin™ 1530 – finally a multi-functional top dresser that will master virtually any top dressing program you can dream up.

Do a conventional heavy spread up to 15 feet wide – 3 times wider than ever before. Or top dress as light as a walking fertilizer spreader, and cover all of your greens in just two hours. Reduce the number of tire tracks. Use a variety of materials. And work every part of your course. With just a few simple adjustments, the patent-pending WideSpin technology can switch from heavy to light top dressing in a matter of minutes. No attachments to change. No messy hydraulic connections.

The next generation of top dressing is here, and it comes with the industry's only 3-year warranty. Get the ultimate top dressing coverage plan. Arrange a demo of the WideSpin 1530 today – call 800-679-8201.



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www.turfco.com

The Company Line

Herbicide

TranXit GTA Herbicide, marketed by **Griffin LLC**, has received EPA approval for use on bermudagrass greens. TranXit offers a high level of control for *Poa annua* and other grass and broadleaf weeds, according to the company.

TranXit is also a good transition tool for the removal of perennial ryegrass in overseeded bermudagrass and other warm-season turf. When applying TranXit to bermudagrass greens prior to overseeding, a 2-ounce per-acre rate should be used. For *Poa annua* control on nonoverseeded bermudagrass greens, TranXit should be applied at 1-ounce per acre.

For more information, contact 800-737-3995, www.griffinllc.com
CIRCLE NO. 207

Points program

Syngenta Professional Products offers its GreenPartners program. Its customers earn points for their purchases of Heritage, Subdue MAXX, Primo MAXX and Barricade, which are redeemed for effective business tools. Customers can also donate points to industry

organizations, such as local superintendents associations.

For more information, contact 800-334-9481, ext. 6379, www.syngentaprofessionalproducts.com or
CIRCLE NO. 208

Sediment control

North American Green offers SedimentSTOP Biodegradable Filtration System, a sediment control product designed to significantly reduce soil loss caused by stormwater runoff.

The product is 100-percent biodegradable and traps soil particles while allowing runoff water to pass through. For more information, contact 812-867-6632, www.nagreen.com or
CIRCLE NO. 209

Perennial ryegrass

Seed Research of Oregon offers Hawkeye perennial ryegrass, one of the darkest perennial ryegrass available from the company. It's specially bred for its winter color and red thread resistance. It also has strong winter density when overseeded into dormant bermudagrass. Endophyte material is used in

Web sites



Aquatrols has a new Web site — www.aquatrols.com — which features information on the company's products, including research reports, MSDS and label information, a listing of Aquatrols distributors throughout the country. The site also features industry links to a number of professional and research resources for easy reference.



Growth Products has also relaunched its Web site — www.growthproducts.com. The new site provides users with up-to-date information about the company and its line of liquid products. The features specific product information and solutions pages.

Hawkeye to ensure insect resistance, the company says. For more information, contact 800-253-5766, sroseed.com or
CIRCLE NO. 210

Utility vehicle

The Toro Co. offers the Toro Workman 2110 utility vehicle, featuring hydraulic self-cleaning front disc and rear drum brakes. The enhanced braking system allows for increased braking ability and a towing capacity of 1,200 pounds when using a heavy-duty tow hitch. In addition, the Workman 2110 has a powerful 16 horsepower Briggs & Stratton Vanguard air-cooled gas engine. The mid-duty Workman 2110 offers a range of attachments such as a canopy, solid and folding windshield, portable refreshment center and bumper. For more information, contact 800-803-8676, www.toro.com or
CIRCLE NO. 211

Have an item for Company Line? Please contact Larry Aylward at 440-891-2770, lalward@advanstar.com or send release and color photo to 7500 Old Oak Blvd., Cleveland, Ohio, 44130.

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