

Overseeding Fairways, Tees And Greens To Control Poa Annua Problems

More and more golf courses are following the trend toward lower mowing heights and allowing more play. This trend, while bringing in more revenues, seems to be allowing more and more Poa Annua encroachment in our fairways, greens and tees.

With this encroachment, are you running into more modeling effects, disease susceptibility, less drought tolerance and more mid summer dye back?

If so, overseeding on a regular basis can be your salvation.

With current studies now showing that in five-year programs of overseeding, shoot density increased every year of the study. We have also found that it is desirable to use higher seeding rates with lower cutting heights. This is because lower cutting heights require more plants per square foot to maintain one hundred percent cover. The one pound of bluegrass seeding rate per one thousand square feet, listed in most text books, works well when grasses are mowed at three inches. Research now indicates that seeding rates should be doubled for every halving of the cutting height. For instance, while a one-pound overseeding rate might be acceptable for a three-inch cut, a two pound rate will be better for a one and one-half inch cut and a four-pound rate for a three-quarter inch mowing height. This provides the desired shoot density of the stand without the usual "Equilibration" period.

Also, effects of Kentucky Bluegrass, Ryegrass and Bentgrass seeding rates on encroachment of Annual Bluegrass is quite pro-

found. Using a low seeding rate or a weak cultivar will open the door for invasion of Annual Bluegrass. This invasion can occur simultaneously with emergence of blues, ryes and bents anytime within the first six months to a year after planting, due to a thin stand. Heavier seeding rates along with use of proper grass varieties and species in heavy Annual Bluegrass areas showed significant advances in reducing Annual Bluegrass problems.

Ideal seeding rates to control the previous problems are:

Kentucky Bluegrass: 2-3 lbs. per 1000 sq. ft.

Perennial Ryegrass: 4-8 lbs. per 1000 sq. ft.

Creeping Bentgrass: 1-2 lbs. per 1000 sq. ft.

High perennial seed counts in your soils can counteract Poa Annua problems of the future.

The days of midsummer turf loss can be over with annual overseeding programs integrated into your annual maintenance programs.

—Mark G. Grundman
NK Medalist

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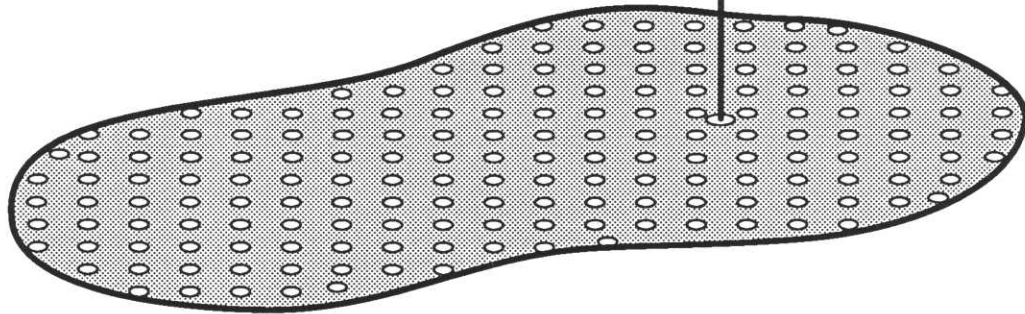
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Study Indicates Golf Course Maintenance Is Multi-Billion Dollar Business

Golf courses in the United States spent an estimated \$3.4 billion on golf course maintenance in 1991, according to a recent study released by the Center for Golf Course Management (CGCM).

CGCM is the research subsidiary of the Golf Course Superintendents Association of America (GCSAA).

The study looked at total annual maintenance expenditures, including labor but excluding capital expenses, at 1,164 golf courses. The number of courses involved in the study represents about 9 percent of the 12,846 golf courses reported in the 1991 edition of the National Golf Foundation's (NGF) *Golf Facilities in the United States* report.

GCSAA Past President Stephen G. Cadenelli, CGCS, said, "This study clearly illustrates that the golf course maintenance industry is a major industry in the United States and has a major impact on the nation's economy."

Cadenelli said the findings demonstrate that the golf course maintenance industry is "an industry of significant proportions"—one that spends an estimated \$3.4 billion annually in goods and services, employs thousands of people and continues to grow.

"This information is exceptionally important," he said, explaining that legislators and regulators seriously consider such data when dealing with laws affecting any industry.

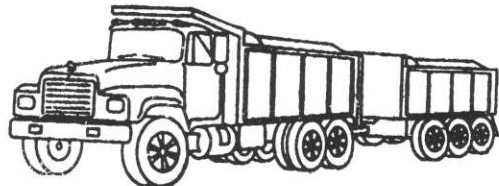
Based on the survey, the projected annual total maintenance expenditure estimates incurred by each facility classification group is: 9 holes, \$41 million; 18 holes, \$2.4 billion; 27 holes, \$251 million; 36 holes, \$207 million; and 45 or more holes, \$72 million. The estimated expenditures total more than \$3.4 billion.

For more information on research about the golf course industry, contact CGCM at 913/841-2240.

EPA Wants More Information On Pesticide Violations

Steve Johnson, director of field operations for EPA's Office of Pesticide Programs, has issued a plea for more information from state pesticide officials. Johnson says his office not only needs to know the number of violations and amount of fines, but also more specific information about the violations themselves—the types of violations and whether they were determined to be willful.

"We need this information to determine the direction and help fulfill the intent of our regulations," Johnson said. "The more we know, the better decisions federal regulators can make."



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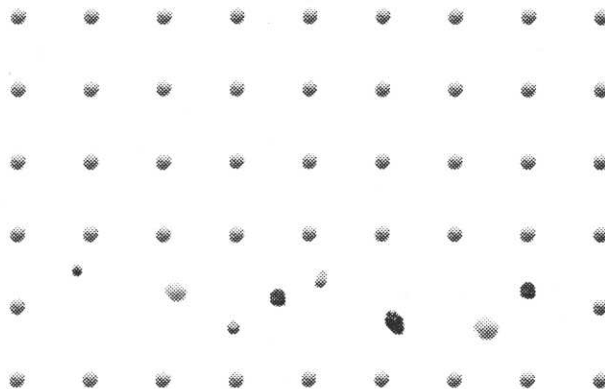
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Biostimulant/Growth Enhancer Technology In Plant Care Programs

Introduction

Biostimulants have assumed considerable importance in turf care and crop production practices in the United States. Field success and the increasing validation information confirm beyond reasonable question the viability of these products in this country, just as they have been viewed as critical in maximizing crop yields in other countries for many years. Along with genetically engineered improvements to plant species, biostimulants/enhancers now represent the only credible new technology for improving health, increasing yields and decreasing stress induced problems. As Dr. Ward of Auburn has stated, "There is a need for these products."

Certainly, as with all new technology, there has been a learning period—with some remarkable successes and some seeming "failures" over the past twenty years—in the application of biostimulants to improve plant performance. Fortunately, the past (and present) "failures" are identifiable as resulting from one or a combination of the following:

1. Ignorance or disregard of the needed balance and the inter-relatedness among the various hormone groups.
2. Inappropriate attention to other critical constituent (e.g., nutrient) requirements of plants.
3. Poor formulation chemistry, particularly in regard to stabilization of compounds.

A number of companies have made progress in dealing with

some of these basic problems, at least in regard to the second and third items, and in fact have product currently on the market which may be fairly said to give good results in many circumstances on some species. Nevertheless, as far as hormonal chemistry itself is concerned, most manufacturers have yet to achieve a balancing of inputs of *all* growth hormone groups, especially as it relates to different species and consistency of desired result. Perhaps Dr. Karnok of the University of Georgia identified this problem best when he doubted that any single hormonal material could have the same effect on "...all species growing under all conditions."

A Primer on Biostimulation & Growth Enhancement

There is now a substantial body of evidence that the addition of biostimulants to nutrient programs can significantly improve:

- Survivability & Vigor
- Root Depth & Mass
- Stress Resistance
- Nutrient Uptake
- Moisture Utilization
- Apical Quality
- Disease Resistance
- Insect Resistance

What is a Biostimulant?

It is a compound containing one or more plant hormones from the Auxin, Cytokinin and Gibberellic Acid groups which control the health, efficiency, and growth of plants.

(Continued on Page 15)

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Biostimulant —

(Continued from Page 14)

What does a Biostimulant do?

Under ideal conditions, a plant has adequate hormones to function efficiently. In the real world of plant management, conditions are never ideal, thus plants are always asked to perform at less than peak conditions. Biostimulant applications can replenish hormonal deficiencies and improve plant performance.

What results will Biostimulants give?

Generally a healthier, more efficient plant. The greater the stress, the greater the benefits—whether we are speaking of increased yields, more prolific roots or resistance to external agents.

What is a "Growth Enhancer"?

A compound containing both growth hormones and appropriate beneficial nutrients.

Are there differences in Biostimulant/Enhancer compounds?

Yes. Most compounds contain one or two hormone groups. While these sometimes *do* yield good results, often they lack consistency because they do not address all areas of hormonal deficiencies in the plant. They assume that one compound is appropriate for all types and all functionings of plants, and they often lack beneficial carrier constituents.

Plant Hormones

There are five types, or groups, of plant hormones. Two of these (Ethylene and Abscisic Acid) regulate or initiate decline activities including dormancy and death. The other three groups, primarily associated with growth enhancing activities, are:

Gibberellins (GA)

Produced and dominant in the new growth areas (particularly in seeds and apical portions), Gibberellins are key to cell division and elongation and are the "signal callers" or messengers of the plant. As apical growth occurs, GA travels downward (provided sufficient Auxins are present) and instructs the plant to:

- a) Produce more Cytokins for root proliferation.
- b) Translocate more Cytokins to the other areas of the plant to enhance the topical elements.

Auxins

Produced in the middle regions of the plant, Auxins contribute to root growth and formation and largely govern GA and Cytokinin movement to and from the extremities. They also play a major role in internode formation, which in turn significantly influences leaf quality.

Cytokinins

Manufactured in the roots, Cytokins profoundly affect root development and, with assists from GA, Auxins and sufficient nutrition, light, air and moisture, are integral to cell division and leaf and stem formation.

(Continued on Page 16)

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Biostimulant —

(Continued from Page 15)

From a practical standpoint, the upshot of these facts is that a thorough understanding of hormones and their interrelationships to each other and the other sustaining elements of plant health is essential to producing dependable responses. The absolute corollary is that different responses require different prescriptions. Thus, for example, hormonal compounds with advantageous attributes for seed germination and early establishment may be ineffective or even damaging if applied to the same plant during a more mature state of the life cycle.

MEMBERSHIP REPORT

MAY 13, 1992
BRAEMAR GOLF CLUB

NEW MEMBERS—MAY 11, 1992

Gary Korum	Phalen Golf Course	Class	BII
Ladd Oser	Lakeview Golf		BII
Nathan Gould	MTI Distributing		F
Steve Zeece	L-Z Company Inc.		F

RECLASSIFICATIONS—MAY 11, 1992

Mark Severson	Rum River Hills Golf Club	BII to A
Paul Tinklenberg	Ortonville Golf Course	BII to A

Mike Olson, Membership Chairman

Personnel Management Guidelines Offered In GCSAA Handbook

A sample handbook for setting policy, writing job descriptions, developing pay scales and handling other golf course personnel management issues is now available from Golf Course Superintendent Association of America (GCSAA).

The handbook, available to both members and non-members, was developed to assist golf course superintendents in developing their own personnel manuals, tailored to their clubs' existing personnel policies.

Topics covered include employment status, work schedules and pay, attendance, employee conduct, performance reviews, standards of conduct, employee benefits, guidelines, employment laws and job descriptions.

Sample general duties and job requirements are listed for the assistant superintendent, equipment mechanic and his assistant, foreman, equipment operator, irrigation specialist, chemical technician, gardner-triplex operator, landscape gardner and groundskeeper in the "job descriptions" section of the manual.

The model handbook is priced at \$10 for GCSAA members and \$15 for non-members, and is available through the GCSAA membership department, 913/832-4480.

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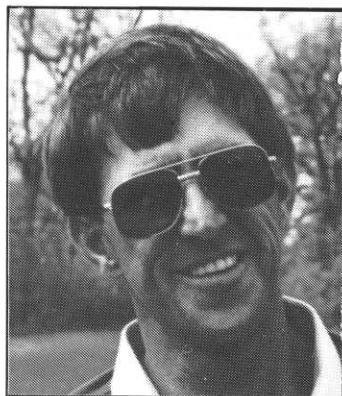
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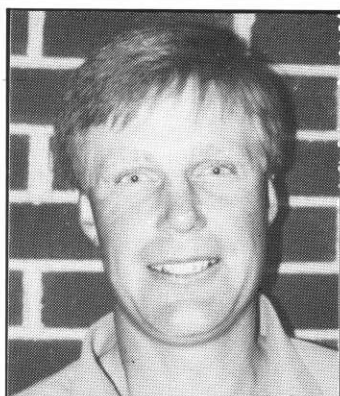
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Why Do You Attend MGCSA Monthly Meetings?



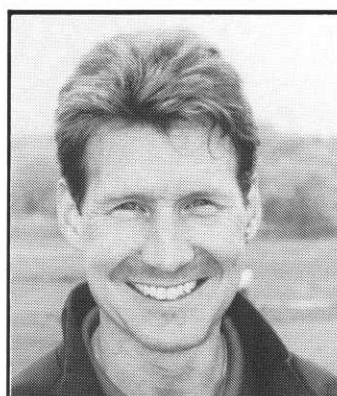
MARK POPPITZ
Island View G.C.

"I enjoy seeing other courses with hopes of picking up different maintenance ideas, and also to see other superintendents to pick up any ideas or information through the informal conversations."



KEVIN CLUNIS
Stillwater C.C.

"The monthly meetings are a time to get away from your problems and take a look at somebody else's. Not really! It is a time to get to know other members of our association in an informal manner."



TIM COMMERS
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"When Dale Wysocki asked me 'Why do you attend MGCSA monthly meetings?' I thought maybe he was trying to tell me something, like if I didn't come up with a good reason, he wouldn't let me come anymore, and who's going to argue with Dale. But,

after thinking about it for a little while, I realized the reasons to attend meetings are pretty simple. Having worked here at Cushman since 1972 and being an MGCSA member since 1980, I have gotten to know a lot of people. There is just something good about seeing familiar faces and I think that's what is best about coming to meetings. Remembering when I first started to attend meetings and feeling maybe a little out of place, guys like Tony Magina, Doug Dieter and others would take the time to chat with me and make me feel right at home. It's good to be a familiar face, too. Also, when attending meetings, the fact that I may learn something and have chance to share something as in talking some business and the opportunity to play golf on some of the nicest courses around doesn't hurt either.

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John Nylund Hosts A Great Meeting At Braemar

Host Superintendent John Nylund came through again, providing the MGCSA with another stellar golf facility. For the 115+ members who attended the May meeting, it was a treat to play one of Minnesota's finest municipal golf courses.

The weather looked threatening at times, with a forecast of possible thunderstorms during the day. Fortunately the rain held off till everyone had finished their round of golf. Some fine scores were turned in and the gentlemen who took home the gold were: John Wiley, longest putt; John Katterheinrich, closest to the hole; Tim Neary, closest to the hole, and Cary "Boom-Boom" Femrite with the longest drive.

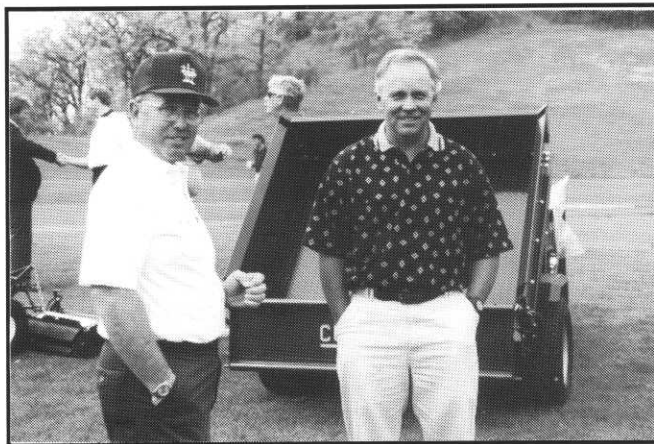
NEXT MEETING JUNE 8



Checking in at Registration.



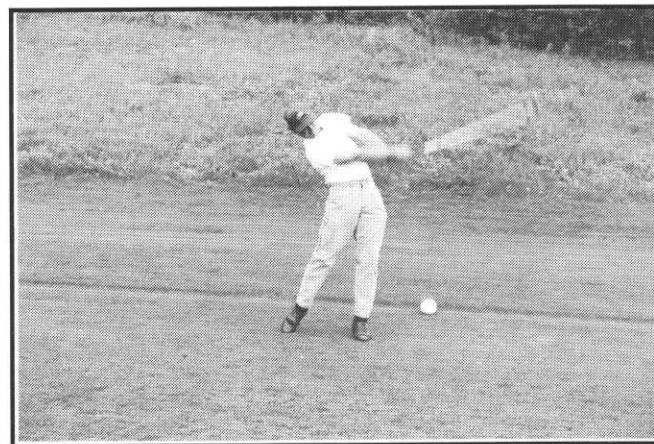
Great lunch put on by Braemar G.C.



Host Superintendent John Nylund (right) with Dick Grundstrom.



Steve Garske pitching out of trouble.



Michael Brower of Minikahda.



Cushman Motor Co. and E.S. Dygert Co. displayed some of their equipment.

GCSAA Scholarship And Research Foundation Receives Major Gift

An exclusive new rebate program offered by Lebanon Turf Products will bring at least \$20,000 in donations to GCSAA Scholarship & Research, the Golf Course Superintendents Association of America's (GCSAA) non-profit foundation.

According to William R. Roberts, CGCS, president of the S&R board of trustees, Lebanon has agreed to donate 50 cents for each bag of its new Country Club 18-3-18 fairway fertilizer sold between April 6, 1992 and December 31, 1993 to GCSAA S&R. Lebanon's professional group has committed a minimum of \$20,000 in donations to the 20-month program.

"We couldn't be more pleased that Lebanon approached us with this idea," said Roberts, who is also president of GCSAA. "It's a creative and generous way for a corporation to help us fund some important work." Roberts added that the unrestricted gift will be targeted for use in a planned groundwater monitoring program.

Paul Grosh, Lebanon's professional group sales manager, said that the program was inspired by the development of the new fertilizer.

"Superintendents were requesting this nutrient ratio and our goal was to create another fertilizer that was environmentally compatible with use on fairways," Grosh said. "The idea of helping to fund independent groundwater research through sales of the product just seemed natural."

Grosh urged superintendents with questions about the program or about the 18-13-18 fertilizer to contact the Lebanon representatives in their area, or their local Country Club distributor.

Lebanon becomes the newest member of the GCSAA S&R Platinum Tee Club. The club is made up of corporations, golf clubs, GCSAA-affiliated chapters and individuals, all who contribute \$5,000 or more annually. The corporation, which is based in Lebanon, Pa., supplies fertilizers and a variety of other plant protectants for golf courses, lawn care professionals, agricultural and home uses.

Paul Mingle, Lebanon's manager of sales and marketing, said "Golf is an integral part of our business. We're extremely proud to be able to give something back to the professionals who use our products."

GCSAA Scholarship & Research is a 36-year-old foundation dedicated to providing educational and scientific advancements for the golf course industry.



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Keith Faber

LYME DISEASE: IT CAN HAPPEN TO YOU

Lyme disease, because of its ability to mimic a wide variety of other illnesses, has been dubbed the "great imitator." And few people know that better than Superintendent Dave Pijnenburg (Redding Country Club in Redding, Conn.), whose symptoms were misdiagnosed until the disease had reached its more debilitating, later stages.

What follows is an account of his ordeal with the disease—a story he hopes will spare others from serious complications that can arise when the Lyme disease bacterium—Borrelia burgdorferi—isn't treated promptly. By the way, Dave never spotted the offending tick or the telltale rash that frequently warns people they've been infected.

* * * *

Last July, while I was preparing the golf course for our annual member-guest tournament, I started feeling exhausted in the afternoons. At first, I shrugged it off, figuring it was because I'd been putting in a lot of long hours.

Wrong. Two weeks after the tournament passed, I felt even weaker. I'd go home around 11 a.m. and take a two-hour nap, just so I could make it through the day. I went to the hospital; they ran all kinds of tests but couldn't come up with anything. Their diagnosis: Prob-

able virus. Their prescription: Get plenty of rest.

The next week, I began having constant headaches and dizzy spells. I almost passed out at the wheel one afternoon. I went back to the hospital. This time they took spinal fluid to check for meningitis or Lyme disease. Once again, their test came back negative. They gave me aspirin for my headache and told me to take it easy for a while.

By the beginning of September, I felt extremely weak. Then, just after Labor Day, I woke up and the left side of my face was numb. I returned to the hospital, and after another spinal tap, I was diagnosed as having Lyme disease.

Because the disease was now in a later stage, I was admitted to the hospital and put on intravenous antibiotics. The next day, the right side of my face and body was paralyzed. I couldn't move my lips or blink my eyes.

After four days, I was released from the hospital and given a new antibiotic - Ceftriaxone - to take once a day for 14 days. My health slowly improved, and by the end of October, I had regained full control of my facial muscles.

I've been in good health since, but I do have to go back to the hospital every three months to be sure I haven't had

a relapse - one of the hazards of having contracted Lyme disease.

After all this, I can't emphasize enough that prevention is the best medicine for Lyme disease. Educate your employees. Now's a good time to start. Because we had a mild winter, ticks are bound to be more plentiful and active this year. With that in mind, here are some tips that will help you and your crew guard against this serious health threat.

If you're going to be working around wooded or tall-grass areas on the course:

- **Wear light-colored clothing** so ticks will be more visible.
- **Tuck your pant legs into your socks or boots** and your shirt into your pants.
- **Tape the area where your pants and socks meet** to keep ticks from crawling under your clothing.
- **Spray your pants, socks and shoes with an insect repellent.**

Those containing DEET (diethyltoluamide) will repel ticks for hours. Permanone is a new insecticide that kills ticks on contact. Unlike DEET, Permanone cannot be applied to skin, and it's not approved in all states. Check your body and clothes for ticks throughout the day.

—*Tee to Green, May 1991*

GCSAA to Sponsor Asian Golf Course Conference, Show

The Golf Course Superintendents Association of America (GCSAA) has announced that it will sponsor the Pacific Rim Golf Course Conference and Show in Singapore on March 15-21, 1993.

Meeting the educational needs of Pacific Rim golf course management professionals and offering manufacturers and suppliers a cost-effective way to sell their products internationally is the force behind GCSAA's new event, said GCSAA President William R. Roberts, CGCS.

"The booming golf market in this area of the world presents an excellent opportunity for GCSAA. It is our intention—as it has been with our domestic activities—to produce a first-class conference and show with the highest quality level of education possible, and to make the event professionally rewarding for all," he said.

The association already sponsors the largest annual trade show in the industry—the International Golf Course Conference and Show—scheduled for Jan. 23-30, 1993, in Anaheim, Calif.

The Pacific Rim event will be structured and operated identically to GCSAA's U.S. conference. A full program of educational sessions, seminars, a distributor program and trade show—all

planned with multiple-language interpreting—will be offered to exhibitors and attendees.

International representatives from Toro, Jacobsen, Ransomes/Cushman, John Deere, Rain Bird, Robert Trent Jones II and Club Car have already committed to participate in the Pacific Rim event.

Exhibitor information will be mailed to industry representatives in July. Attendee information will be sent in August.

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