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# The Florida Green

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## ABOUT OUR COVER

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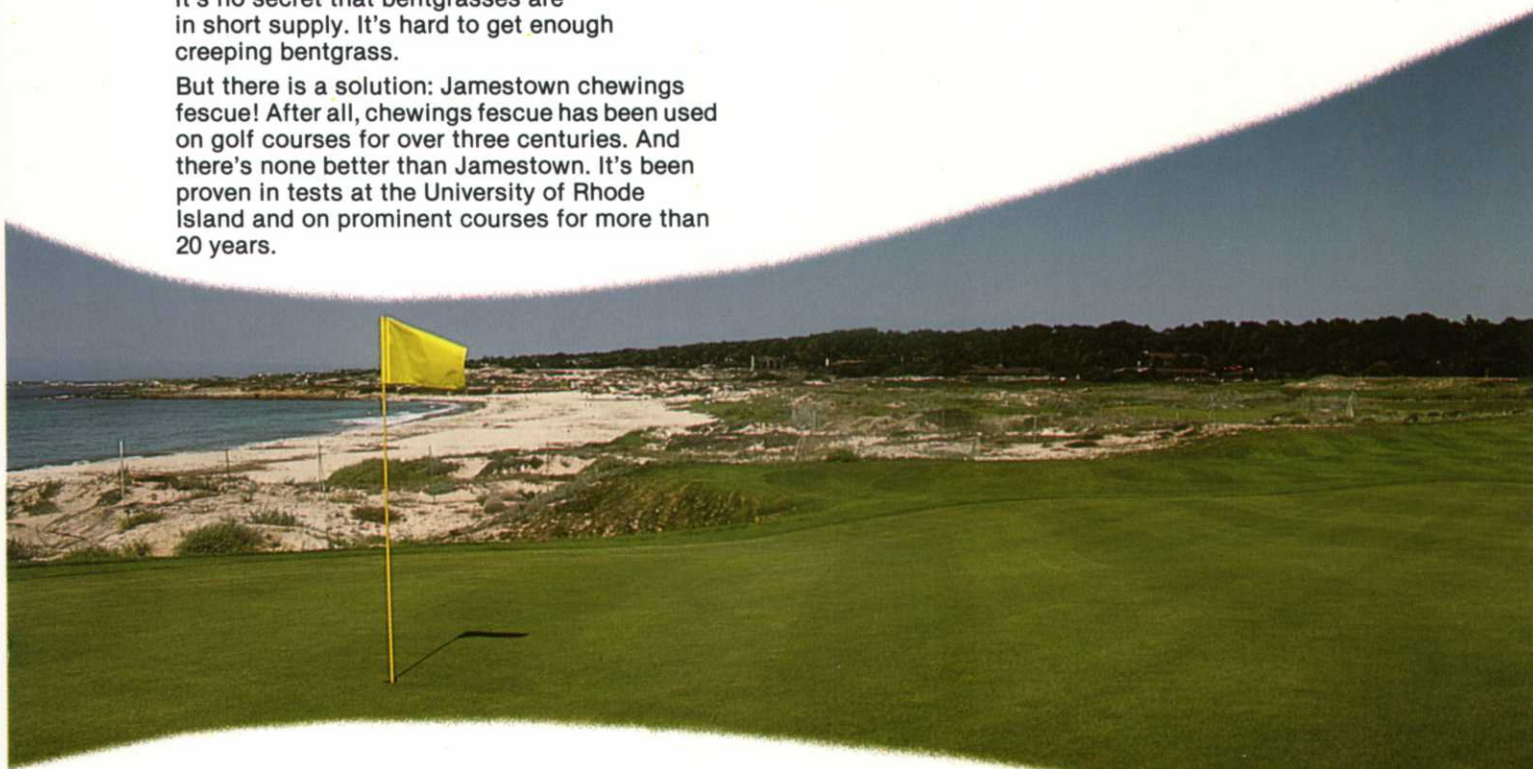
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# President's Message



## Bentgrass — Friend or Foe?

Past President Reed LeFebvre's message states it very accurately, "Bentgrass, next to the lottery, is the biggest gamble in Florida."

The problem experienced at The PGA Tournament and The USGA Amateur Tournament during the months of August and September indicate the fact that serious problems can quickly appear with Bentgrass greens when weather conditions and Mother Nature fail to cooperate.

There have been numerous problems throughout the Southeast with Bentgrass greens this past year and there will probably be more in the future, as we attempt to grow a Northern Bentgrass in the South, throughout the year.

Speaking as a Superintendent, I know that most Superintendents strive for perfection in their job of providing first class playing conditions for their members; and especially for USGA and PGA Tournaments. I am sure that Superintendents everywhere shared the gut-wrenched feeling of frustration that those Superintendents in charge of those tournaments experienced.

Congratulations and respect for those individuals who in spite of adversity carry on the job and see the fight through, keeping their cool and accomplishing their objective. Possibly it is because of working with nature that keeps most Superintendents "real and humble" people. Superintendents know from experience that even the best planned programs can be changed or completely destroyed at the whims of nature.

On October 8, 1987, The Florida Golf Course Superintendents Association sponsored a seminar on Bentgrass at the J.D.M. Golf Club. Tom Burrows and Marie Roberts are to be congratulated on the efficient, very successful planning of this major event, which attracted a large turnout of Golf Course Superintendents and Club Officials.

The speakers, all experts from throughout the US and Florida provided factual information as it relates to turf management for all turf, but more specifically growing Bentgrass in Florida.

I think everyone associated with turf management knows, or should know at this time, that excellent turf conditions do not just happen. Good clubs, in the north, as well as in the south, have a history of consistency in sound cultural management practices and have practiced them over a period of years.

I wonder if some people think that just planting Bentgrass is a "silver bullet" type approach to solving a problem which often relates to poor initial construction, improper soil conditions, drainage problems, etc.

Let us get "real" when we demand playing conditions like the course we played the other day (the one that was properly planned and constructed).

Let us think about proven, factual information that is available to everyone involved in the turf and golf business. The USGA Green Section, Federal and State Extension Services, agronomists, pathologists, soil scientists, plant breeders, entomologists, all offer to us factual information. Yes, we do still have a lot to learn about the causes of soil conditions and plant diseases; but we must listen to the experts and examine the facts before we make decisions about our turf programs.

This issue of The Florida Green is devoted to the bentgrass controversy that has developed in our state. Club officials will find this issue packed with factual, scientific information from the experts, on Bentgrass greens, as well as Bermuda greens and overseeding.

*(cont. on page 14)*



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# Letters to the Editor

Dear Dan:

First, congratulations on running away with all of the "Oscars" of our profession.

Receiving these awards does not mean you should now relax. It means you must go forward at a much faster pace. Go, Go, Go! (perhaps beginning as a GCSAA Director??). Irene can handle the *Florida Green* — Go for it!

The enclosed packet contains the Bentgrass survey summary, the seminar summary, thoughts on Bentgrass — Part II, Dr. Dudeck's letter, and Larry Kieffer's column from *Florida Golfweek*. We would enjoy hearing your comments and suggestions on Bentgrass — Part II. Note that the seminar summary will appear in the January issue of the *Florida Green*.

Thanks to you and Irene for being there. Sorry we took so long getting the article to you for the *Florida Green*. Marie said she will be faster the next time (somebody has to take the blame!).

Best regards,  
Tom Burrows  
Director of Education

Dan,

I have been a golf course superintendent in Florida for many years and as such have enjoyed very much the *Florida Green* magazine. The articles are both informative and helpful.

In January this year, I took the position as superintendent for the Emirates Golf Club which is located in the United Arab Emirates (on the Arabian Continent). Growing conditions in the region are similar to those in Florida. Bermuda grasses are used on the golf course which was designed by Karl Litten.

It is my intention to keep informed with the developments in the South Florida area; hence, I would like to get information on how to again receive the *Florida Green*. Details can be mailed to either address shown below:

Kerry Son  
Karl Litten Overseas (Ltd.)  
P.O. Box 12188  
Dubai, United Arab Emirates

Dear Dan:

As I usually do when "The Florida Green" comes, I promptly zipped through the Summer 1987 issue to see what was on the minds of my best clientele, and found most of the issue to be as informative as ever. However, I was dismayed when I found my old "Turf Nematode Control Update" article reprinted nearly 3 years after it was current. If that was a signal that I have not sent you anything for a long time, I got the message, and enclose a new article that you may want to use to correct some of the info in the one printed in the Summer issue. It will be distributed to County Agents in August, so you may also see it in other publications.

As Reed noted in his President's Message, there have been many changes in the chemicals that we have available to manage turf, and the article on p. 55-56 is a perfect illustration of that point. As you can see by comparing the enclosed manuscript with the printed article, three of the six products listed in 1984 are no longer available for turf, one product can be added, and there are some changes in details of use of one of the remaining three: Nematicur 15G, Dasanit 15G, and Mocap E.C. are no longer legal for use on turf; Nematicur 3 has been added for fairway treatment; rates and home lawn use restrictions for Mocap 10G have changed a bit. It is conceivable that the implementation of Endangered Species labelling may effectively eliminate most nematicides from most courses during the next 2-3 years, so this will continue to be a hot and unstable topic for the golf course industry.

I'll try to write you more often if you'll promise not to run any pesticide recommendation articles that are over 18 months (maximum) old.

Sincerely,  
ROBERT A. DUNN  
Extension Nematologist

Dear Mr. Jones:

I have just been given a copy of the Summer Issue of *FLORIDA GREEN* and, being the individual pictured on the cover, I wondered if it would be at all possible to obtain the original of this picture.

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# BENTGRASS 101

By Cheryl Jones

How many of you know that the old expression, “growing like a weed,” originally was, “growing like bentgrass?” Not really, but it may well have been what the originator had in mind.

“Bentgrass: Wonderful Winner or Wicked Weed?” is an often debated topic among superintendents, golfers, agronomists, and all others interested in this unusual member of the GRAMINEAE family.

Bentgrass is a cool-season, perennial grass that is spread by stolens. It forms puffy, dense patches that may eventually dominate a lawn turf. Under close mowing and meticulous care, however, it can form an excellent lawn or sports turf; otherwise, it is usually regarded as a serious weed.\*

It is very important to buy only certified seed, because with 7,890,000 seeds per pound of creeping bentgrass, you can imagine what one ounce of bad seed could do to a golf course green! Beware of the bentgrass seed pirates selling uncertified seed with as much as 10 percent of the mixture as weed seeds!

This genus includes approximately 125 species that grow in temperate and subarctic regions, and at high altitudes in tropical and sub-tropical areas. The common name of bentgrass is used for all the species in the genus except redtop. It's a fine-textured, dense, high-quality turf when it is closely mowed, therefore one of the most tolerant cool-season turfgrasses. Some species are annual, but all those used in the turfgrass industry are perennials. Within a turfgrass species, the density varies greatly, depending on genotypic and cultural factors and natural environment. You can get high density with bentgrass when it is closely mowed, fertilized and watered frequently, and kept free of pests and disease. Bentgrasses are subject to a large number of diseases, including Pythium Blight, Fusarium patch, Typhula blight, dollar spot, brown patch, red thread, stripe smut, spring dead spot, and others.

Let's look at the three major “turf” bentgrasses (and redtop). They include creeping bentgrass, colonial bentgrass and velvet bentgrass.

*Creeping Bentgrass* is a native of Eurasia but has crept throughout the world. It gets its name from its growth pattern — creeping stolens at the surface of the ground, initiating new roots and shoots from the nodes. Creeping bentgrass can spread quite rapidly and forms dense, fibrous root systems. It's the most widely-used cool season grass for golf and bowling greens. While it tolerates many types of soils, fertile, fine-textured soil of moderate acidity and a good water holding capacity is best.

Early in the 1900s, greens were planted with mixtures which contained small amounts of creeping bentgrass. The U.S. Golf Association and the U.S. Department of Agriculture worked together in the 1920s and '30s in an effort to develop many different creeping bentgrass cultivars.

Vegetatively propagated cultivars include *Culhansey*, released by the U.S., selected in 1935; *Washington*, released by the U.S.G.A. Green Section and CRD-ARS, U.S., selected in 1919; *Toronto*, released by the U.S., selected in 1936; *Penpar*, released by Pennsylvania AES, U.S., in 1967; and *Northland*, released by J.R. Watson, Toro Mfg., Minnesota, U.S., in 1955. Seeded cultivars include *Penncross* (Pennsylvania AES, U.S., 1954), *Seaside* (Lyman Carrier, Ore., U.S., 1923), *Emerald*, *Penn-eagle*, and *Prominent*.

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## DOES BENTGRASS BELONG IN THE SUNSHINE STATE? SOME MENTION IT IN THE SAME BREATH AS MIGRAINE HEADACHES.

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All vegetatively propagated cultivars of creeping bentgrass have been developed in the United States. Turfgrass establishment rates for stolens and seed are about the same, but vegetatively propagated cultivars are usually more uniform in appearance. In Florida, the seeded bentgrass is primarily used on greens, but may see use on closely mowed tees, fairways, and exotic lawns.

*Colonial Bentgrass* is a native of Europe, but has been introduced in the Pacific Northwest and New England regions of North America, and in New Zealand. It is a grass best adapted in temperate-oceanic climates. A fine-textured, bunch-type-to-weakly-creeping grass, colonial has a poor tolerance to heat and is used mainly in cool, humid regions.

Colonial bentgrass is propagated mainly by seed. Cultivars include *Astoria*, released by Oregon AES in 1936; *Exeter*, released by Rhode Island AES in 1963, and *Highland*, released by Oregon AES in 1934. Breeding efforts in Europe include the release of *Boral* by Weibullsholm Plant Breeding Institution of Sweden in 1936, and *Holfior*, by D.J. van der Have of the Netherlands in 1940.

*Velvet Bentgrass* is a native of Europe that has become naturalized in New England and is restricted to use in very mild, temperate oceanic climates. It is said to be the most beautiful of all turfgrasses. Velvet bentgrass can be

(cont. on page 14)



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(cont. from page 12)

either vegetatively or seed propagated, but few cultivars have been developed. Currently available is *Kingstown*, released by Rhode Island AES in 1963.

*Redtop* is a native of Europe that was used mostly before 1945 in quality turfs. It is a coarse-textured species whose name came from the color of the seed head, and is propagated almost entirely by seed. *Redtop* is used mostly in cool humid climates as it does not withstand high temperatures. It was used in cool-season turfgrass seed mixtures in the past to promote rapid development of cover, but studies have shown that it does no better than improved ryegrasses and fescues, and its use has declined rapidly. Its unsightly appearance and stubborn tenacity has made it more unpopular as a nursegrass, but it's fine for roadsides and drainage areas, and waterways for erosion prevention. It will grow in poorly drained, unfertile areas. Due to its limited use, few cultivars have been developed, and none are available.

Does Bentgrass Belong in the Sunshine State? Some mention it in the same breath as migraine headaches; others claim its 'true putting' properties can't be beat. It is not a native of Florida and must be carefully pampered to coax it to adapt (much like this cool-season writer), yet we see it used on major tournament courses here. ARE THE GRASS BREEDERS LISTENING? ■

\**Turfgrass Management*, A.J. Turgeon, Reston Publishing Company, Inc., Reston, VA. 1980

(cont. from page 8)

Sources: *Turfgrass: Science and Culture*, James B. Beard, Prentice-Hall, Inc. 1973; *Turfgrass Management*, A.J. Turgeon, Reston Publishing Company, Inc., Reston, VA. 1980; *Turf Management for Golf Courses*, James B. Beard, Burgess Publishing Co., Minneapolis, MN. 1982.

#### PRESIDENT'S MESSAGE (cont. from page 8)

Be sure to read Mike Bailey's article as it relates to the amount of time some of the above mentioned procedures inconvenience the golfer.

Hopefully a "Phase II" Bentgrass Seminar will take place early next year and that a lot of interested club officials will be in attendance.

A special THANK YOU to all the members who answered their surveys, participated in the program and shared their time and talents to make this Bentgrass Seminar a success.

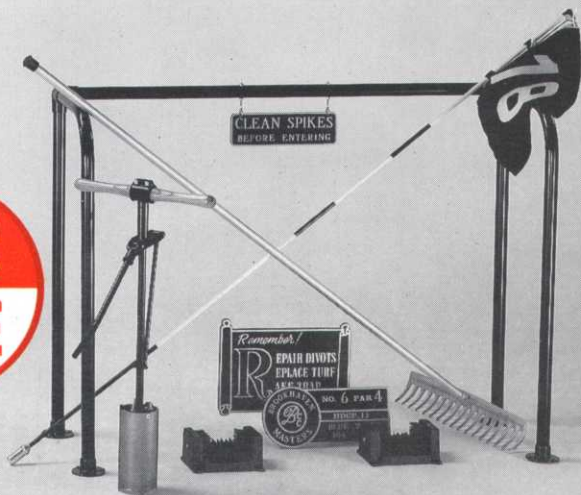
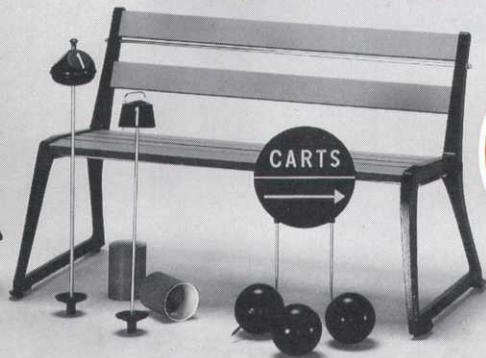
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*Dick Blake*

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## CAN YOU BUILD A SNOWMAN IN SOUTH FLORIDA?

# What About Bentgrass Greens in Bermudagrass Territory?

By Irene Jones

Yes, of course you can build a snowman in Florida. It would require the expense of a special work area, such as a large walk-in freezer, some dedicated, hard working individuals and some man made snow.

But would "Frosty" thrive if we placed him out on a South Florida green? A whole lot of Golf Course Superintendents in South Florida view the management of pure bentgrass greens on their courses in much the same way.

According to A.E. Dudeck, Professor, Turfgrass Science at The University of Florida, "Florida is bermudagrass territory. Most turfgrass specialists who have been well schooled in the climatic zones of turfgrass adaptation know that bentgrass, as a cool season turfgrass, is adapted to the cool, humid regions of the world — not to Florida."

I attended a day-long seminar on the use of bentgrass greens in Florida, at JDM Country Club, located in Palm Beach Gardens on October 8, 1987. The moderator for all topics of this seminar was Max Brown, Ph.D., a leading turf expert and consultant in the south east. Panelists were made up of eight well respected golf course superintendents; while the eleven turf specialists on the program looked like a "who's who" list of turf experts from across the U.S. Seminar Co-ordinator was Tom Burrows, Director of Education, Florida Golf Course Superintendents Association, Turtle Creek Club, Tequesta. And helping to bring it all about was Marie Roberts, Secretary, FGCSA.

The importance and the interest associated with bentgrass use in Florida was very much in evidence by the packed meeting room, with 107 persons, mostly superintendents in attendance.

Joe Duich, Ph.D., Pennsylvania State University, commented that bentgrass problems carry over on Saturday and Sunday. "One or two men can not grow bent, it will take a team. No irrigation system has been proven to water bent. It has to be hand-watered." Because I am the wife of a golf course superintendent, statements such as this bring to mind visions of golf course superintendents all tucked into their beds, right beside their bentgrass greens. Seriously though, it is hard enough to work with a factor as powerful and changeable as Mother Nature, without bringing into a region a type of turfgrass that she does not naturally put Her blessings on.

Robert Dunn, Ph.D., University of Florida, spoke about the physiological aspect of nematodes on bentgrass. "Sting nematodes attack bentgrass, their population accelerates as the temperature goes up." So this tells us that if nematodes are a problem on a course, bentgrass is not a good choice. At this point I could just imagine the entire nematode population in South Florida licking their chops as they discussed which course they were going to dine at tonight.

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**I DO NOT THINK WE HAVE A NEED FOR BENTGRASS IN SOUTH FLORIDA WHERE BERMUDAGRASS DOES SO WELL, AT REASONABLE COST.**

**Carl McKinney, J.D.M. CC**

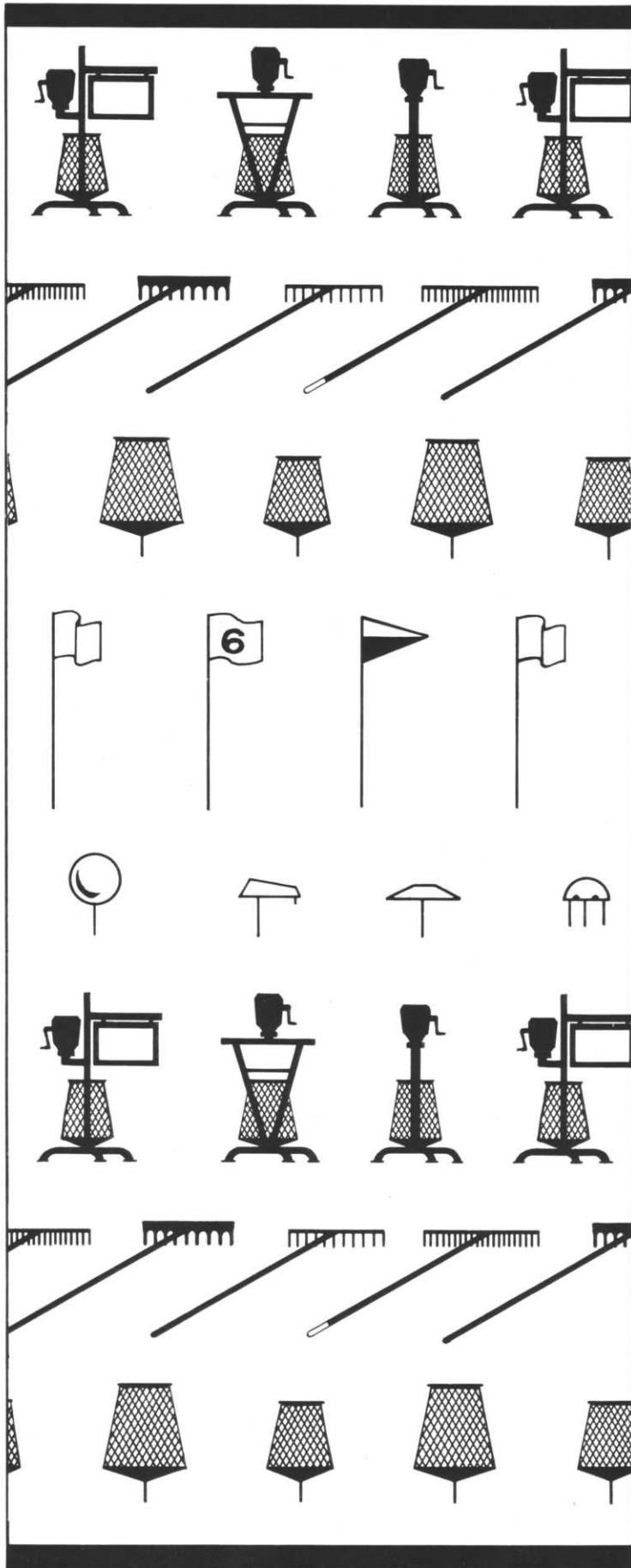
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Disease problems are severe on bentgrass according to Joe Vargas, Jr., Ph.D., Michigan State University. "Root rot organisms require four times the amount of chemicals needed to treat foliar organisms. The root knot nematode is a big fan of bentgrass." Just think about what this could do to your annual budget in the area of dollars spent on chemicals?

"The well drained rootzones which are required for bentgrass will bring about increased leaching of nutrients and pesticides into Florida's shallow ground water table. Increased water needs for frequent syringing place greater demands on an already limited water supply. **ALTHOUGH MONEY MAY BE NO OBJECT ON MANY OF FLORIDA'S GOLF COURSES**, the increased use of fungicides for disease control on bentgrass greens should be reason alone for abandoning such a practice." Directly quoted in a letter to the Florida Golf Course Superintendents Association from A.E. Dudeck, Professor, Turfgrass Science at The University of Florida.

Again speaking as the wife of a golf course superintendent, I can not even in my wildest dream, imagine my husband (or any other experienced, well respected golf course superintendent) handing their budget committee chairman, or their greens committee chairman, a budget which increased at least four times the amount of last year's budget, in the areas of chemicals, fertilizer and labor costs. It has been reported that the use of fungi-

(cont. on page 18)



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(cont. from page 16)

cides are being used every 3-5 days on courses with bent; in addition to the cost, this practice will cause immune diseases in the plant.

The golf course superintendent/manager has a responsibility to maintain his course at the highest standard possible within his budget. He also has the responsibility to keep his club officials informed and knowledgeable when it comes to unreasonable expenses. To help ensure that the very best standards for a golf course be examined, it may be a good decision to have a turfgrass expert attend a Board Meeting. This would allow members to question and examine the issue first hand.

And in the case of pure bentgrass greens, can clubs afford to burden their golf course superintendent/managers with growing and maintaining a cool season turfgrass that Mother Nature herself is generally opposed to in South Florida? Remember that we can not change the weather, no matter how hard we try, or how much we are willing to pay.

Will environmental groups and Florida's water management districts have anything to say about the increased pesticide use which the experts and the experienced superintendents tell us must happen when this cool season turfgrass is grown in the warm, moist region of South Florida? How about the increased leaching of nutrients and pesticides into Florida's shallow ground water table? And how about increased water needs for the frequent syringing which bent requires in our area? Since you already know the answers to these questions I do not have to say anymore.

---

## **I DO NOT THINK MONEY CAN BUY YEAR ROUND, CONSISTENT BENT GREENS.**

**George Cavanaugh,  
Bear Lakes C.C.**

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THE SECOND PART OF THIS ARTICLE CONTAINS A LOT OF KNOWLEDGE FROM THE REAL EXPERTS WHO ARE ON THE FRONT-LINE OF THIS CONTROVERSIAL ISSUE — THE GOLF COURSE SUPERINTENDENT/MANAGER:

*The Florida Green* asked the following six questions to a field of 15 Florida Golf Course Supers. Here are the questions, a breakdown on the responses, along with direct quotes from our experts.

**QUESTION:** Is your club being affected by the current bentgrass controversy?

**ANSWER:** *James Branstrom, CGCS, Palm Beach Polo & Country Club.* "Yes, we hold bent throughout the year because the owners want it."

**ANSWER:** *Tom Werner, The Loxahatchee Club.* "We have had 100% bentgrass greens since 1984. Most likely we are part of the reason the controversy continues."

(cont. on page 20)

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(cont. from page 18)

**BREAKDOWN:** YES - 7; NO - 8

**QUESTION:** What are your thoughts on bentgrass in Florida, as an annual or perennial?

**ANSWER:** *Bill Whitaker, CGCS, Seminole Golf Club.* "Bentgrass is a superior playing surface, when properly managed. Tifdwarf will out-perform any bent available today."

**ANSWER:** *Richard C. Blake, CGCS, President, FGCSA, Bokaire Country Club.* "As an annual only if you have well drained greens, good irrigation system, walk greens mowers, an adequate budget, can control the traffic on greens, can close the course to play when flooded, etc. . . ."

**BREAKDOWN:** Annual only - 12; Would not even consider it - 1; Would consider only Tifdwarf - 1; Perennial - 1

**QUESTION:** Do you agree with having pure bentgrass greens in Florida; such as The Loxahatchee Club?

**ANSWER:** *Mark Jarrell, Palm Beach National Golf & Country Club.* "I would not want to be the superintendent at a course with pure bentgrass greens. However, I do enjoy playing bentgrass when I visit a course that has it."

**ANSWER:** *Jim Watkins, Frenchman's Creek Golf Club.* "No!! The physiological requirements of bentgrass are not supplied by Mother Nature in South Florida during our summer months. I believe "EGO" has created the pure bentgrass attempts over common sense!!"

**ANSWER:** *Kevin Downing, CGCS, Mariner Sands Country Club.* "Yes, if:  
A. Willing to pay price/well paid assistants  
B. Limit play  
C. Be prepared to put in Tifdwarf at later date"

**BREAKDOWN:** NO - 9; YES - 2; Only if certain conditions are met - 4

**QUESTION:** Do you feel that Florida clubs can afford the maintenance expense of permanent bentgrass greens?

**ANSWER:** *Mark Hampton, Golf Course Manager, Wyndemere Country Club.* Before a decision is reached on justifying the cost of maintaining permanent bentgrass greens, a full understanding of the subject by the decision-makers is imperative. In recent cases, the decision has been based on someone's wants, not sound agronomic/financial principles. In the  
(cont. on page 22)



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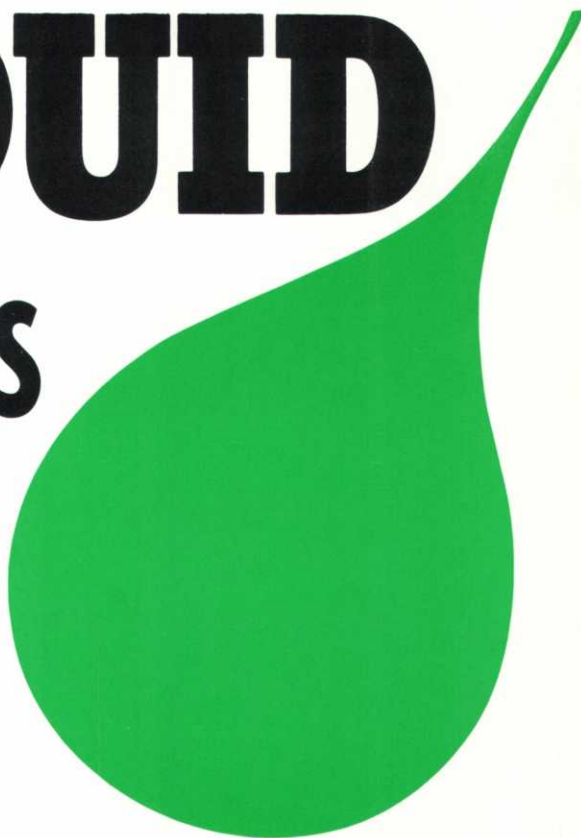
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(cont. from page 20)

field, examples have shown that these wants have been forced into situations not conducive to dollar-value results.

**ANSWER:** *James Branstrom, CGCS, Palm Beach Polo & Country Club.* "Some of the very exclusive clubs can, but this is only 5% of the population. I do not know if these exclusive clubs can afford the superintendent's salary, because they should be paid well.

**ANSWER:** *George W. Cavanaugh, Golf Course Manager, Bear Lakes Country Club.* "Yes, but I do not think money can buy, year round, consistent bent greens.

**BREAKDOWN:** NO - 9; YES - 4; If specific clubs are willing to accept the expense - 1; Less than 30 clubs in state - 1

**QUESTION:** If a heat & humidity tolerant bentgrass is developed would you then be in favor of pure bentgrass greens in Florida?

**ANSWER:** *Daniel L. Hall, Jr., CGCS, Sunbelt Turf Management.* "Only if properly budgeted and members are informed and KEPT INFORMED.

**ANSWER:** *Cecil Johnson, Avila Golf & Country Club.* "Yes. If conditioning of golf courses had been totally acceptable 20 years ago, we would not have seen any improvement in the past 20 years.

**ANSWER:** *Carl McKinney, J.D.M. Country Club.* "I do not think we have a need for bentgrass in South Florida where bermudagrass does so well, at reasonable cost.

**BREAKDOWN:** NO - 2; YES - 5; Possible, wait and see attitude - 6; Stick to improving bermudagrass - 2

**QUESTION:** Do you feel the expense of overseeding in SOUTH FLORIDA is justified?

**ANSWER:** *Michael J. Perham, CGCS Project Agronomist, The Moorings Club.* "No, but in my situation, being associated with a real estate development, they do not want to take a chance on off color greens in the prime selling months,"

**ANSWER:** *David C. Holler, CGCS, Quail Ridge Country Club.* "Yes I do! With the type of membership I have (80% go north for the summer) they want to have green grass through the winter and I feel they are willing to pay for it."

**ANSWER:** *Scott Wahlin, Grounds Manager, Miami Lakes Inn, Athletic Club, Golf Resort.*

"Usually not (no). However, I have seen clubs in South Florida who, in my opinion, should overseed. These clubs had several contaminated greens, very low budgets, and some members with low expectations. The majority of their play occurs in the winter. They chose to redo their greens with low standards, (low bid, fudge on recommendations, etc.). Would it not be better to overseed with rye, generate some revenue, and rebuild properly when adequate funds are available? Overseeding should be viewed as a temporary measure — not an annual routine."

**BREAKDOWN:** NO - 6; YES - 7 (3 of the yes answers were directly related to developer sales competition for "greener greens"); Depends on geographical location - 2

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## WHY DON'T NORTHERN GOLF COURSES PLANT PALM TREES?

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"Next to the lottery, the biggest gamble in Florida is bentgrass," according to Reed LeFebvre, past president of The Florida Golf Course Superintendent's Association. Bentgrass has been used by a few courses in Florida for at least 10 years and from that experience Reed says, "the turf did not live up to expectations on a year-to-year basis. Courses that play only 25-50 rounds of golf per day can hardly prove that bentgrass is a viable alternative for Florida greens."

After attending the seminar on the use of bentgrass greens in Florida, reading up on the subject, writing this article based on first hand information from 15 of our fine Florida Golf Course Superintendents and having had some 24 years of "information by osmosis," as the wife of a superintendent, I have formed my own thoughts on this issue. Based in part on the following:

Would sitting in a chicken house all day make you a chicken? How about transporting a beautiful northern greener than green, bentgrass green from the cool, crisp region in which it was grown and placing it in our warm, heavy air? Would that give you a beautiful greener than green, bentgrass green in Florida?

Why don't northern courses plant palm trees? And why can't we have "Christmas trees" on our courses down here? When our northern visitors arrive, comments are always made which extol the beauty of our swaying palms and our symmetrical, state tree, the Sabal Palm (my favorite). And I always comment about the classical northern pine trees when we visit the north. The point I am getting at is: let us all enjoy, work with and be grateful for what Mother Nature, in Her wisdom of the ages, has given to us. And then let us all marvel at and enjoy what She has given others up in their special corner of the earth.

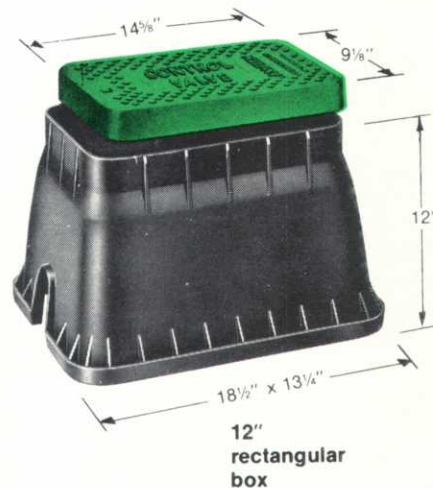
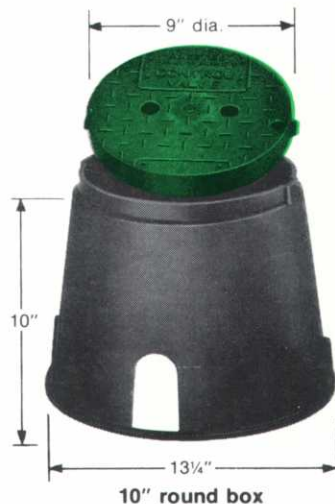
I vote for building snowmen up north where they can thrive; while we concentrate on building sandcastles in Florida that can match their beauty. ■

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# Watching Your Tees & Q's

By John H. Foy  
Southeastern Regional Agronomist



## — BENTGRASS IN FLORIDA — The USGA Green Section's View

Bentgrass, Bentgrass, Bentgrass — Without a doubt, this has certainly been the hot topic of the year in Florida. Even mole crickets, nematodes and goosegrass have had to take a back seat to this visitor from the north. Because bentgrass greens have historically provided superior playability to bermudagrass greens, the use of this cool season turf variety has been pushed further and further south. But, a review of growth factors and/or requirements for bermuda and bent shows that bentgrasses are about as adapted to year round survival in Florida as an orange tree is to surviving in Wisconsin.

We are all aware of a few isolated cases of "pure" bentgrass greens being maintained in Florida, but this proposition is definitely not the way to go for 99% of the courses in the state. The USGA has and will continue to fund turfgrass research with the prime objective of realizing reductions in water usage and management cost. Growing bentgrass in Florida (in the summertime) is obviously a move in the opposite direction. Thus, "for the good of the game," the Green Section's position for the present is that year round bentgrass is not a justifiable undertaking.

However, because the primary play season in Florida occurs during the fall, winter and spring months when environmental conditions are not favorable for active bermuda-grass growth (and for the Northern 2/3rds of the state a period of total dormancy), winter overseeding is a necessary practice. The basic reasons for overseeding are to provide a green color, protection to the base bermuda, and in some cases to improve the playability of the putting surfaces. In the pursuit of superior surfaces, bentgrass overseeding has become more and more popular. But, there are a number of factors that must be taken into consideration as to whether even overseeding with bentgrass is the right way to go for most Florida courses. The primary considerations are:

1) *Rate of establishment* — The bentgrasses are much slower than the perennial ryegrasses, typically two to four weeks more time is required for a mature surface to be developed. Thus, establishment must be initi-

ated earlier when environmental conditions are not as favorable and there is a longer period of player inconvenience.

- 2) *Greens Construction* — Bentgrasses do not tolerate high organic (muck) and/or poorly drained soils very well at all. Also, a good irrigation system is a must.
- 3) *Wear tolerance* — Even on large greens, if 200 to 250 rounds a day are played, it is quite difficult to maintain a consistent surface from a bentgrass base.
- 4) *Shade and air circulation* — While bentgrasses are much more tolerant to shade than bermudagrasses, some thinning of the turf can be experienced in areas where heavy shade persists. Also, if the greens have restricted air circulation, the potential for disease activity is greatly increased.
- 5) *Spring transition* — With the improved heat tolerance that has been bred into both bent and ryegrasses, transition back to the base bermuda is more difficult than in the past. But, transition with the rye's is still much easier, earlier and more uniform. Thus, again less player inconvenience is experienced.

The one big advantage to the use of bentgrasses for overseeding is that they do provide faster putting speeds. However, strides are continuing to be made with ryegrass overseeding. Using varieties with finer leaf blade development and less aggressive growth, mixes with other cool season varieties, reduced seeding rates and more intensive management practices have helped improve the acceptability of ryegrass overseeding for general membership play.

For South Florida, it is quite debatable as to whether overseeding is necessary at all for a lot of courses. I have had the opportunity to observe some truly outstanding non-overseeded greens where the membership has been educated that while the greens may go "off color" occasionally during the winter, color does not affect playability. But, for the majority of the courses through the state,

(cont. on page 28)

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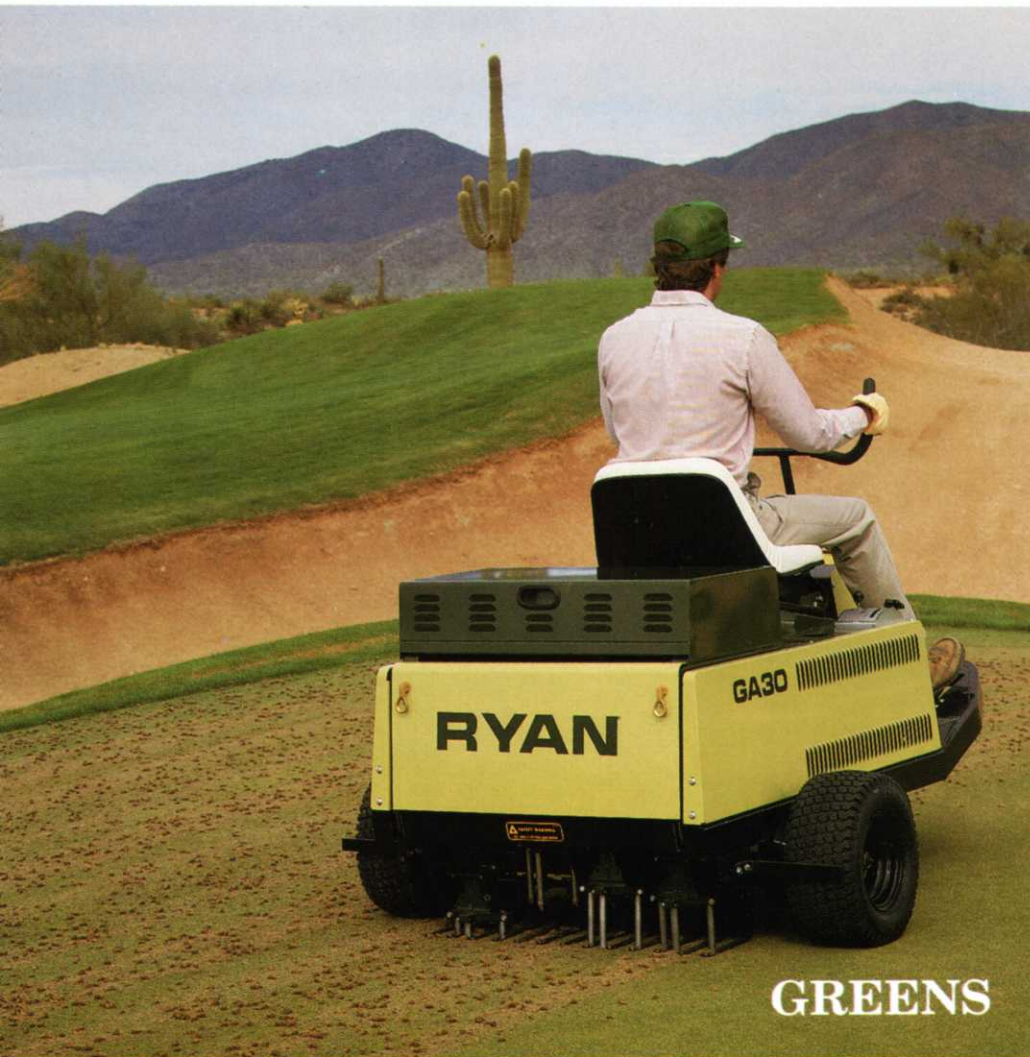
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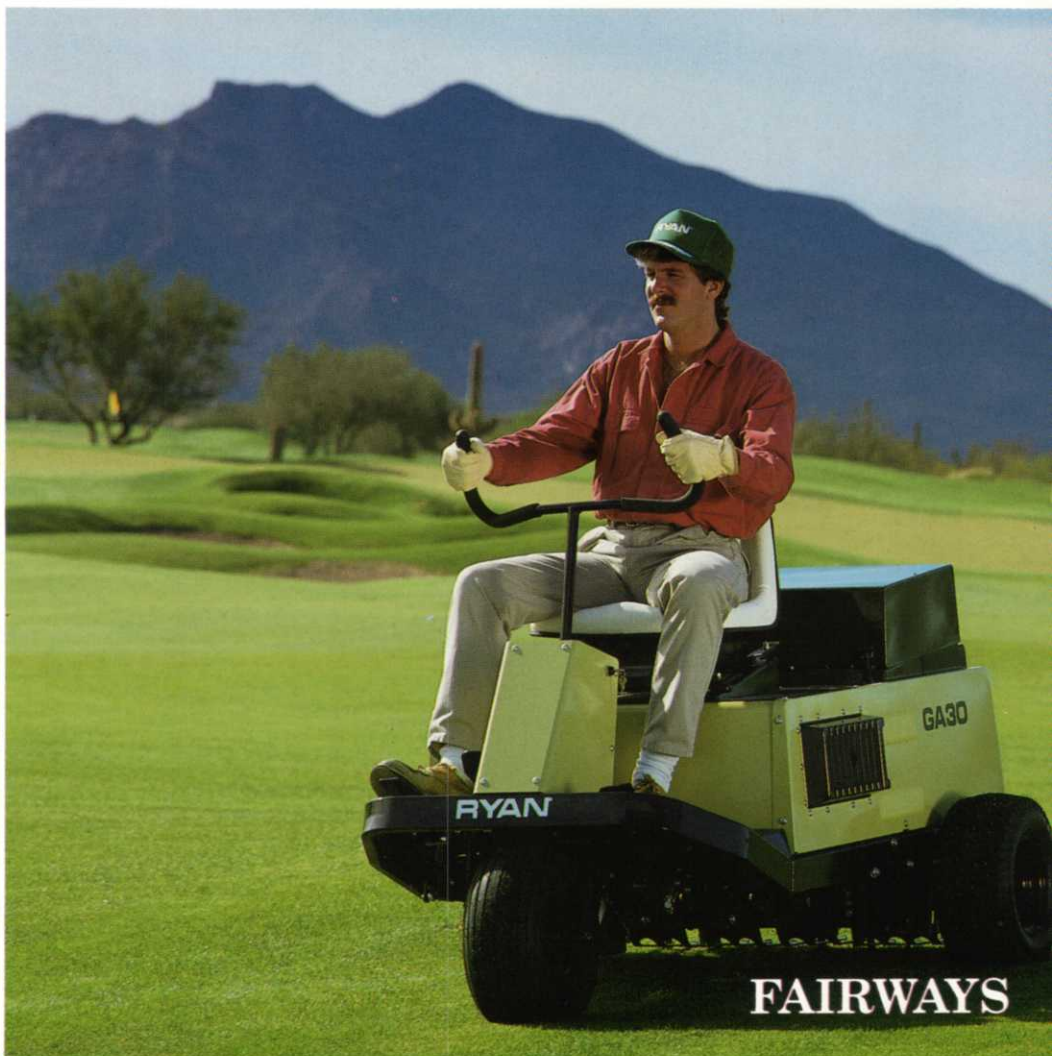
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(cont. from page 24)

winter overseeding will continue to be necessary.

As to what is the best overseeding material for a particular course, only after a thorough analysis of all of the perimeters can an intelligent decision be made. The last

reason in the world for deciding what to overseed with is because a neighboring course is going a particular route. The objective should be to try to provide the best possible course conditioning at all times for the majority of the golfers from the available resources. ■

Some comparisons of growth factors and/or requirements of bermudagrass and creeping bentgrass for golf greens in the South.

Prepared by Dr. Jeff Krans, Agronomist

Growth factors or requirements	Bermudagrass	Creeping bentgrass
Optimum soil temperature for shoot growth	80-95°F	60-75°F
Optimum soil temperature for root growth	75-95°F	50-65°F
Growth limiting soil temperature	100-110°F	80-95°F
Lethal soil temperature (direct high temperature kill)	120°F	100-110°F
Optimum response to nitrogen fertilization	April-September	March-May and again in September-November
Detrimented response to nitrogen fertilization	November-March	June-August
Acceptable pH range	5.0-7.0	6.0-6.5
Acceptable phosphorus levels	low to high	low to medium (excess phosphorus influences Poa annua competition)
Optimum potassium levels	medium to high (low temperature survival)	medium to high (high temperature survival)
Acceptable soil texture	loam or sand	sand
Irrigation capacity	conventional irrigation adequate	automatic syringing and irrigation required
Air Circulation	not critical	required
Cultivation practices	May to September	April and May
Fertilizer application	granular	granular and liquid
Pesticide tolerance	very good	poor (especially under high temperature)
Disease susceptibility	low	high

# ABOUT FACE!

## 'General' Changes His Mind on Bentgrass

by Larry Kieffer

A leading general in the Florida bentgrass war has switched sides.

Arnold Palmer, long seen as a proponent of growing bentgrass on Sunbelt greens year around, has decided to give up the practice at one of his most visible projects, Isleworth CC, an exclusive community just north of Orlando in central Florida.

"There are several reasons for the decision," said Ed Bignon, director of operations for Arnold Palmer Golf Management Company, which manages Isleworth for Palmer, who owns it.

"Basically, it was a business decision."

"Arnold is very sensitive to the needs of the superintendents and, after four years, he decided bentgrass greens at Isleworth in the summertime are not worth the strain it puts on the superintendent and his staff."

Bentgrass, the superfine-bladed turf used on greens in northern climes, is generally regarded by top players to provide a putting surface superior to bermudagrass, the turf commonly used in tropical climates.

Bermudagrass lies with a "grain," which affects speed and accuracy of the roll, and it goes dormant — turns brown — in winter, a condition most golfers find esthetically unacceptable even if the actual effect of dormancy on roll is minimal.

To combat the problem of dormancy, bermudagrass

greens usually are overseeded in autumn with cool-season grasses such as bentgrass or rye. Those grasses take over as the bermudagrass goes dormant, and then die in spring — sometimes with the help of the superintendent — when the bermudagrass resumes growing.

But golf course owners have been tempted to try to grow bentgrass year around for more than 40 years, according to several experts who spoke at a "Bentgrass in Florida" seminar at JDM Country Club in Palm Beach Gardens last month. Year-around bentgrass would eliminate the effort and problems associated with overseeding while gaining what is perceived to be a superior putting surface in summer.

Unfortunately, bentgrass is not biologically suited to a hot, humid climate. In order to keep it alive in summer, it must be hand-watered several times daily. The excessive watering leaves the plant susceptible to fungus infections which, in turn, require the use of fungicides at higher levels than many agronomists and environmentalists consider desirable.

"Arnold just decided it wasn't worth it," Bignon said. "After four years, it has become obvious that it is not a good idea to try to grow bentgrass at this course in the summertime."

Maintaining bentgrass through the summer is a very expensive proposition, calling for a total annual maintenance budget of \$700,000 or more, Bignon said.

"But money was not the issue," he added quickly. "Arnold is too sensitive to his people to put them through it for another summer. It has been weighing very heavily



Bentgrass will not be growing on the 18th green, above, at Arnold Palmer's Isleworth CC near Orlando next summer.



ARNOLD PALMER

**Arnold is too sensitive to his people to put them through it for another summer. It has been weighing very heavily on his mind all summer and Arnold Palmer doesn't need to be worrying about 19 greens with all he has on his mind.**

**ED BIGNON, Director of Operations  
Arnold Palmer Golf Management Co.**

on his mind all summer and Arnold Palmer doesn't need to be worrying about 19 greens with all he has on his mind."

The greens at Isleworth will be replanted with bermuda this spring and overseeded next autumn, "probably with bent," Bignon said.

"We really began looking seriously at using Tifdwarf (a strain of bermudagrass) early this summer," Bignon said. "We have Tifdwarf at one of our other properties in central Florida — MetroWest (also near Orlando) — and, believe, me, the ball will flat roll. It's not nearly as grainy (as other strains of bermuda) and we are very impressed. We know the membership will be, too."

Two other factors weighed in the decision — traffic at Isleworth and Palmer's unique position in the golf world.

Traffic is one of the critical factors in the viability of bentgrass during the long, hot, humid Florida summer. Walking on the grass is very stressful to the plant, particularly when it is growing out of its natural environment. Even the strongest advocates of year-round bentgrass have conceded that it can be done only on courses that don't get a lot of play in summer.

"The demographics at Isleworth didn't turn out to be what we thought they would be," Bignon said. "Four years ago, in the planning stages, we felt that 20-30 players would be a busy day in summer.

"We are not anywhere near buildout and we already have

a lot of days when we get 40-50, even 60 players a day in summer. Most of our members are turning out to be year-around residents."

With traffic at Isleworth already higher than expected and everything indicating it will steadily increase, the club no longer fits the profile of a good candidate for experimenting with bentgrass.

"You understand, if we had been right, we would have been hailed as pioneers," Bignon said with a chuckle.

Weighing even more heavily was Palmer's awareness of his position as one of the two most influential men in golf (the other being Jack Nicklaus, who also is growing bentgrass at some of his courses in South Florida).

"Right from the very beginning, Arnold was a little concerned that other people would try to copy him," Bignon said. "But he never dreamed so many people would see what he was doing and then go back to their own clubs and say, 'If Arnold Palmer can do it so can we.'

"He didn't want that to happen, but unfortunately, it did. And Arnold Palmer is actually aware of the problems this (pressure to grow bentgrass in summer) has caused superintendents all over the state.

Coming at the heels of his alliance with the Florida Turf-grass Foundation's effort to raise a \$5 million endowment for turf research, Palmer's decision on Isleworth is likely to enhance his leadership position in the golf course construction and maintenance industry.

Furthermore, his tacit admission that it is not yet possible to grow what is perceived to be the "ideal" putting surface in Florida's summer climate can only emphasize to golfers, most of whom understand little about agronomy, the need for more turf research.

Bignon said he and Palmer both think, "from what we have seen," that the answer to the current drawbacks of bermudagrass lies in developing a cool-tolerant strain of that plant as opposed to finding a heat-and-humidity-tolerant strain of bentgrass.

He also said the Isleworth decision did not necessarily apply to other Florida courses in the Palmer stable.

"Each situation must be handled individually," he said. "We can only tell an owner what we recommend. If he said, 'I absolutely insist on bentgrass,' then we have to give him what he wants.

"If his pockets are deep enough and he is ready for the headaches associated with bentgrass, then we have to give it to him.

"But the bottom line is to create the best possible putting surface for the members and I don't think today's bentgrass is the answer." ■

*Reprinted from Golfweek 11-19-87.*

# Turf Nematicides: AN UPDATE

By Robert A. Dunn

Turf grasses do not generally lend themselves to many of the nematode control practices that are so useful for farmers who grow annual crops. Crop rotation and physical manipulation of the soil before planting are not often feasible for permanent sod. Nematode resistant varieties of warm-season grasses are not yet available and are never likely to cover the broad range of nematodes of turf in Florida. Biological control is a realistic dream for the future, but is not yet practical. The principal means of managing turf nematode populations, beyond manipulating the few cultural factors that are mentioned below, is application of a chemical nematicide that is registered for the purpose. With a few provisos, then, this article sets forth the current state of nematicides for established turf grasses in Florida.

*Effect of turf management practices on nematode populations and sensitivity of turf to nematodes.* Turf can often survive well despite the presence of moderate levels of several nematodes. In fact, there is less likely to be serious damage to turf when the population is composed of a few individuals of many different kinds of nematodes than when only a few kinds are very numerous. A moderate level of turf management, rather than extreme neglect or overuse of water and fertilizer, seems to give turf the best chance to strike a reasonable balance with the nematodes that live at its roots.

Deep, less frequent watering encourages roots to grow deep, so they can draw water and nutrients from a much greater volume of soil than could the short roots that develop with brief daily watering cycles. When the roots have access to a greater volume of soil, the turf is less susceptible to brief dry spells and the grass can recover more of the fertilizer nutrients that have been applied.

Overuse of nitrogen encourages excessively tender, lush root growth, which in turn supports maximum nematode reproduction. Under such conditions, nematode populations often become unnaturally high. The high populations may destroy roots faster than they can be replaced under the best of cultural conditions, and they will certainly wreak havoc if the artificially high level of maintenance is interrupted for any reason. Do not neglect the complete nutritional needs of turf; for instance, strong root growth depends on having adequate potassium levels.

A given level of nematodes will cause less apparent damage to turf if other sources of stress, often easier to manage, are kept to a minimum. Plant diseases, especially root rots, are often associated with nematode popu-

lations. A serious insect outbreak may dramatically reduce the reserves that turf needs to withstand nematodes. Nutrient deficiencies and soil compaction or water-logging can make turf more sensitive to nematode damage to roots. When turf is mowed too short, it is unable to manufacture enough carbohydrates to support normal root growth and replacement. Turf that is planted in too much shade will also have more trouble providing for adequate root growth.

In short, if you want to maximize your chances of developing major turf nematode problems, scalp the grass regularly, water it daily and lightly, push it with high nitrogen fertilizers but with little or no other nutrients, and ignore insect and disease problems.

*Nematicides.* As noted above, there are many good reasons for the importance of chemical nematicides in turf nematode management. Before discussing individual products, we should discuss some general points about turf nematicides.

*Environmental hazard* is a real risk that goes with use of any turf nematicide. These products are all highly toxic, water-soluble organophosphate pesticides. All can be hazardous to wildlife and fish as well as people. All will (must!) leach through the soil profile and thus present some risk of groundwater contamination. Pesticide regulations and labelling restrictions are rapidly being changed to address those problems more directly. For instance, labels of all nematicides will soon reflect potential risks to endangered wildlife species. Some nematicide labels have specific warnings concerning the risk of groundwater contamination. Failure to fully meet the requirements of any such labelling could result in civil or criminal penalties, so they must be taken very seriously. Some of these new restrictions may make it impossible to apply some or all nematicides to locations where the manager is certain that nematodes are causing serious damage to turf. Nevertheless, if the label forbids the use, the turf manager has no legal alternative but to forgo the use of the nematicide and to try to manage the nematodes by cultural manipulations.

The effects of nematicides are only *temporary*. The products that may be applied to established turf must remain in the root zone (upper soil level, usually 4-10 inches, where most roots grow) for several weeks to have maximum effect. If they are lost from that zone too early, many nematodes that were temporarily inactivated may quickly resume feeding, reproducing, and damaging turf roots. Even if nematode kill is complete in

(cont. on page 32)

(cont. from page 31)

that zone, no treatment can reach all nematodes at all depths of the treated area. Therefore, nematodes will reinfest the turf root zone quickly after the concentration of nematicide drops below that needed to inhibit their activity. How long the chemical remains above that level is determined by a combination of many factors: physical and chemical characteristics of the nematicide, rate applied, how much water has passed through the soil profile, and soil texture, organic matter, and pH. Hence, no nematicide provides more than a limited period of relief from nematode stress. Applying a nematicide does not guarantee that turf will grow better. A nematicide can only improve turf health if:

1. nematodes that it can control were causing the problem to start with;
2. the material is used correctly;
3. other major (growth-limiting) pest and disease problems are under control;
4. all normal nutritional and environmental needs for turf growth are provided during the protected period.

Uniform penetration of soil by the dissolved active ingredient is critical for effectiveness of any nematicide. Physical soil treatments that will improve uniformity of soil penetration by water will enhance nematicide performance: aeration, vertical mowing, thatch removal, etc. should be done before applying any of these products. Soil should be moist but not saturated when the nematicide is applied, and foliage must be dry if a granular formulation is used. Follow application with 1/4 to 1/2 inch of water, as directed on the product label, to incorporate the active ingredient into the root zone.

Comments about specific nematicides beyond the notations in the table follow in this section. Note these care-

fully, and pay close attention to new labels, information released by the registrants (manufacturers), and news from regulatory agencies to be sure you are not accidentally guilty of pesticide misuse.

MOCAP® 10G will soon appear with some important label changes. New product package labels will refer to commercial turf use, but not to home lawn applications. A separate label being issued to cover only the home lawn application will identify the product as a Restricted Use Pesticide for that specific use. Therefore, Mocap 10G will not be a Restricted Use Pesticide for commercial turf or other crop uses. However, the label on the bag will not permit use on home lawns or "domestic turf," and the separate label which the applicator must have with him when using the product for home lawns will make it mandatory that anyone using it there must be a Certified Applicator.

NEMACUR® 3 is registered specifically for golf courses, with a notation that it is "not recommended for tees or greens." It is not registered for any other turf use. Its label limits it to no more than 2 applications per year, as is also the limit for NEMACUR® 10G. Application more frequently or to turf in other sites than are specifically allowed on the label is a serious violation of FIFRA. Birds are very susceptible to this chemical; every effort must be made to water it into the soil quickly after application. If the spray rig or granule spreader can cover ground much more rapidly than the irrigation system can move, slow the rate at which fairways are treated to keep close to the watering cycle, rather than risking a prolonged period of bird exposure.

#### NEMATICIDES FOR ESTABLISHED TURF IN FLORIDA

Product	Legal sites, methods	Amount
Mocap 10G	Commercial turf, such as golf courses, sod farms, and cemeteries; may be applied to many grass species. See note in text about application to home lawns.	4.6-6.9 lb/1000 sq ft, or 200 to 300 lb/acre.
Nemacur 10G	Golf courses, cemeteries, sod farms, industrial grounds, parkways, roadways; <i>do not use</i> on residential lawns or public recreational areas other than golf courses. Restricted Use Pesticide.	2-1/3 to 4-2/3 lb/1000 sq ft or 100 to 200 lb/acre.
Nemacur 3	Golf courses; not recommended for tees or greens. <i>Do not use</i> on residential lawns or public recreational areas other than golf courses. Do not use more than twice per year. Restricted Use Pesticide.	9-12 fl oz/1000 sq ft or 3-4 gal/acre.
Sarolex	Turf and lawns.	1.5-2.5 pt/1000 sq ft or 8.2-13.6 gal/acre.
Scotts Pro-Turf	Contains ethoprop, the same active ingredient as Mocap. For use only by professionals; <i>do not use</i> or store in or around the home.	9.2 lb/1000 sq ft or 400 lb/acre.

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# Palm Beach Trade Winds



By: Mike Bailey  
The Falls Country Club

## Let's Hear from the Other Side

Imagine this; a lush, beautiful golf course located on a tropical island where warm breezes ruffle the coconut palms and bermudagrass is the dominant turfgrass from tee to green.

Does this sound familiar? If you live in South Florida, this is probably what you see everyday; a golf course with bermudagrass throughout. However, there has been something creeping down from the up north country; the popular rage of the bentgrass phenomenon.

It sounds sort of peculiar, does it not? A cool season turfgrass species trying to grow in a year round, warm season climate. After all, South Florida, from Jupiter across to Naples, is listed geographically as being located in Zone 10; a tropical, warm season climate, where frosts are seldom, if ever at all. However, we find ourselves discussing a situation similar to locating an Eskimo in the tropics and asking, "why are you perspiring so profusely?"

Obviously, many superintendents in South Florida have been perspiring profusely also. The fear of losing your job because you are having a difficult time growing bentgrass in South Florida has sadly been on the increase. The intent of this article is to not ridicule the concept of overseeding, yet, let us weigh the pros and cons of overseeding in a climate where perhaps, it could be best to not overseed. Yes, life does exist without bentgrass.

Now, let's hear from the other side, those courses that successfully chose to not overseed. Given the right situation, there are many benefits to not overseeding. In the South Florida climate, if your greens are relatively large (6,000 square feet or greater), constructed of good, coarse perculative sand (and obviously U.S.G.A. specs would be even better) an adequate budget (to properly maintain turf throughout the winter season), a healthy, pure stand of Tiftdwarf (that is relatively clean of offensive contaminations), and a tolerable amount of peak season play, in order to endure the foot traffic, you can successfully combat the season without overseeding.

In defense of the Bent blues, if your greens are small, poorly constructed, with excessive winter play, overseeding might be your only solution for survival. In order for this discussion to be fair, let's hope you do not fall into

this category.

Let us compare the overseeded course to the non overseeded course on a month by month basis and see who scores the highest grade. We will begin to take the test during the month of September, reason being, this is the very beginning of the snow bird season, where some of the tourists begin to come down.

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### THERE ARE MANY BENEFITS TO NOT OVERSEEDING IN SOUTH FLORIDA.

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*September: Overseed* — Score B (3.0). The greens are acceptable, although fertilization has dropped off in order to slow down the aggressiveness of the Bermuda in preparation of next month's overseeding.

*September: Non Overseed* — Score A (4.0). The greens are probably the best they will be all year. Summer renovation is paying off, fertility is up, the greens are exceptionally healthy and ready to prepare for the winter season.

*October: Overseed* — Score D (1.0). Overseeding is taking place. Verticutting, topdress, establishment of the month of the year for the overseeded course. Politically, this can also be very disheartening. Members are just coming down, and getting an ill taste of aggravation. this can also be very disheartening.

*October — Non Overseed* — Score A (4.0). For the non-overseeded course, life is much like September. A good healthy stand of turf, that should continue to look excellent and putt relatively true for Bermudagrass. Politically, this can be a very satisfying month. Members coming down and feeling positive about the conditions of the golf course with no aggravation.

*November: Overseed* — Score C (2.0). Overseeding is becoming established, mowing heights are gradually being lowered and next month will be better.

*November: Non Overseed* — Score A (4.0). This is probably the last of the good months. Density, color and

(cont. on page 38)

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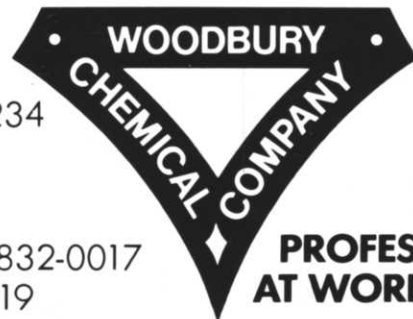
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(cont. from page 34)

overall putting quality should still be excellent.

**December: Overseed** — Score C (2.0). The greens are beginning to look better. Cooler nights and shorter days are helping the establishment of the seed. Most of the members are in-town by now, expecting excellent greens, they should be patient, realizing next month will be better.

**December: Non Overseed** — Score B (3.0). The greens are beginning their downward swing. The weather is not severe enough to be detrimental and overall the members are still satisfied with the product.

**January: Overseed** — Score B (3.0). The greens are really shining now. They should be completely established, mowing height down tight and putting excellent. If this isn't your month to excel, it wasn't worth the bother. Everybody's in town and expecting perfection.

**January: Non Overseed** — Score B (3.0). The greens are holding on and this will be the last good month. Fertilization is up, topdressing is aiding the growth, putting quality is still good however, the color is off and the density could be suffering because of the foot traffic.

**February: Overseed** — Score A (4.0). Once again this should be a good month much like January. The seed has matured and the members should be very happy.

**February: Non Overseed** — Score C (2.0). This will be the toughest month of the year. The greens should actually putt quite good, because of the heavier winter fertility and topdressing however color can be off. This must be the key part of educating the members — "putting for quality, not for color."

**March: Overseed** — Score A (4.0). This could be the last great month to cash in. Assuming the seed was a good take, and no disease has occurred, the members should be very happy.

**March: Non Overseed** — Score B (3.0). Assuming no frost has occurred, you're home free. The greens will be on their upward swing. Putting quality should still be quite good although color will still be slightly off.

**April: Overseed** — Score B (3.0). Assuming no frost has occurred, you're home free. The greens will be on their upward swing. Putting quality should still be quite good

although color will still be slightly off.

**April: Non Overseed** — Score B (3.0). The greens should not only putt good, but color should be improved to the point of almost looking "normal." For this given month, the greens will be equally competitive to the overseed. Members are beginning to pack up and head north with a positive feeling about the non-overseeded greens — a feeling of passing the test with a good grass.

**May: Overseed** — Score C (2.0). By now, the overseed will be fading out, warm soil temperatures will make it most difficult to maintain the overseed, unless extra special attention is given.

**May: Non Overseed** — Score B (3.0). Little effort will be needed for the month. The greens should be extremely healthy, rich in color and you're home free from here on.

**June: Overseed** — Score C (2.0). This can be a very difficult month. Transition can be quite poor. If the Bermuda does not fill in quickly, putting quality will not be good.

**June: Non Overseed** — Score A (4.0). Much like May, the greens should look good and putt as good as desired. By now, the quality of putting can be as good as the amount of effort needed to satisfy the membership. If the season is over, and play has tapered down, you can concentrate your efforts towards summer renovation.

By now, the season is over, the time is up and let's compare the scores.

	OVERSEED	NON OVERSEED
September	B - 3.0	A - 4.0
October	D - 1.0	A - 4.0
November	C - 2.0	A - 4.0
December	C - 2.0	B - 3.0
January	B - 3.0	B - 3.0
February	A - 4.0	C - 2.0
March	A - 4.0	B - 3.0
April	B - 3.0	B - 3.0
May	C - 2.0	B - 3.0
June	C - 2.0	A - 4.0
Overall Grade		
Point Average	C+ - 2.6	B - 3.3

You be the judge. Was the overseed worth it? If you're club is located in South Florida would you overseed? Month by month, its quite competitive! So competitive, the non-overseed fared rather well. Considering the additional expenses for seed, pesticides, labor and member aggravation during the establishment and transitional periods, it hardly seems worth it.

Non-overseed allows a course to stay on a more even keel throughout the season, it allows the maintenance crew to concentrate their extra labor efforts towards more course detailing. The non-overseeded course can actually look quite good from September thru June and you might even have some time to go over to the beach and let the warm, tropical, South Florida breeze, flow through your hair as you sit underneath the shade of a coconut palm. ■

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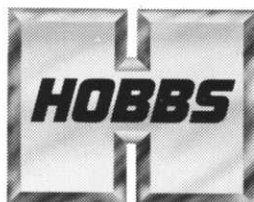
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## KEEPING THOSE ANNUALS HEALTHY AND HAPPY

*By Tom Teets  
Urban Horticulturist, Palm Beach County*

The winter season is an important time of year for annuals here in South Florida. Unfortunately, the annuals are frequently planted and left on their own to survive. Before long instead of being an attractive focal point of color in the landscape, they become a real eyesore. Continued care and maintenance is a necessity for successful annuals. They are not low maintenance plants.

Adequate watering, fertilizing, pruning and insect and disease control care are a must. Check the watering system frequently to maintain adequate coverage and moisture level. Most annuals cannot survive without frequent irrigation. However, water should be applied early in the morning so the leaves will dry off quickly to avoid foliar diseases.

To maintain continual growth and flowering, frequent light fertilization is desirable. Applying a granular slow release fertilizer will cut the frequency with which fertilizer is applied. Over fertilization may lead to excess foliar growth and reduced flowering. If this should occur, reduce the amount of nitrogen in the fertilizer you are using.

Light pruning and shaping may be needed to maintain the proper shape of annuals as the growing season progresses. Certain species such as marigolds, salvias and geraniums should have spent flowers pruned off to encourage continued blooming.

Annuals must be checked frequently for insects and diseases. Any problems should be promptly treated. A follow-up treatment according to labeled directions is frequently helpful. When insects become a persistent problem, granular systemic insecticides may be helpful in giving longer lasting control.

Using a regularly scheduled maintenance program on your annuals should help to increase their lifespan. ■

## IFAS FIELD DAY

**Sponsor:** University of Florida, IFAS

**Event Name:** IFAS Turfgrass Field Day

**Date:** May 5, 1988

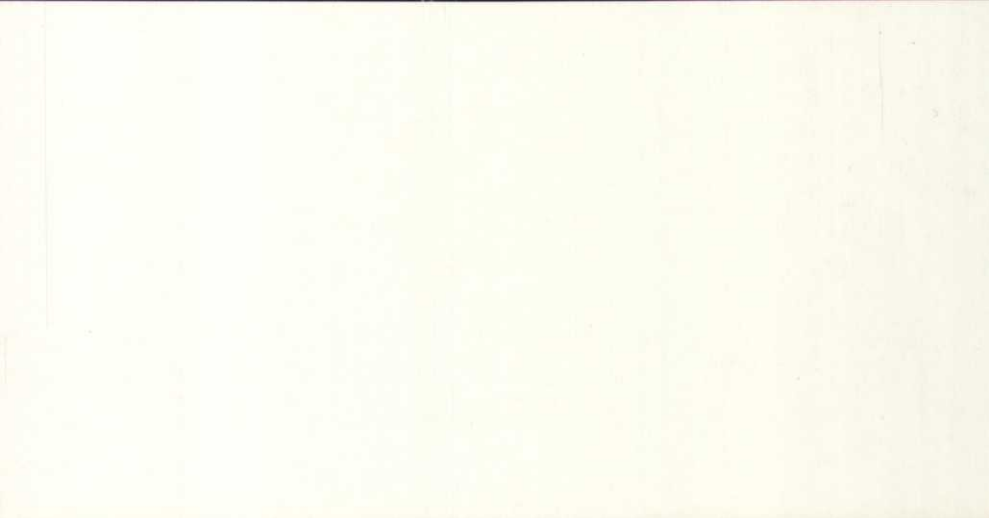
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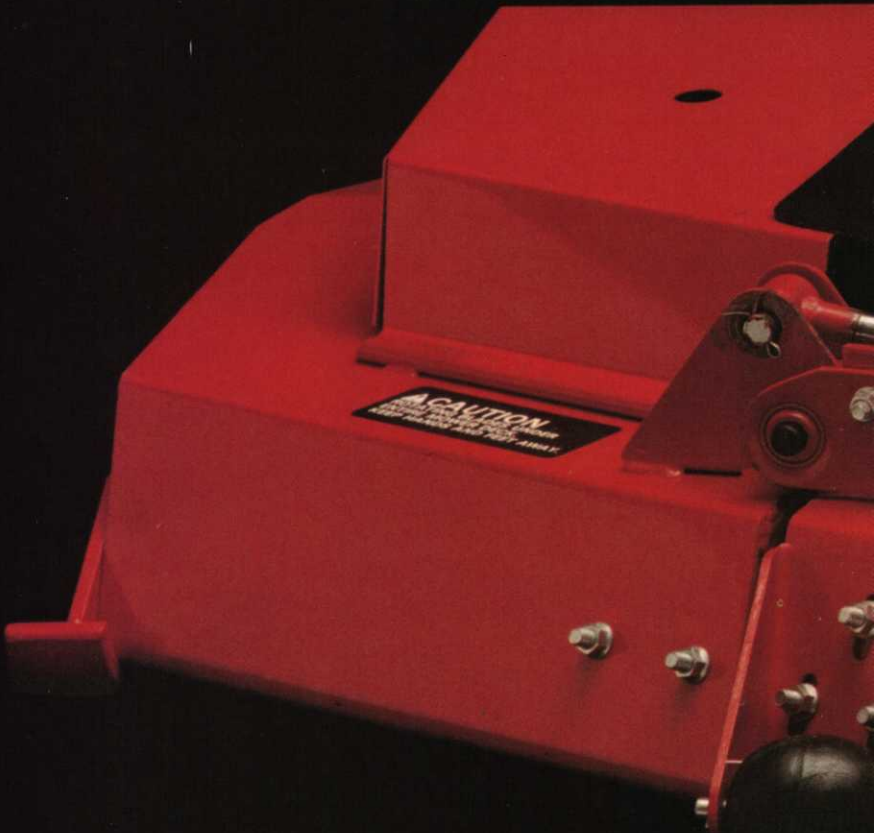
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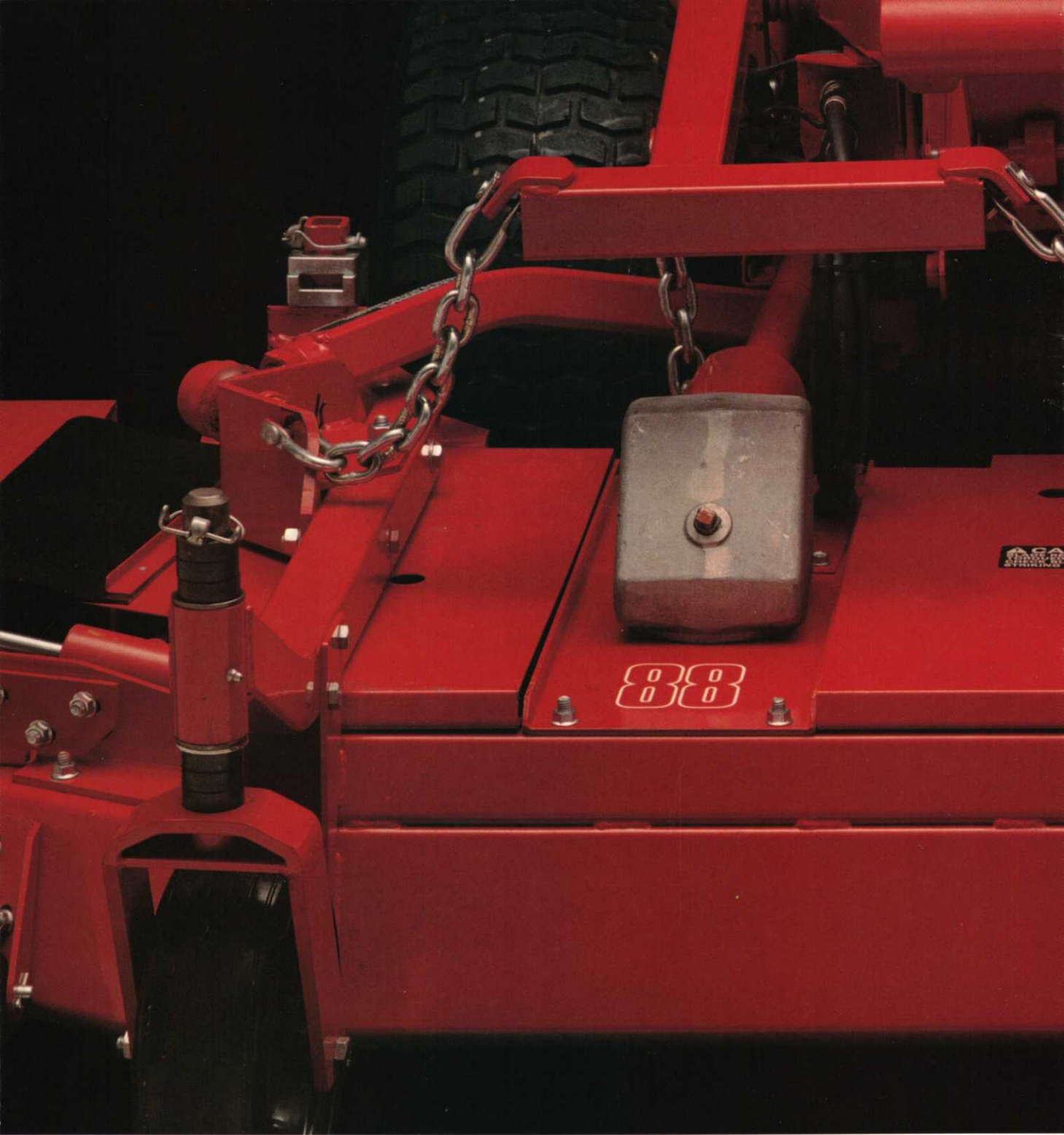




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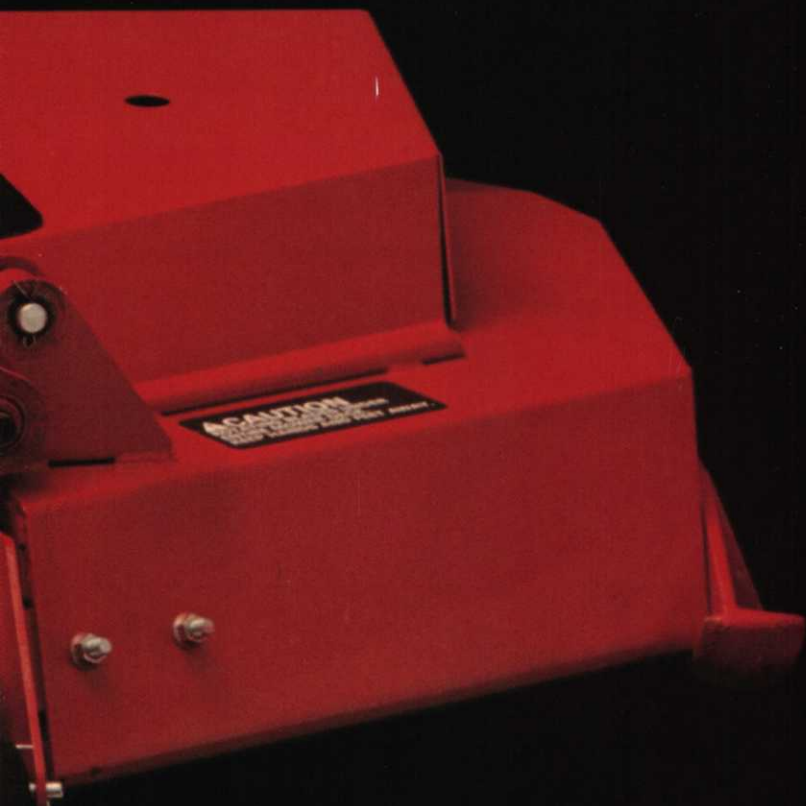
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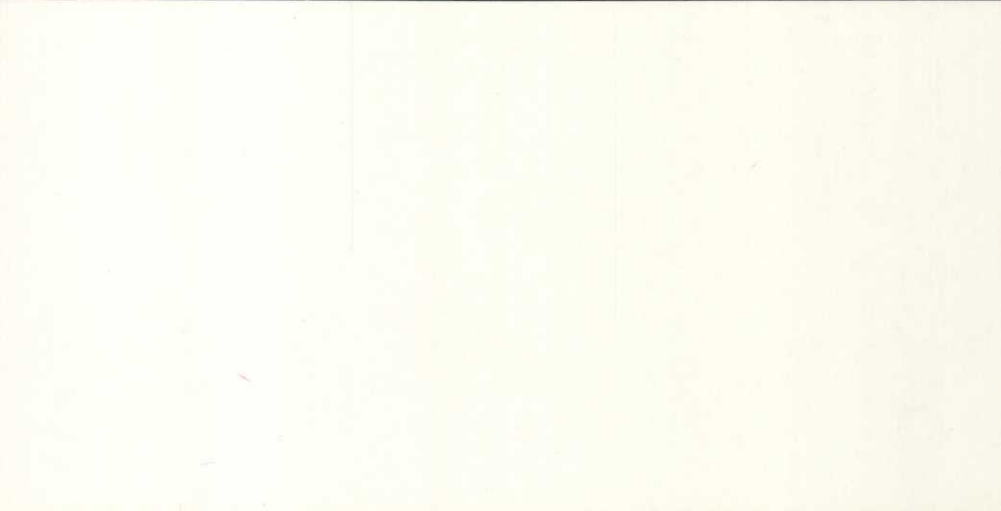
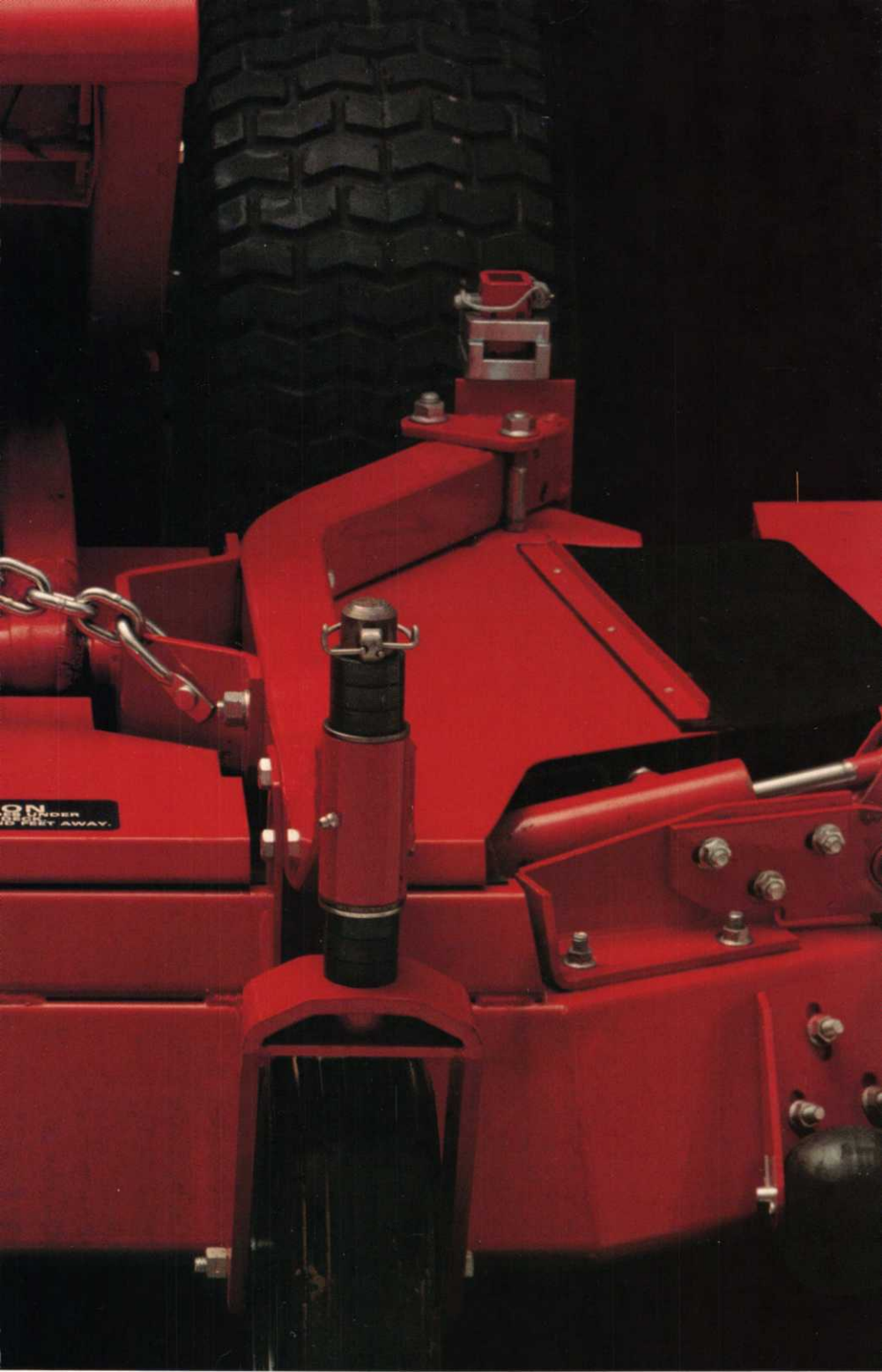
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# Florida Green Editor Makes News

Dan Jones, Certified Golf Course Superintendent at Banyan Golf Club, has been awarded the 1987 Florida Golf Course Superintendents Association's Distinguished Service Award.

He received this prestigious award for outstanding achievements as a golf course superintendent who has given his time unselfishly in promoting golf course management and the unification of the Florida golf course superintendent. The award was originated by the FGCSA in 1985 and is presented yearly at the Florida Turfgrass Association's Award Luncheon. The luncheon was held on Tuesday, October 13, 1987, in the Hyatt Regency Hotel in Tampa, Florida.

Dan has received many other awards in his distinguished career. He has served as President of the South Florida GCSA; he served as President of the FTGA in 1981; and he has received the Leo Feser Award from the GCSAA in 1978. He has served as the Editor of the *Florida Green* magazine, the award-winning magazine of the Florida Golf Course Superintendents Association, since its inception in 1980. ■

# LOFTS HOLDS PLCAA REGIONAL SEMINAR

Lofts Seed Inc. recently hosted the Professional Lawn Care Association of America (PLCAA) Philadelphia Regional Seminar. The meeting was held at Lofts' Research Center.

The program included several topics. Ed Altstadt of Lawn Doctor presented "Risk Management for Proper Hiring Practices." The Boyarin Agency's Bill Weber spoke on "Industry Insurance Trends." "Osha Material Handling and Equipment Standards" were discussed by Mike Yarnell of the U.S. Department of Labor. "New Jersey and Pennsylvania Industry Regulatory Updates" were provided by John Orrok, from the NJ Dept. of Environmental Protection, and Chris Forth of Alliance for Environmental Concerns.

Outdoor demonstrations included safety procedures and application techniques. A tour of Lofts' turf research plots was directed by Dr. Richard Purley, Research Director.

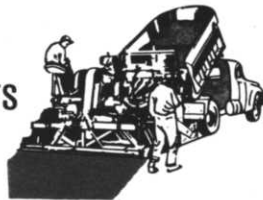
Besides being informative, attendance at the regional seminars qualifies for recertification credits. And, of course, present an excellent opportunity for area lawn care professionals to discuss the latest developments in their industry. ■

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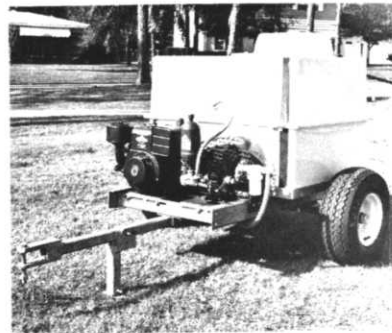
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## You Don't Have To Pay

By Scott Wahlin  
Miami Lakes C.C.

Paying Unemployment Compensation to an unworthy individual is bad business. It can be avoided.

Warnings and recordkeeping are very important. These can take a minimal length of time and can serve as an aid to problem resolution eliminating the need for termination. Straightforward honest communication may be facilitated. Document verbal warnings, as well as, written warnings. Conduct warnings and terminations in the presence of another supervisor. Tell the employee specifically why they are receiving the warning or termination. Have the employee and supervisor sign written warnings and termination forms. It should be noted on the form if the employee refuses to sign. Keep these records for two years following termination. You are liable for a claim for two years.

Never terminate an employee for "performance" or "attitude." You will pay.

You may terminate an employee for misconduct and not pay compensation. There are five areas of misconduct. These include: 1. failure to follow supervisory instructions; 2. insubordination; 3. violation of company policy; 4. excessive and unexcused absence; 5. excessive and unexcused tardiness. Those released due to absences caused by non-work related illness should receive unemployment compensation.

You may use a 90 day probationary period to weed out unproductive employees. Tell them about the probationary period when you hire them. Terminations made within this period do not need to be substantiated.

There are a number of good reasons for collecting Unemployment Compensation. Worthy candidates should be protected by this. Paying an unworthy individual is unnecessary. ■

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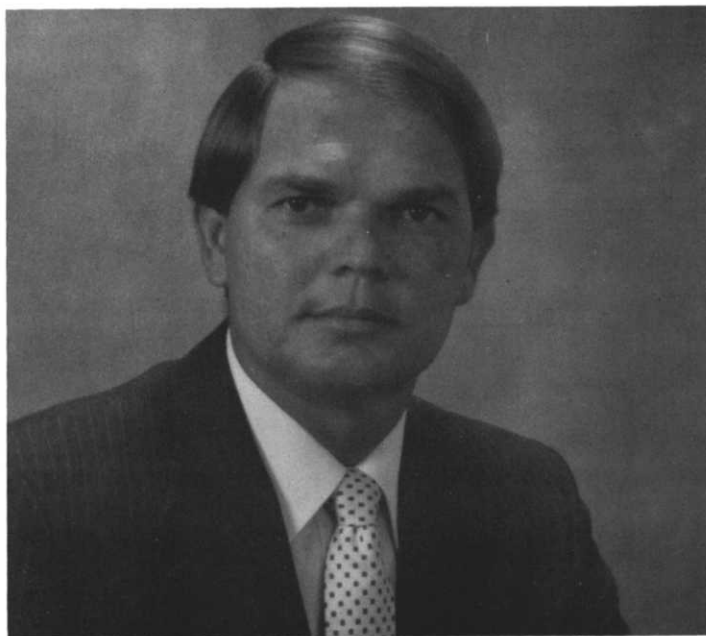
# Estech Announces Promotion of IRVEN B. STACY, III

Estech Branded Fertilizers, a division of Vigoro Industries, Inc., announces the promotion of Irven B. Stacy, III, to Vice President, Marketing, Specialty Products Division.

Stacy has held several positions with Estech since joining the company in 1968 when it was known as Swift Agricultural Chemicals Corporation. Most recently, he has been Director of Marketing for the Specialty Products Division, which ships products to over 70 distributors throughout the United States.

The Specialty Products Division manufactures the Par Ex with IBDU product line, the famous slow-release fertilizer for golf courses and professional turf areas, and the Woodace product line, a complete line of long-lasting fertilizers for ornamental nurseries and greenhouses.

Stacy will continue to be based at the Par Ex corporate headquarters in Winter Haven, Florida. He was educated at Pennsylvania State University and has attended management courses at Michigan State University. Stacy is married and is the father of three children. ■



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## Another Opinion

Dear Kevin,

In regard to your inquiry as to my opinion of the bentgrass/bermudagrass putting quality as a player in the 1987 U.S. Amateur; I felt the greens were inconsistent in speed & quality due to the varied amount & segregation of the two grass species. The amount of bent varied from green to green, & varied in areas of the green, which made it more difficult to judge the balls reaction, not only on putt, but on chips & pitch shots at well.

During my stay in Florida, I played two other golf courses in the area with pure stands of bermudagrass greens. To me these greens played much more consistently. Also it appeared that there would be no trouble getting a more than adequate tournament speed out of them.

Also, at the tournament, the bentgrass on the practice green did not hold up to the intense traffic; so that after the first day it was virtually impossible to practice and get a true feel of what the greens would be like.

In conclusion I do not want to give the impression that the combination bent/bermuda greens were poor; because they did play very well; but in comparison they did not play or look nearly as good as the solid bermuda greens.

I hope these comments are sufficient & will help.

Looking forward to seeing you in Houston.

Sincerely,  
 Roger Null, Golf Professional  
 Old Warson Country Club, St. Louis, MO

## NEW BENTGRASS

Cobra, a new creeping bentgrass from International Seeds, Halsey, Oregon has earned ratings for color, cover and shoot density comparable to Penn-cross, Penneagle and Pennlinks in a trial on the USGA golf green at Experiment (Griffin) Georgia according to Products Manager Harry Stalford.

The trial report showed that Cobra tended to have the best color in cooler times of the year, but that Penn-cross, Penneagle, Pennlinks and Cobra were similar in color in the summer.

Other grasses entered in the trial were Emerald and Seaside.

Seeding began on October 7, 1985 with a seeding rate of 0.75 lb. seed per 1000 sq. ft.

Mowing height was maintained at 7/32 inch until May 1, 1986 when each plot was subdivided in height of 7/32" and 5/32". ■

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# Management on the Edge

---

by JAMES F. MOORE

Mid-Continent Director, USGA Green Section

“**M**ANAGEMENT on the edge of what?” you ask. Unfortunately, many superintendents are on the edge of failure. A rapidly growing number of superintendents find themselves in situations where they are under excessive stress, in constant fear of losing their jobs, and truly only a step away from failure. On the other hand, a small but growing number of superintendents know their work, and have a great deal of justified confidence in themselves and in their positions.

What are the primary differences between these two groups of individuals?

What do the successful superintendents do differently? Although the answer may be complex, the overriding common ingredient is that these superintendents avoid putting themselves into situations where failure is a greater possibility than success. They are basically sound in turfgrass agronomics and the requirements of golf. At least four agronomic trends in the industry of golf course management have greatly increased the chances of failure.

## **Turfgrass Selection**

In a backward sort of way, the tremendous success of breeders has also

brought about a new set of problems. With improved varieties of nearly every type of grass used on the golf course, there is a growing tendency to ignore the regions of adaptation for each species. Without question these regions have stretched quite a bit, providing greater flexibility in grass selection. Unfortunately, consultants, golf professionals, architects, and even superintendents are convinced you can grow anything you want, anywhere you want, as long as you spend enough money and hire the right superintendent.

One notorious example is the broad-scale planting of bentgrass greens in

climates far better suited to bermudagrass. Certainly those rare clubs with limited play, excellent construction, and large budgets may do just fine. In truth, however, very few clubs have such an ideal set of circumstances. In most instances, the greens end up under severe stress for four to six months of the year. Such greens are obviously susceptible to failure due to pests, weather, and excessive traffic. Minor problems normally become major losses of turf. This failure is almost always attributed to mistakes by the superintendent, and the inevitable parade of one superintendent after another begins.

### Chemical Usage

Just a few years ago, it seemed like the turfgrass industry was losing chemicals faster than new ones were being introduced. Today, it seems like a new chemical is unveiled in a trade journal every month. If you collect all the labels available at a turf conference, you can find claims to solve every turf problem in existence. With so many cure-alls,

you would think *Poa annua*, *Pythium*, and mole crickets would all be on the endangered species list. There is a trend to substitute chemicals for good judgment, good construction, good management, and properly designed and maintained irrigation systems.

Combine excessive chemical use with improper turfgrass selection and superintendents find it necessary to make more and more pesticide applications a year. On these courses, it is only a matter of time until resistant organisms develop or the turf overdoses on the chemicals. Too often it is a combination of the two.

Another trend in the industry that concerns chemicals is the use of recently introduced products in a manner prohibited by the label. All good superintendents should experiment with new products, and often their work leads to changes in the manufacturer's original recommendations. However, such work should be carried out on the nursery and in a controlled manner, not on the greens, where unpredictable results often lead to disaster — and usually a change in superintendents.

### Fertility Practices

The third trend concerns fertility practices. In the interest of putting green speed, nitrogen has been reduced to bare minimums. In our efforts to discourage *Poa annua*, phosphorous fertilization is often completely eliminated. In spite of significant research that indicates the value of potassium, too many greens remain well below recommended levels. There is a tremendous difference between greens that are lean and mean and those that are undernourished to the point that they are unable to carry out vital plant functions, such as photosynthesis.

Such undernourishment often occurs when there has been a significant change in topdressing practices. After prolonged sand topdressing over a soil base, it is common to see major changes in nutrient availability. When the bulk of the plant's roots are confined to a sand zone of very low CEC (cation exchange capacity), fertility practices must be increased accordingly.

*Failure to choose the right turf species places the turf under constant stress much of the year. Failure is likely.*



## Player Demands

A final trend involves the players themselves. Think of how the game has changed in the past 15 years. Many players demand on a daily basis the same type of conditions normally reserved for championship events. Too many self-appointed experts base their assessment of a course strictly on the speed of the greens. These individuals demand greens that measure 10 feet or higher on the Stimpmeter, ignoring the fact that 8½ feet is considered fast for member play. Speed is demanded regardless of the budget, amount of play, climate, or construction of the greens. These same factors that make it difficult to maintain healthy turf at ¼ inch can prove insurmountable at ⅛ inch, and often result in major losses of turf and putting quality. The parade of changing superintendents grows longer.

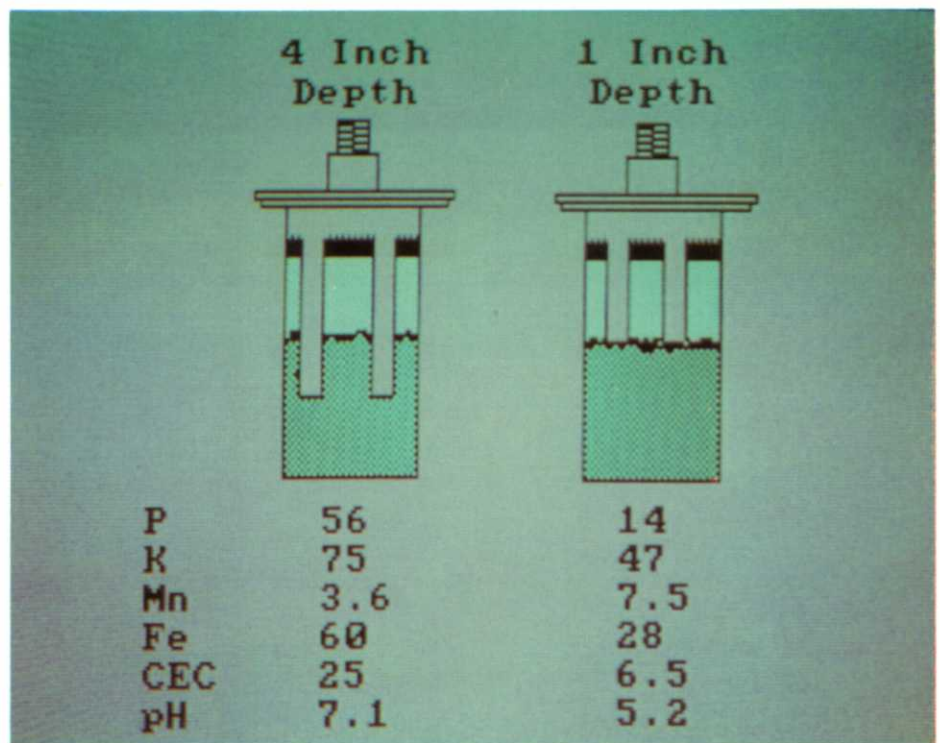
Today, Green Section agronomists seldom see major losses of turf from a single cause. Usually a whole spectrum of events must be recognized and corrected individually. When the four trends discussed above are combined, it is easy to see how the superintendent may be in the high-risk category for failure.

How can a superintendent avoid "Management on the Edge?"

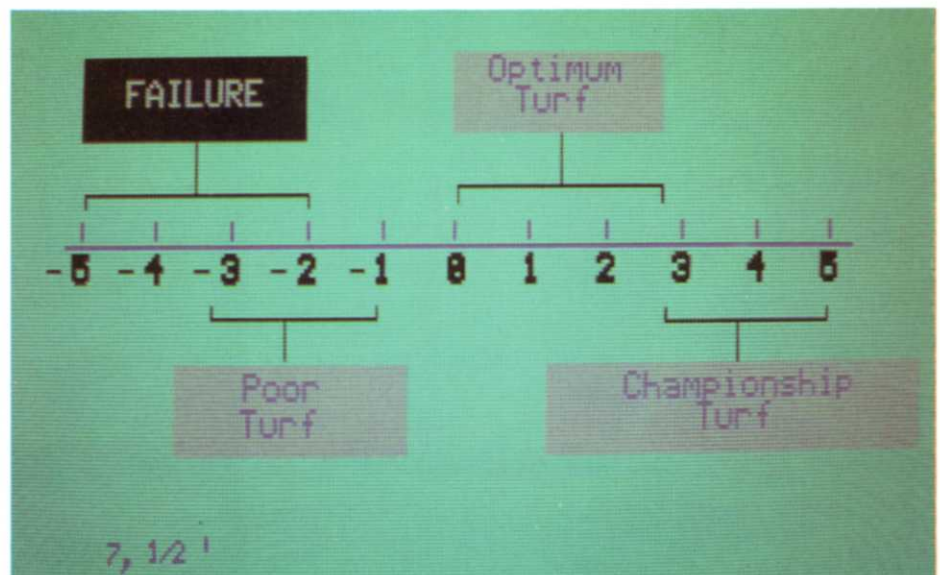
1. Examine and document all the factors that must be considered when choosing a turf for your course. These include the irrigation system, budget limitations, green construction, type of membership, your ability, and, of course, the grasses' zones of adaptation.

2. Avoid looking for chemical solutions to every problem. Although chemicals are some of our most valuable tools and as yet we cannot avoid using them altogether, they are not a substitute for good agronomics. By far the best chemical pest control programs are those that are as simple as possible. Also, far too many superintendents rely strictly on systemic fungicides and fail to include in their spray regime contact fungicides that have proven effective for years. Rotation of pesticides is still a must in any pest control program.

3. Utilize the unbiased services of the Green Section to help you and your membership identify and reach your course's maximum potential. A second opinion is simply good business. The Turf Advisory Service is available to all USGA Member Clubs. See the inside cover of this magazine for the address and phone number of your regional office.



Layered greens brought about by a change in topdressing practices can significantly alter soil fertility.



There is a middle ground between championship conditions and poor turf. Strive for it for daily play.

4. Finally, remember, you are dealing with Nature, and your turf is subject to stresses beyond your control, regardless of your education or the maintenance budget. Attempting to maintain today's championship quality on a daily basis is an invitation to disaster. Select a level of maintenance that provides good playing quality and addresses the agronomic needs of your turf.

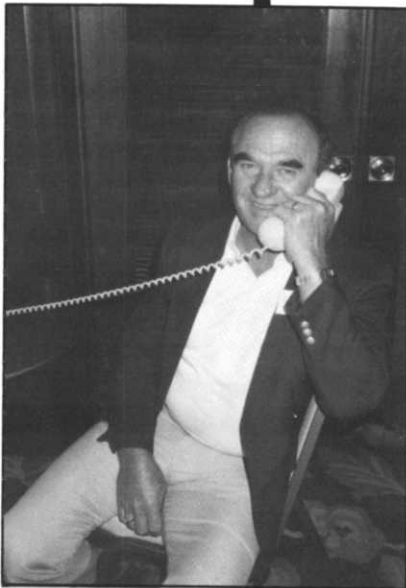
What is the difference between the successful superintendent and the one

who is on the edge? The successful superintendent has found the proper balance between the two powerful and unpredictable forces — the demands of the players and those of the turf. He can shift his efforts to correspond to a temporary increased need by one without abandoning the other, because his programs are consistent and based on sound agronomic principles. He, too, is always on the edge — but of success rather than failure.

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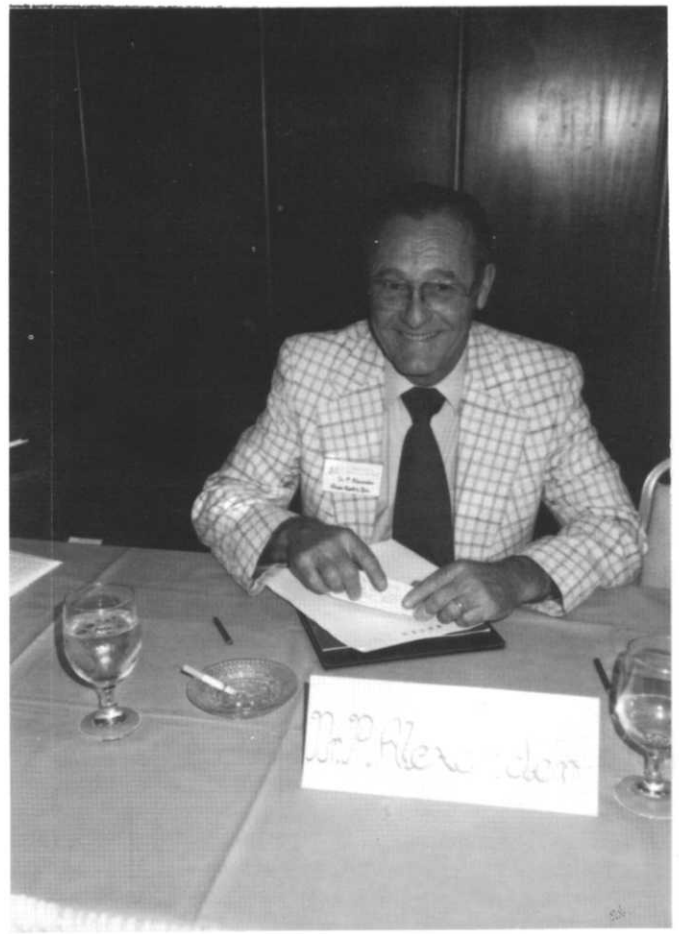


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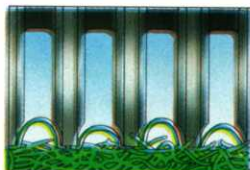
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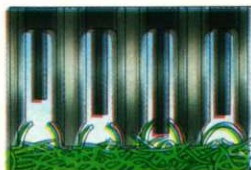
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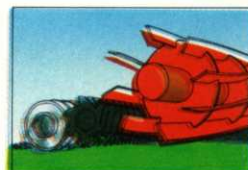


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rotate *through* the slots in the front roller, cutting horizontal runners and removing thatch that can choke a green to death.

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# Bentgrass in Florida

This article is a summary of the "Bentgrass in Florida" seminar which was held in West Palm Beach, Florida on October 8, 1987, at the JDM, Country Club (Mr. Carl McKinney, Superintendent). The seminar was sponsored by the Florida Golf Course Superintendents Association and was coordinated by Mr. Tom Burrows, CGCS, Turtle Creek Country Club, Tequesta, Florida. Dr. Paul M. Alexander, Golf Technology Department, Horry-Georgetown Technical College, Conway, South Carolina, assisted in the development of the Bentgrass survey questionnaire and was responsible for the compilation of responses (see below).

The purpose of the seminar was to provide an open forum for the discussion of the facts and fallacies concerning the use of Bentgrass on Florida golf courses. Moderator for the day long session was Dr. Max Brown, turf consultant. Audience participation along with superintendent panelists and invited guest speakers, was encouraged to insure coverage of the issues at hand. The superintendent panelists and guest speakers included:

## SUPERINTENDENT PANELISTS:

**Buddy Carmouche, CGCS**, has been a golf course superintendent for 15 years and is now superintendent at Hole-In-The-Wall GC, Naples. He has a B.A. in Education from Nichols State University and as A.S. in Golf Operations from Lake City Jr. College.

**Paul Crawford** has been superintendent of Palm Beach CC for the past 8 years. Prior to that he spent two years at Jupiter Hills CC, Jupiter. He holds an A.S. degree in Turf Management from Michigan State University.

**Richard Herr** has been superintendent at Jupiter Hills CC for the past 7 years. Prior to that he was Pro-Superintendent for 15 years at Rolling Hills in Logansport, Indiana.

**John Lapikas** has spent 8 years as superintendent of Annandale CC, Jackson, Mississippi, where he hosted the 1986 USGA Mid-Amateur Tournament. Prior to that,

*(cont. on page 56)*



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(cont. from page 55)

he was superintendent of Lost Tree Club, West Palm Beach, for 3 years. He has an A.S. degree in Turf Management from Penn State University.

Luke Majorki has been superintendent at PGA National GC, Palm Beach Gardens, for the past 5 years after having served 4 years as assistant superintendent there. Prior to that he was Owner/Pro/Superintendent in Decatur, Indiana from 1957-1979.

George Ord, CGCS, has been superintendent of Pipers Landing and Harbour Ridge CC in Stuart since 1981. Prior to 1981, George served as superintendent for private country clubs in the Pennsylvania area for 21 years.

Dick Berbeten is presently superintendent at Isleworth G & C C, Orlando. Prior to that he served as superintendent at three separate clubs in the Wisconsin area. He received his education at the University of Wisconsin.

Tom Werner is presently superintendent at The Loxahatchee Club of Jupiter. Prior to moving to Florida, Tom served as superintendent at Lochinvar GC, Houston, and Colonial CC, Ft. Worth. He holds a B.S. in Agronomy from Texas A&M University.

#### TURFGRASS SPECIALISTS:

Paul Alexander, Ph.D., is presently Professor of Golf Course Technology at Georgetown Tech College, Conway, S.C. He received his B.S. at California State Poly-

technic College, and his M.S. and Ph.D. from Ohio State University. For 10 years Dr. Alexander was a Research Pathologist at Clemson University. He has also held positions with the USGA Greens Section, been Director of Education for the GCSAA, and spent 5 years as Training Director for ChemLawn Corporation, Atlanta.

Warren Bidwell has been a golf course superintendent for 51 years. He spent 33 years as superintendent in the Cincinnati area. He served at the Congressional Club in Washington, D.C., and also the Olympia Fields Club in Chicago. He has hosted several major PGA tournaments and is highly respected for his working knowledge of his profession. Mr. Bidwell currently serves as International Consultant for Tee-2-Green Corporation, Oregon.

Max A. Brown, Ph.D., has a B.S. degree in agronomy from Iowa State University. He earned his Master of Science in turfgrass management and a Ph.D. in soil chemistry from the University of Florida. He was an agronomist for eight years with Robert Trent Jones, Inc. as well as a research chemist for National Fertilizer Development Center, TVA. He was the 1982 recipient of the Florida Turfgrass Association "Wreath of Grass" Award and is now serving as President of that association. He is currently a Consulting Turfgrass Agronomist and President of Liquid Ag Systems, Inc.

Joe Duich, Ph.D., received his B.S., M.S., and Ph.D. from Penn State University. He has been a Professor of Turfgrass Sciences at Penn State since 1967. His research accomplishments include the development of Penn Cross Bent, Penn Eagle and Penn Links Bentgrass, as well as Penn Star Bluegrass, Penn Fine Ryegrass, and Penn Lawn Fescue. He has received the Distinguished Service Award from the Golf Course Superintendents Association of America, the Outstanding Service Award from the USGA Greens Section, the Service Award from Pennsylvania Turfgrass Council, and is listed in Who's Who in the East and Who's Who in Technology Today. He is a Director of the Musser Turfgrass Foundation and received a Fellowship from the American Society of Advanced Sciences.

Robert A. Dunn, Ph.D., has served as extension nematologist for the Institute of Food and Agricultural Sciences for the University of Florida since 1975. Many of his research activities have been directed toward improved diagnosis and management of nematode problems. He earned his Ph.D. from Cornell University.


John Foy has been USGA Greens Section Agronomist for South Florida for the past 2 years. He received his B.S. in Turf Management and his M.S. in Plant Protection and Pest Management from UGA. He spent 3 years in private industry field research and development.

T.E. Freeman, Ph.D., is professor of Plant Pathology at the University of Florida. He joined the institution after receiving his Ph.D. degree from Louisiana State University in 1956. Most of his professional career has been spent studying the cause, factors affecting occurrence, and control of disease affecting grasses in the southern United States. He is the 1985 recipient of the Florida Turfgrass Association "Wreath of Grass" Award and is

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presently serving as coordinator of the turf research program at the University of Florida.

**Monica Juhnke, Ph.D.**, is an Assistant Professor of Plant Pathology for IFAS for the University of Florida in the Ft. Lauderdale Research and Education Center. Her research interests include the development of biological control agents via bacterial colonizers of grass roots. She received her M.S. and Ph.D. from Montana State University.

**Jeff Krans, Ph.D.**, has been teaching Turfgrass Management at Mississippi State University for the past 15 years. He earned his Ph.D. from Michigan State University. His current research is on plant breeding activity in heat tolerance of creeping bentgrass.

**Charles Peacock, Ph.D.**, is currently Associate Professor of Turfgrass Science at North Carolina State University. His research interests are in the area of turf nutrition and stress physiology. Prior to moving to North Carolina, he was Senior Agronomist with Nutri-Turf, Inc., and Associate Professor in the Ornamental Horticulture Department at the University of Florida for 5 years. He has published over 130 research and popular articles on turfgrass management and given over 140 presentations at workshops, seminars, and short courses.

**J.M. Vargas, Jr., Ph.D.**, has been a Professor of Botany and Plant Pathology at Michigan State University for the past 19 years. He has published over 150 articles on turfgrass diseases and related subjects. His research accomplishments include the discovery of the first bac-

terial disease of turf, the first resistance to turfgrass fungicides, and the cause of the black layer.

**Charles "Bud" White** is currently an Agronomist with Lesco, Inc. Prior to that he served the USGA for 8 years as Manager of the entire Southeastern United States area including Florida. He received his B.S. from Tennessee Tech and his M.S. in Turf Management from Clemson. He is a Certified Professional Agronomist.

\*

Following his introductory remarks, Mr. Burrows announced the attendance figure of 107 persons which included 70 superintendents, 8 club officials, 9 technical/sales representatives, 15 turf specialists, and 5 press/staff personnel. GCSAA certified superintendents received credit for attending this seminar.

**Moderator Brown:** Dr. Alexander will now present the results of the Bentgrass survey questionnaire. (75 had been mailed and 40 responses were received and compiled).

**Question #1** — In which month do you oversee Bermuda greens with Bentgrass? Ranged from September to January (if split applications included); for non-split applications (17 total), months were:

September	-	1 ( 4.5%)	
October	-	11 (50.0%)	> 90.9%
November	-	9 (40.9%)	
December	-	1 ( 4.5%)	

(cont. on page 58)

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(cont. from page 57)

**Question #2 - Do you split overseeding applications?**

Yes	- 22 (55.0%)	Months of application:
No	- 17 (42.5%)	Earliest - September
All Bent	- 1 (2.5%)	Latest - January

**Types of Splits (1 person stated 3 or 4)**

2 applications	- 13 (56.5%)	Ranged from 1½ + 1½ to
3 applications	- 7 (30.4%)	3 + 3 + 4 to
4 applications	- 3 (13.0%)	2 + 2 + 2 + 2

**Non-Split Rates**

3 lbs.	- 3 (17.6%)	Earliest - September
5 lbs.	- 3 (29.4%)	Latest - December
5¾ lbs.	- 1 (5.9%)	
6 lbs.	- 1 (5.9%)	
7 lbs.	- 1 (5.9%)	
8 lbs.	- 1 (5.9%)	
10 lbs.	- 1 (5.9%)	
3 to 4 lbs.	- 1 (5.9%)	
3 to 5 lbs.	- 1 (5.9%)	
4 to 5 lbs.	- 1 (5.9%)	
4 to 6 lbs.	- 1 (5.9%)	

**Question #3 - Procedures used in overseeding?**

Vertical Mowing (1 to 7 times)	- 34 (27.6%)
Reduce Nitrogen	- 24 (19.5%)
Topdress (1 to 3 times)	- 21 (17.1%)
Scalp with Mower	- 12 (9.8%)

Apply Fungicides	- 10 (8.1%)
Spike (1 to 4 times)	- 6 (4.9%)
Brush, Mat or Drag	- 5 (4.1%)
Fertilize (High P and/or K)	- 4 (3.2%)
Aerify	- 4 (3.2%)
Apply Herbicide	- 1 (0.8%)
Apply Insecticide	- 1 (0.8%)
Apply Nematicide	- 1 (0.8%)

**Question #4 — Mowing height/frequency?**

Cool Weather	Summer Months
Height Range - 3/8" down to 3/32"	5/16" down to 1/8"
Frequency - 6 to 7 days/week	6 to 7 days/week

Several respondents mentioned that walk mowing was done during peak play periods and/or during times of turf stress (cold/heat/drought). In addition, use of daily clean-up cut around perimeter of green was restricted to good growing conditions only.

**Question #5 — Major problems with Bentgrass?**

Competition from Bermudagrass	- 13 (11.8%)
Slow/Poor Establishment of Bent	- 11 (10.0%)
Pythium/Other Diseases	- 10 (9.1%)
Poor/Restricted/No Drainage	- 10 (9.1%)
High Fall Temperatures	- 9 (8.2%)
Wilt/Syringing Needs	- 9 (8.2%)
High Summer Temperature	- 8 (7.3%)
Poor Transition in Fall, Spring	- 8 (7.3%)
Traffic Wear/Ball Marks	- 7 (6.4%)
Labor/Chemical Costs	- 5 (4.6%)
Member Demands/Education	- 4 (3.6%)
Slow Healing of Damage	- 3 (2.7%)
Lack of Sleep/Supt. Stress	- 3 (2.7%)
Small Greens	- 2 (1.8%)
Loss of Bent	- 2 (1.8%)
Percolation Rate too High	- 2 (1.8%)
Humidity/Drought Stress	- 2 (1.8%)
Poor Crew Morale	- 1 (0.9%)
Bentgrass Not Adapted to Fla.	- 1 (0.9%)

**Question #6 — Do you close your course during overseeding?**


Yes	- 30 (75.0%)
No	- 7 (17.5%)
Not Stated	- 3 (7.5%)

**For how long?**

1 Day	- 15 (50.0%)	9 Days	- 1 (3.3%)
2 Days	- 4 (13.3%)	10 Days	- 1 (3.3%)
3 Days	- 2 (6.7%)	14 Days	- 3 (10.0%)
5 Days	- 1 (3.3%)	30 Days	- 1 (3.3%)
7 Days	- 2 (6.7%)		

**Question #7 — Number of rounds per year?**

Up to 10,000	- 4 (10.0%)
10,001 - 20,000	- 4 (10.0%)
20,001 - 30,000	- 11 (27.5%)
30,001 - 40,000	- 6 (15.0%)



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40,001 - 50,000	-	4	(10.0%)
50,000 +	-	2	( 5.0%)
Not Stated	-	8	(20.0%)
"Too Many"	-	1	( 2.55)

**Question #8 — Who made decision to use Bentgrass?**

Superintendent	-	16	(40.0%)
Club Officials	-	10	(25.0%)
Owner(s)	-	6	(15.0%)
Joint Decision	-	5	(12.5%)
Developer	-	1	( 2.5%)
LPGA	-	1	( 2.5%)
Not Stated	-	1	( 2.5%)

**Question #9 — Is there an alternative to Bentgrass? (Multiple Answers)**

Do Not Overseed	-	11	(25.0%)
Cool-Season Mixture	-	8	(18.2%)
Rye/Rye Only Mixes	-	7	(15.9%)
No Alternative	-	7	(15.9%)
Not Stated	-	6	(13.6%)
Install USGA Greens	-	2	( 4.5%)
Heat/Humidity Tolerant Bent	-	2	( 4.5%)
Educate Members	-	1	( 2.3%)

**Question #10 — Would you continue use of Bentgrass at your course?**

Yes	-	28	(66.7%)
No	-	10	(23.8%)
Not Stated	-	3	( 7.1%)
Only in Mix	-	1	( 2.4%)

**Additional Comments by Respondents**

1. If Bent meant for Florida, would snow every winter.
2. I don't mess with Bent after mid-May/early June.
3. Golfers should adjust to course — *not vice versa*.
4. Use Bent in Fall/Winter/Spring *only* Bermuda in summer.
5. South Florida needs a cold hardy Bermuda.
6. *Must* have good drainage and large greens for Bent.
7. Drainage is key to holding Bent in Summer.
8. Bermuda is badly damaged by holding Bent in June/July/August.
9. There is *no* acceptable alternative to Bent.
10. Costs too much to maintain Bent all year.
11. Use a Bent/Sabre mixture on Bermuda greens.
12. Wish the Bentgrass "syndrome" had never started; too many players comparing courses without know-

ledge of budgets, manpower, drainage, etc.

13. I may not overseed with bent in future.
14. Use Bentgrass *only* if members/management understand problems.
15. Bentgrass results do *not* justify inconvenience/expense.

**IF BENT MEANT FOR FLORIDA — IT WOULD SNOW EVERY YEAR. BENTGRASS RESULTS DO NOT JUSTIFY INCONVENIENCE/EXPENSE.**

**Moderator Brown:** Now we know what everyone out here thinks. We have three ways that Bentgrass is handled: (1) Overseeding of Bermudagrass greens with Bentgrass just for winter play which is the typical way it has been done, (2) Holding Bentgrass through the summer, and (3) 100% Bentgrass greens for all year round play in Florida. We have a panel of experts up here and we are going to hear from each of these superintendents giving them 5 minutes apiece.

We are going to start with "Overseeding of Bermudagrass greens with Bentgrass for winter play" and we will be hearing from 3 people who do this. We are starting (cont. on page 60)

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(cont. from page 59)

with Buddy Carmouche, Hole-in-the-Wall Club in Naples.

**Mr. Carmouche (Summary):** Has been overseeding with Bentgrass/Sabre combination for 7 years at 3 different courses. Success rate has been good, except for 2 years because of weather factors. At Hole-in-the-Wall, greens are small and play is slight during the winter. Found best overseeding time to be around Thanksgiving week and does not use split overseeding. Feels that it is cheaper to maintain Bentgrass because of reduced nitrogen levels and less watering once the Bentgrass is established. Firmly believes in hand watering of Bentgrass greens rather than relying on the irrigation system. All greens are hand mowed on a year round basis.

**Moderator Brown:** Our next speaker on the same subject is Paul Crawford from Palm Beach Country Club.

**Mr. Crawford (Summary):** Thinks that Bentgrass provides the best winter putting surface and his course has been using Bentgrass for the past 13 years. Overseeds with straight Bentgrass in early November at 3 to 4 pounds per 1,000 square feet (applied in two directions) and ensures good seed-to-soil contact with topdressing. Reduces nitrogen rate 30 days prior to overseeding to reduce competition from Bermuda. Vertical mows from 1 to 5 times, but no longer scalps with mowers. Forces Bentgrass out in April or May and maintains the Bermudagrass during the heat of the summer (very little play on his course during this time).

**Moderator Brown:** Our last speaker on the same subject is George Ord from Harbour Ridge in Stuart.

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**Mr. Ord (Summary):** Has been overseeding with Penn-cross Bentgrass since 1984 and feels that it provides the best possible winter putting surface at this point in time. Preparation includes: (1) No fertilization one month prior to seeding; (2) vertical mowing is done just prior to seeding; (3) uses Bentgrass at 2 pounds per 1,000 square feet, then topdresses and mats in with a carpet-covered mat. Preventive fungicides are used after germination and throughout the season. Three to four weeks, the process is repeated, except that vertical mowing is eliminated. Although basically pleased with result, feels that slow growing-in period (about 2 months) is a drawback. Stated that he believes research is necessary to improve the overall situation and that superintendents need to support such research efforts.

**FIRMLY BELIEVES IN HAND WATERING OF BENTGRASS GREENS RATHER THAN RELYING ON THE IRRIGATION SYSTEM. ALL GREENS ARE HAND MOWED ON A YEAR ROUND BASIS: Buddy Carmouche.**

**Moderator Brown:** Now we proceed to the next area of interest which is "Holding the overseeded Bent through the summer months." You can have Bent for 12 months with a Bermudagrass base under it. We have a couple of men with loads of experience in this area, and our first one is Richard Herr, of Jupiter Hills CC.

**Mr. Herr (Summary):** In spite of 95-100°F weather in 1987, feels that his Penn-cross Bentgrass held up well and that he may not have to re-seed this fall. Admitted to both mental and physical strain during the summer stress period, but feels that the effort was worthwhile. Stressed the point that much more support from Florida universities is badly needed. He relied on information from other universities. One of his two courses — The Village — has not had to be re-seeded for 3 years, but the Hills Course is done every fall after heavy vertical mowing.

**STRESSED THE POINT THAT MUCH MORE SUPPORT FROM FLORIDA UNIVERSITIES IS BADLY NEEDED: Richard Herr.**

**Moderator Brown:** Thank you, Dick. These two people — Dick and Luke — for those of you who may have been out of state, out of the country, or slept through the summer — had two major tournaments at their two golf courses during this difficult summer. Both golf courses had a good amount of Bentgrass on the greens. So, our next speaker is Luke Majorki of PGA National GC.

**Mr. Majorki (Summary):** Does not feel that Tifgreen (328) Bermuda supports the ball well enough on putting surfaces for tournament play. Since he hosts about 1200-1400 golf professionals on his 4 courses during January and February of each year, the decision was made to hold the Bentgrass all year long — at least in the range of 30 to 40 percent. By doing so, he feels that he has a "head start" on having good Bentgrass greens for his tournament season which usually starts in November. Also

(cont. on page 61)

(cont. from page 60)

stated that he would have been more comfortable with Tidwarf Bermuda (with respect to maintaining Bentgrass in the summer), but the cost of renovating the greens on 4 golf courses precluded this.

**Moderator Brown:** Our first speaker on the next subject, "100% Bentgrass greens for year round play," is Dick Verbeten, Isleworth CC, Orlando.

**Mr. Verbeten (Summary):** Stated that maintaining 100% Bentgrass greens on a year round basis in Central Florida is not only stressful to the superintendent but is stressful to the superintendent's married life. Without an absolutely reliable and dedicated assistant superintendent, the situation could become extremely difficult. Throughout the summer months, daily readings of soil temperature at a 2" depth were taken on both nursery and playing greens; this revealed soil temperatures as high as 104°F. Whether heat or humidity is responsible for weakened greens has not yet been determined at his course. (At this point, Mr. Verbeten urged the audience to read an article in the July, 1987 issue of the U.S.G.A. Greens Section Record entitled "Management on the Edge"). He feels that this article described his particular situation.

**Moderator Brown:** It is interesting to note here that Dick's golf course was built by Arnold Palmer and our next speaker's golf course was built by Jack Nicklaus, who is also pretty influential. Our next speaker is Tom Werner, Loxahatchee Club, Jupiter, Florida.

**Mr. Werner (Summary):** His course was built in the early 80's and the greens were seeded to Penncross Bent in the fall of 1984. They contain 70% sand and 30% peatmoss and drain very poorly. However, proximity to the ocean provides good air movement and rate of play, at present, is low. In spite of this, it is a constant task to maintain good playability of turf. Utilizes an extensive preventive fungicide program and firmly believes in hand watering, but still experiences disease problems. Major problem being faced now is the encroachment of Bermudagrass into the greens — up to 6 feet in some instances. His crew is well trained and this certainly helps during the difficult times.

**RATE OF PLAY, AT PRESENT, IS LOW. IN SPITE OF THIS, IT IS A CONSTANT TASK TO MAINTAIN GOOD PLAYABILITY OF TURF!**

**Tom Werner**

**Moderator Brown:** Our last speaker on this subject, John Lapikas, was superintendent for several years at Lost Tree in Palm Beach and is now at Annandale CC in Mississippi.

**Mr. Lapikas (Summary):** His course is "land-locked" and, as such, experiences high humidity and both high day and night temperatures. The greatest stress period extends from early June through the end of September.

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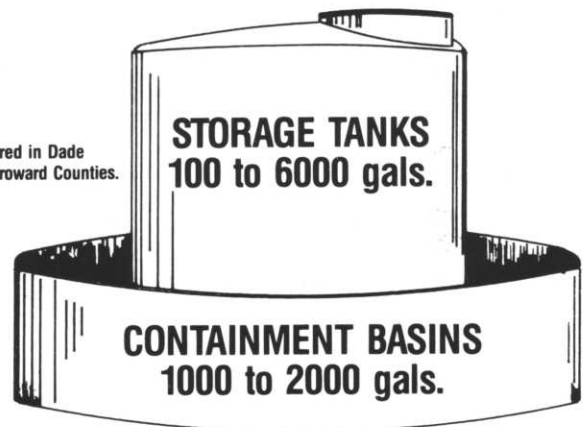
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(cont. from page 61)

During June-August, wind movement averages about 3-5 miles per hour, so stagnant, humid air can be a real problem on low-lying greens. Practices night time hand watering in an attempt to reduce soil temperatures (in the high 90's-low 100's). Night watering also helps the turf to recover from ball marks and other traffic injuries. Greens were built to USGA specifications and they drain well except during the high humidity periods in summer.

**Moderator Brown:** John, who was the impetus behind using Bentgrass on your golf course? Who designed it?

**Mr. Lapikas:** It was designed by Jack Nicklaus and the reason for Bent was that most of the courses in our area overseed in October and hold their overseeding till June. When they lose their overseeding in June, most of the Bermudagrass was gone too. So they only had one month with Bermudagrass and then they were tearing them up for overseeding again. So that was the reason that we went to 100% Bentgrass.

**Moderator Brown:** We had a few people here who were invited to be here but have sent material to be presented here since they could not attend.

First of all, Fred Klauk, who was superintendent for quite a few years at Pine Tree in Boynton Beach (overseeded with Bent). Then he went to TPC at Eagletrace for 3 years and overseeded there. Now he is at TPC in Jacksonville Beach where his Stadium Course is 100% Bentgrass on the greens. Here are Fred's comments: He has had a difficult summer. He averaged between 100 and 150 players a day. His is a resort golf course and it gets a lot of attention. Many people want to play the Stadium Golf Course through July, August, and the first part of September where it is very hot. He had a lot of trouble with the Bentgrass recovering from foot traffic and ball marks, so he feels he had poor putting greens through the hot summer because he couldn't keep the surface smooth. He didn't have disease problems except when it became overcast or rained. When it was sunny and dry, he used a preventive program but when it rained, brown patch became a serious problem. He says that on the Stadium Golf Course they are going back to Tifdwarf over the next two years and will overseed with a Bent mixture. He is concerned that with that much play and

the conditions he has there, it is too expensive to keep the Bent and that conditions in the summer make the Bent unsatisfactory.

Another comment is a letter from Dr. Al Dudeck, University of Florida, to Tom Burrows. Dr. Dudeck was invited to be on the panel here but couldn't attend because of teaching responsibilities, so I'll read his letter:

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**MOST TURFGRASS SPECIALISTS WHO HAVE BEEN WELL SCHOOLED IN THE CLIMATIC ZONES OF TURFGRASS ADAPTATION KNOW THAT BENTGRASS IS NOT ADAPTED TO FLORIDA:**  
**Dr. Al Dudeck, U of F.**

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"Regrettably, I am unable to attend the 8 October meeting because of teaching commitments. Let me take this opportunity, however, to share my concerns about the continuing interest in attempting to grow Bentgrass year round in Florida. Most turfgrass specialists who have been well schooled in the climatic zones of turfgrass adaptation know that bentgrass, as a cool season turfgrass, is adapted to the cool, humid regions of the world — not to Florida. Florida is bermudagrass territory. We can grow bentgrass in the warm, arid regions of the Southwest, but only because of the lack of humidity and associated disease problems due to limited natural precipitation. Bentgrass can and should be used in Florida, but only for overseeding during the winter months. To attempt to grow it year round, and in pure stands, is sheer folly. It will jeopardize the golf course superintendent's professional status because it will bring about much closer scrutiny from various environmental groups and Florida's water management districts. Can we afford to lose any more pesticides due to indiscriminate use? The well-drained rootzones which are required for bentgrass will bring about increased leaching of nutrients and pesticides into Florida's shallow ground water table. Increased water needs for frequent syringing places greater demands on an already limited water supply. Although money may be no object on many of Florida's golf courses, the increased use of fungicides for disease control on bentgrass greens should be reason alone for abandoning such a practice.

(cont. on page 63)

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*"Keeping Golf Courses Green"*

(cont. from page 62)

Has your membership read and do they thoroughly understand Mr. Moore's fine article which you enclosed, "Management on the Edge," USGA Green Section Record 25(4):1-3? If not, the parade of superintendents will continue along with increased restrictions on water and pesticide use. The University of Florida does not recommend bentgrass for year round use in Florida."

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## THE DEMAND FOR QUALITY PUTTING SURFACES IS THERE AND WE ARE THE PEOPLE WHO HAVE TO SATISFY IT.

**Dr. Max Brown, Consultant**

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**Moderator Brown:** I have another superintendent who has been asked to give a short presentation. He used Bentgrass for several years and last year he used another type of grass. So here is Kevin Downing, Mariner Sands CC, Stuart, to tell us what his approach has been.

**Mr. Downing (Summary):** For 4 or 5 years, he used a Bentgrass/Sabre mixture which was satisfactory under light play. However, as play increased to about 250 rounds per day (January through mid-April), problems arose. While visiting in Palm Springs, California, he noticed the quality of the ryegrass mixture putting surfaces and decided to investigate further. These greens were very consistent, had good color and produced about 9 feet of roll as measured with a stimpmeter. In the fall of 1986, he seeded all greens with rye (variety not given) at 23 to 27 pounds and Sabre at 3 to 4 pounds per square feet. He plans to use Sabre at 5 pounds in 1987. The spring (1987) transition from cool season to Bermuda was extremely smooth and he stated that most players did not know whether they were playing on winter grass or Bermuda. Finally, putting speeds were better than anticipated and players were pleased.

**Moderator Brown:** Thank you Kevin. This is just a story with a different perspective on the same problem that we are looking at. I think you can see that we are in the business of trying to satisfy people who play a game.

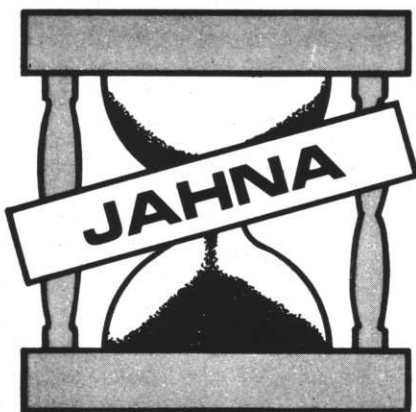
The needs are different at each club — what works at one golf course — because of the people that play there, the area that it is in, the number of rounds — does not work at another. We have to keep these things in mind. Hopefully we will be able to, throughout the day, isolate these points, mark them down, keep them in our heads and be able to use them as we go on.

As we go into the Panel Discussion — we have quite a selection of experts here — we want to get all of the information from these panelists that we can. I have got a question here and it is based on the fact that we are in a warm season, humid, adaptation area and we are talking about growing a cool season turfgrass in this area. The question is, "What's the difference between a cool season and a warm season grass? This is just a basic question and I would like to get a few people to comment on this.

**Dr. Krans (Summary):** Optimum growth for Bentgrass occurs at 60 to 70°F (soil depth from 1 to 4 inches); for Bermuda, optimum is 80-95°F. For root growth, optimum is 50-65°F for Bentgrass and 75-95°F for Bermuda. Another important set of figures is that concerning soil temperatures required for 4 to 6 weeks to cause a 50% loss of roots; for Bentgrass, it is 75-77°F; for Bermuda, it is 75-95°F. These temperatures generally relate to stressing of the grasses, but what does it take to kill the total plant? If Bentgrass is held at 120°F for 20 minutes, the plant dies as cells lose their integrity; for Bermuda, this temperature is 150°F. Thus, Bermuda is seen to be better adapted to higher temperatures than is Bentgrass. Dr. Krans feels that there is no difference between high temperature tolerance and high humidity tolerance. A grass plant is always hotter than the surrounding air temperature; the only way it cools itself is through transpiration (evaporation of water). Therefore, if the surrounding air is very humid, transpiration will be reduced and the plant will heat up — perhaps to the point where it will die.

**Moderator Brown:** Thank you, Dr. Krans. Is there anyone else on the panel with a comment on this?

**Dr. Duich (Summary):** This treadmill we are on is very interesting. Growing Bent in Florida or anywhere else is very controversial. Why do it? Simply because we always  
(cont. on page 64)



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(cont. from page 63)

want to do something better. It is fortunate that plants can not read — especially bentgrass. The academic world said it was absolutely impossible to grow Bentgrass in Arizona. Fortunately, Bentgrass did not listen and golf course superintendents did not listen.

To what extent should we be growing Bent? It's up to the people paying the bills! I don't think the superintendent should decide whether something is too expensive. That should be left to the people who are going to pay the bills.

There is one key factor in growing Bentgrass and that relates strictly to water. One of the things we have already proved is that there is no mechanical engineer, no irrigation engineer able to get an irrigation system where you can grow Bent on a putting green. So, if people are going to manage Bent, it must be hand watered.

Why is water so important? All of the figures I have ever seen by physiologists and all the factors that have been put down seem to forget the one most important factor — the solubility of oxygen is inversely proportional to the temperature. When we increase the temperature, the solubility of oxygen decreases. Water without oxygen is worthless. We need to learn how to grow grass with less water and less fertilizer. Everything relates to the insolubility of oxygen.

There are people growing Bent in areas where the book says you shouldn't be able to grow it. The key — on a practical basis — is that you have to eliminate thatch. Thatch retains quite a bit of water when you wet it. When the sun comes out it doesn't heat the soil 6" down and work backwards, it heats the surface.

There are a lot of people who do not know how little water you have to put on Bent. Where we get boxed in is the point that Dr. Krans brought out concerning transpi-

ration. We have to have effective cooling — but the water has to be efficient water. The key is we have always killed more grass *with* water than we have with *not enough* water.

Superintendents out in the southwest have it made. They have proved that they can grow Bent in temperatures higher than researchers say it can be done. But they do not have the humidity factor so that makes their cooling system work.

Humidity and uncontrolled water is the key — the uncontrolled water happens to be man applying it.

**Moderator Brown:** That's certainly very interesting. We are stirring up the pot here and maybe someone else wants to get into this.

**Mr. Bidwell (Summary):** Well, we must go back to 1934. The state is Cincinnati, Ohio, the month of August, the temperature is 109°F. How did we survive? We didn't have Penncross or the other cultivars of Bentgrass we have today. The only way we survived was because we felt sorry for the Bent. So we went out and syringed. That was a lesson in survival.

The golfing membership in Florida consists of a very high percentage of northern golfers who have been raised on Bent. They are going to demand it at almost any cost. You won't get away with trying to go back to Bermudagrass for a year round putting surface. The Yankees who love Bent are going to get their way. You will have to survive until the researchers can come up with a better type of Bent for your climate.

**Moderator Brown:** Did that get your attention? It is a relatively good area to cover completely. But we have other areas to talk about, other stresses and diseases, water management, etc. Does anyone else have something to say about plant physiology?

**Dr. Alexander (Summary):** I probably couldn't agree more with the three preceding gentlemen. But we are dealing with pure physiology of plants and I think it goes beyond that. Anytime that a grass plant — be it Bentgrass or Bermudagrass — is adversely affected, then the problems really start to snowball. It taxes the knowledge and capability of every superintendent sitting in this room. I don't think we can separate water, temperature or humidity in any way. They all have to be considered simultaneously — not individually.

**Dr. Peacock (Summary):** As to what Dr. Krans said about basic limitations of the plant, that is only the first step. Under your conditions, no one can make the decision for you knowing exactly what the situation is for your own particular golf course.

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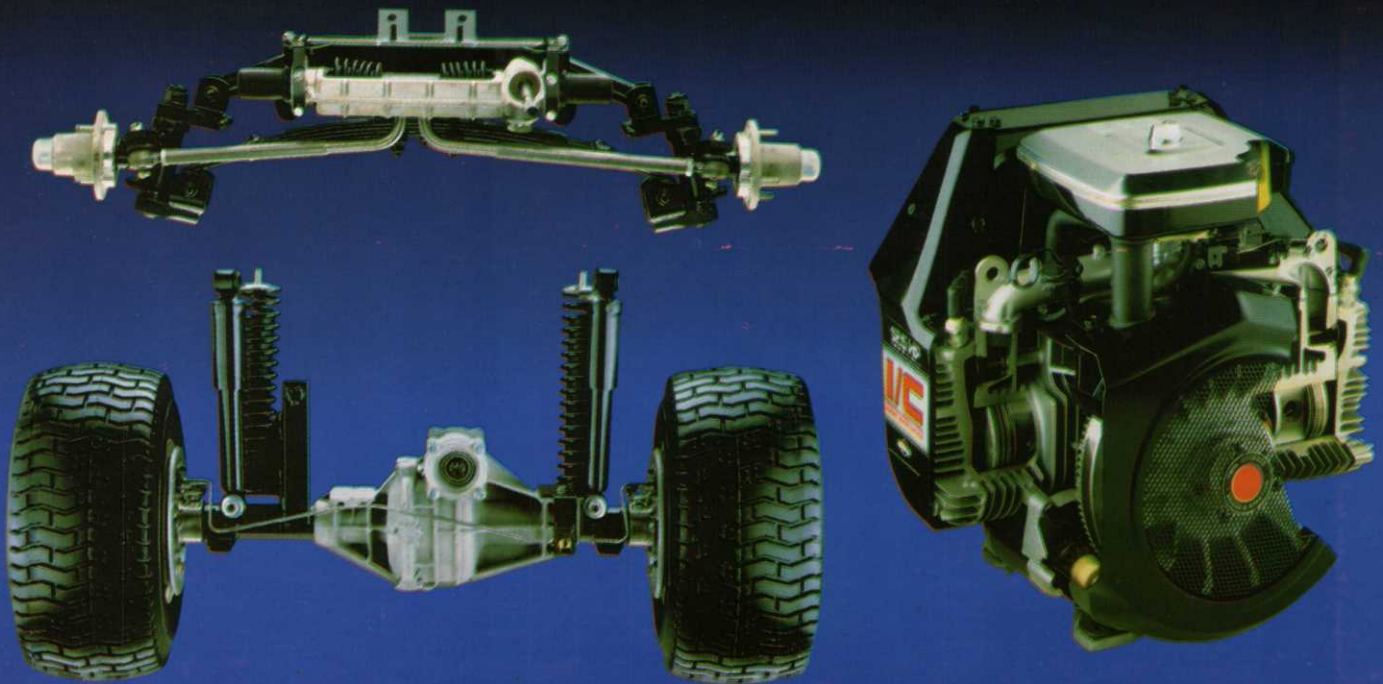
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(cont. from page 64)

**Moderator Brown:** Dr. Dunn, our Nematologist, has to leave right after lunch so I am going to have him give some comments on nematodes and Bentgrass.

**Dr. Dunn (Summary):** I think this ties in with the physiological factors these gentlemen have been talking about. As you may imagine, there is very little literature on nematodes and Bent. But for the most part nematode activity has been worse in the south on the sandy soils of the Coastal Plain. The same nematodes that affect Bent in the north affect Bentgrass in the south — plus we have a couple additional ones in the south! Those of you who have been growing grasses know about the stubby root and spiral nematodes, etc. They have all been reported from Bent users and are probably prevalent in the north. The most damaging nematode in North Carolina are sting nematodes. If you are trying to grow Bent in high soil temperatures, a natural physiological degradation in the root system occurs when you get above 75 or 77°F. Therefore, the root system of that grass is naturally deteriorating as the temperature is going up. The nematode population goes up also as you go up into the 70's and the optimum for nematodes is the mid-80's.

I don't know whether you are going to be able to manage it chemically or not. There is a very serious problem with "mocap" on Bent. There is a specific problem that comes about 6 days after application that will make you wish you had not done it. Nema-cur can be used but I would much rather see you manage the soil and the growing conditions so that the plant wouldn't need a lot of chemical help to withstand nematode activity.

**Moderator Brown:** I think it is clear to most of us that the prevailing thought is that the demand is there for this finer quality putting surface offered by Bentgrass. We are either going to have to learn how to grow the existing Bentgrass or we will have to grow another type of Bent or have some other grasses to replace the ones now being used. The demand is there and we are the people who have to satisfy it.

**Mr. Bidwell:** I don't know how much involvement your state university system has in Bentgrass culture, but I say to you, if you don't have university support, get it. Stamp your feet, go to your Representative or any method that you think might be successful. Golf and recreation is a big monetary part of Florida's economy. You need university support.

**Moderator Brown:** We have good associations in place in Florida — the Florida Golf Course Superintendents Association with its nine local chapters, and the Florida Turfgrass Association — are two very strong, very influential organizations. We can't do it alone but as a group we can get the attention of the legislature to fund these projects.

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**THIS TREADMILL WE ARE ON IS VERY INTERESTING. GROWING BENT IN FLORIDA OR ANYWHERE ELSE IS VERY CONTROVERSIAL: Dr. Joe Duich, P.S.**

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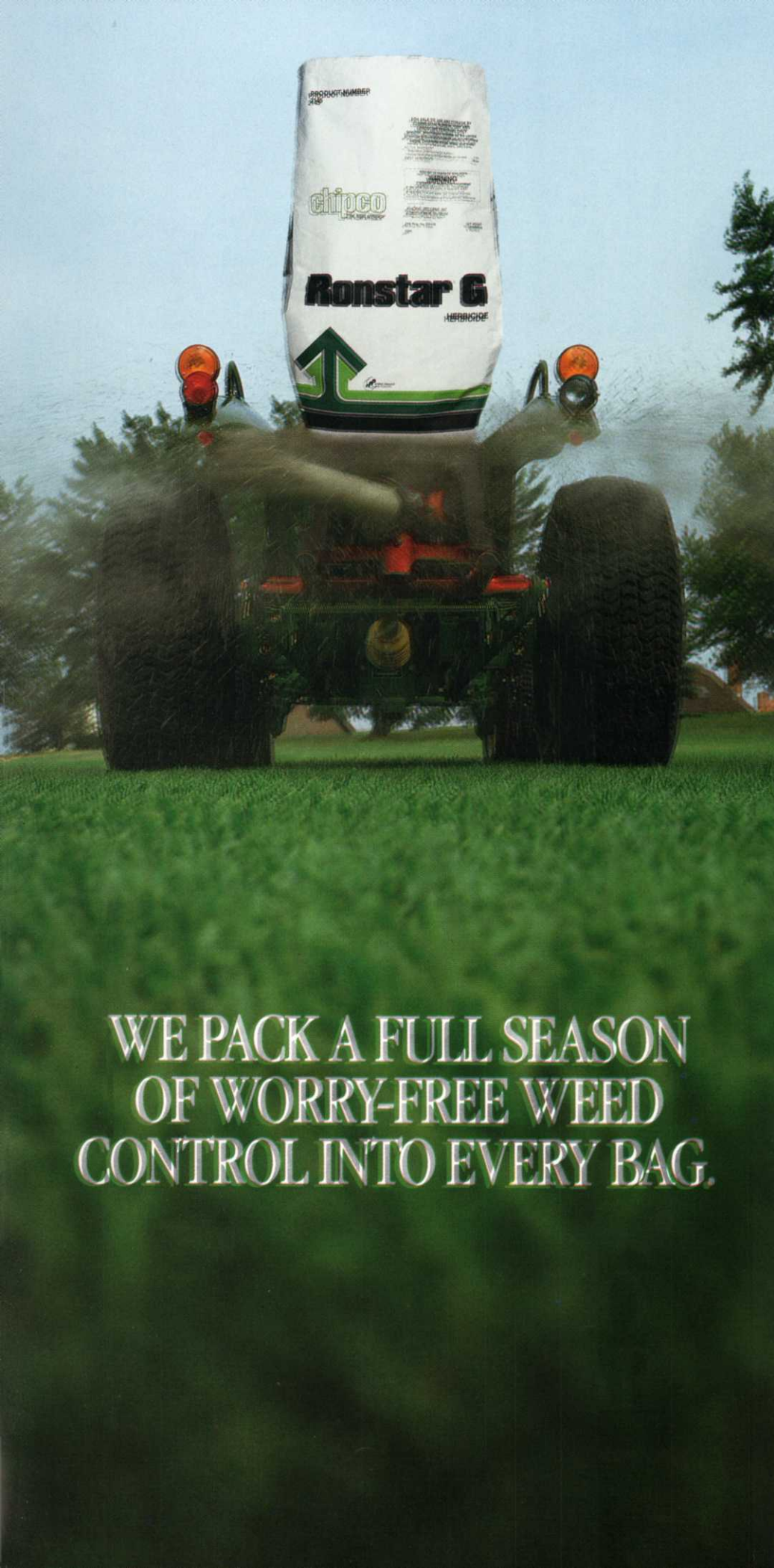
**Dr. Freeman (Summary):** Both what Mr. Bidwell and Dick Herr said earlier referring to the lack of research is specific to Florida. However, there is a lot of information available. What you can't extrapolate is the monies spent on research for something like Bentgrass. You can't turn the universities around in a short time. For most research projects to work, you are looking at least 3 to 5 years work before you really have something you can go on. So what Warren said is well founded. You need some people who have expertise in a given area. Again, you can get help from the university, but turning the results around in a short time is not practical.

**Dr. Peacock:** I might add to that if you stop and think back, this is not a long time situation that has been growing over a long period of time. This is a relatively new area. That is another consideration when you question the lack of Bentgrass research in Florida. The need wasn't there then, but now that the need is here, you need to get a response.

**Moderator Brown:** That comes from a researcher and a teacher from North Carolina State, not from the University of Florida.

We have found that grass wants to live and grow and that we have to help it grow. In order to have healthy grass, we must help it to maintain self-continuity so it will look

(cont. on page 68)



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(cont. from page 66)

good and play well.

Grasses under heat stress produce a breakdown in cell continuity thereby inducing stress and this is the area that we want to discuss at this time. One of the stresses that Bentgrass undergoes and one of the major problems is heat stress which increases the stresses of fungi and other pests. We have several scientists on our panel and I want to get some of their comments.

**Dr. Vargas (Summary):** A golf course superintendent trying to grow Bentgrass in Florida presents an *impossible* situation. Anytime you take a grass and put it to the limits of its environmental adaptations, stress will occur and you will have problems. I hear people talking about Brown Patch and Pythium. I think those are the *early* diseases that you see when you try to grow Bent year round, but the really serious ones have not come in yet. When you let that Bent grow all year long, that is when you are going to have some really serious root problems. Some earlier speakers didn't say how much was spent on fungicides for things like Pythium and Brown Patch. However, when you get into root organism problems, you are talking three, four and five times as much for fungicides for control. Dr. Dunn talked about nematodes. We have seen problems with nematodes up north, but I can't imagine the degree that must be here. One nematode species not yet mentioned is the root knot nematode. It gets into the root itself, causing it to swell and results in poor uptake of water. We are starting to see it in sand culture greens in Tennessee and Kentucky. This is a definite possibility in Florida.

I would like to make a comment on something Warren Bidwell said. He mentioned you would have to get used to growing Bentgrass for the Yankees in the summer. Well, I am a Yankee and like to come down to Florida in the fall, winter and spring. But like most Yankees, I am smart enough not to come down here in the summer!

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## A GOLF COURSE SUPERINTENDENT TRYING TO GROW BENTGRASS IN FLORIDA PRESENTS AN IMPOSSIBLE SITUATION:

**Dr. J.M. Vargas, Jr.**

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I think that a cool season grass should be grown in a cool climate or it should be grown in a warm climate during the cool season only. With the type of grasses we have now, Bermudagrass is the best for warm weather and if you want to overseed with Bent or rye, then that is what you should do.

**Dr. Freeman (Summary):** Joe, I agree with you 100%. As Dr. Dudeck said in his letter, we are encouraging the use of overseeding with Bentgrass and are a little bit hesitant to recommend it for a year round use. One of the reasons is the disease problems you are going to run into. We have always seen diseases occur. We know the common ones you see — Brown Patch and Pythium. Frankly, we don't know what you may run into in the summer time when you start growing Bent year round.

The primary disease problem is probably going to be Pythium blight. Several people have talked about plants being under stress in high temperature. I believe the predominant type of Pythium in the north is Pythium Ultimum. Florida's prominent Pythium attacking grass is Pythium Aphanidermatum. That happens to be a high temperature Pythium whose optimum temperature for growth is approximately 95°F. So, when you have Bent at 95°, and Pythium is active at 95°, you have a potential disaster.

We at the University of Florida will help you in any way we can in solving your disease problems and other problems concerning Bentgrass — particularly as it relates to overseeding. After a few years you may have to do it on your own because we may not be able to afford the luxury in time and costs to research this, given the present economic conditions. We will eventually get around to it and this fall we will be testing various Bentgrass selections that are available for use. We will be evaluating Bentgrass for overseeding purposes in Gainesville this year. I will be monitoring it very closely.

**Moderator Brown:** Dr. Juhnke is the new plant pathologist at the Ft. Lauderdale Research Center. She is from Montana State and her specialty is soil-borne organisms. I will let her speak on the organisms that she has become familiar with here in Florida.

**Dr. Juhnke (Summary):** The important thing for any plant is root health. A plant without roots just doesn't survive. And this is where the importance of beneficial soil-borne organisms comes into play. The question is,

(cont. on page 70)



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(cont. from page 68)

how can we utilize this knowledge in Bentgrass or rye grass overseeding? This is one of the areas that I plan to work on in terms of biological control. How are we going to use that biological control agent on the roots of the Bentgrass? This is where overseeding might be beneficial as we can put the biological control agent into the seed before we plant it and have the organisms colonize the roots of the cool season grass and then transfer over to the warm season grass.

**Moderator Brown:** We can now see that there are organisms that have been here but have not been trouble for use because we didn't have susceptible hosts here. But there have been other things we have done that have caused an increase of stress on our grasses — whether Bentgrass or Bermudagrass. That is, our quest for speed and putting quality has caused us to lower the mowing heights. We have a lot of people in here who mow at 1/8" for a good part of the year. *That is a big stress.* So a lot of the organisms that may have been present, but not troublesome at 1/4", are now being a problem at 1/8".

**Question for Dr. Duich.** Has the close mowing that is done in the Pittsburgh area had an affect on the disease there?

**Dr. Duich:** I don't say it has had any direct affect on the disease problem but at a club like Oakmont, the membership is the determining factor. At one of their meetings, one of their Board Members made a suggestion that the greens never be higher than 1/8". Fortunately, that did not pass. But this gives you some idea of the mental-

ity of the people the superintendent has to serve. And the biggest problem over the years there has been thatch and the greens became more susceptible to winter damage.

**(Reviewer's Note:** This technique is extremely risky; unless great care is taken, severe damage can result.)

#### Questions from the Floor:

**Question #1:** Are there any problems with using a liquid fertilizer in the water system on overseeded Bent greens?

**John Foy:** I haven't seen any real problems with this but I will comment on the fertilizer used to establish your Bent. I have seen some success with 20-20-20 applied through a sprayer to get to the young Bent but not get it down to the Bermudagrass. I have seen that be helpful.

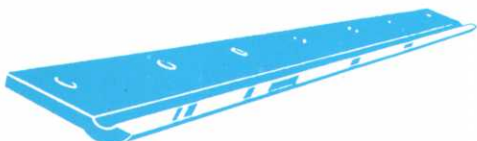
**Question #2:** What would it take to get the University of Florida interested in putting some greens in? What would it take to make it feasible?

**Dr. Juhnke:** We will be starting to renovate one of our research plots in the Ft. Lauderdale Research site for Bermudagrass. We will have overseeding studies and fungicide trials there. We will also have a fertility area, a nematicide area and another area for overseeding. But that will probably take about a year to do because it is in an area that is completely overgrown with weeds now. One of the biggest problems we have in Ft. Lauderdale is maintaining of the greens. We don't have someone there

(cont. on page 72)



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(cont. from page 70)

to mow every day — often we don't even have someone available once a week.

**Dr. Krans:** We have the same problem in Mississippi. We cannot afford to maintain the greens. So we have gone to a golf course and built the greens on the golf course and then they maintain it for us. That is how we do the research. Maybe you can find a golf course near the Experimental Station and use it to do the research.

**Dr. Freeman:** We have no plans to have a 100% Bentgrass green at the University of Florida at this time. We will have a Field Day in the spring where we will show the results of overseeding Bent on Tifdwarf. We do not know how to cope with overseeding problems and appreciate the opportunity of hearing your side of it. We can now go back to Gainesville and put our heads together to see what we need to do to help you.

**Question #3:** How much money would we need to build a green?

**Moderator Brown:** \$25,000.

**Question #4:** What about the so-called shortage of Penncross seed and the non-certified Penncross seed that is out in the market place.

**Dr. Duich (Summary):** We have never recognized such a thing as non-certified Penncross. When the variety was originally released, the only way to maintain genetic qual-

ity of the seed was to force the grower to plant and grow from first generation material. Certification sounds really good on paper but in order to have a strong program it has to be executed. If a field doesn't pass certification standards, we are turning it down.

As far as the demand for seed, we are trying to balance the supply and demand situation. I know how much seed has been shipped. We have never had as much seed shipped as has been sold. It is physically impossible to have all the seed ready this time of year, not by September 1 or even by October 1.

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## **WE HAVE NO PLANS TO HAVE A 100% BENTGRASS GREEN AT THE UNIVERSITY OF FLORIDA AT THIS TIME.**

**Dr. Ed Freeman**

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**Question #5:** I have a question about buying treated seeds. If a seed is treated it means that the bag has been opened to be treated. How is this handled to maintain certification status?

**Dr. Duich:** Yes, that is right. You have to use interagency certification to police this. For example, if you want to use a blend of 4 different rye grasses and you want to certify the seed, you must get a representative from the seed company to physically be there when the seed bags are opened. We do Interagency Certification all over the country and I don't know why you can't do that in Florida. If you can't get it done in Florida, then I know you can get it done in other states.

**Question #6:** What is the shelf life of an unopened bag of Penncross?

**Dr. Duich:** One of the factors that affects longevity is moisture. If you can maintain your supply at 5-9% moisture, you can keep it for many years. If the moisture rate goes down lower than 5% you are going to get a very rapid drop in germination. You will get an even more rapid drop in germination if the moisture goes over 10% and you expose it to heat. The key is to control that moisture and keep it between 5 and 9%. For optimum situations, the total of temperature and humidity of the storage area cannot be more than 100. That is; 2/3 temperature and 1/3 humidity.

**Moderator Brown:** Again, thanks to the FGCSA for putting together this program and special thanks to the hands-on superintendents who deal with the everyday problems of bentgrass and to our distinguished panelists who have contributed so much to what I believe has been an extremely excellent program on "Bentgrass in Florida." How about a follow-up seminar, "Bentgrass — Part II?" ■

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Indian Hills Country Club, Marietta, GA.

# EDITORIAL

## A SUPER LIFE

*The superintendent should be paid well and be asked to perform, but should also be treated with compassion and respect.*

*By John R. Piersol  
Lake City Community College  
Lake City, FL*

*John R. Piersol is the Chairperson of Golf Course and Landscape Operations programs at the Lake City Community College located in Lake City, FL. The two-year school includes golf course operations and landscaping in their curriculum.*

A career as a golf course superintendent is rewarding. The working environment is nice, and one gets a real feeling of accomplishment trying to provide the turf quality and aesthetic surroundings the members can afford. It really sounds like a super job, and it can be so. Too often the demands put on the superintendent are so great that his/her family life suffers.

## OVER WORKED?

Greens Committees need to remember that golf course superintendents are people too. They have needs, wants and feelings just like everyone else. Most superintendents feel a strong attachment to their course. This is because they sincerely enjoy what they are doing, and there is always the feeling that their job is on the line, and they better not "mess up." Thus, many hours are spent on the course, often six to seven days a week. This is great for the membership, but such a schedule can wreck a family.

Superintendents get married and have children like the rest of us. The family is an important part of our society. (At least, I hope people still feel that way. The high divorce rate and the ease with which children are shuffled off to day care centers does make one wonder about society's current feelings about the family.) My family is very important to me, and I am sure many superintendents feel the same way. Twelve to fifteen hour days, six or seven days a week doesn't leave much family time. Such strain on the home can lead to divorce which is not uncommon among superintendents.

## ANSWERS

It doesn't need to be that way. The golf course members need to be more compassionate when dealing with their superintendent. It is great to have a dedicated superintendent, but like anyone else, they need some time to themselves and for their families. The membership should

allow the superintendent to build an organization (ex: good assistant superintendent, foreman, etc.) so that he can get away from the course without constantly worrying about the way the course is being maintained. Building such an organization requires a financial commitment to salaries.

Besides the time restraints on family life, job security is another weakness of golf course superintendency. In Florida, good superintendents are paid good salaries. This is only fair. The membership does have a right to demand performance if they are paying \$30,000-\$70,000. (The salary range for an established graduate of Lake City Community College.) Although the annual dollars look good, sometimes the time and performance demands are unrealistic. The golf course superintendent often evolves into the resident horticulturist in charge of all landscape development and interior plants as well as 18-holes or more of golf. If effluent is used, he may be assigned sewage treatment plant responsibilities. All these duties can be handled if the superintendent becomes the Director of Grounds Management and is able to hire a golf course superintendent, landscape superintendent, etc. If not able to delegate some of the extra responsibilities, the superintendent will probably not be able to keep up with everything. Some tasks may slip, and the greens committee wrongfully concludes that it must be time for a new superintendent.

Sometimes superintendents change just because there is a new greens committee. Another dubious personnel policy. It costs money every time any trained people leave. It would make more sense for the new committee members to work with the superintendent rather than assume someone else is better. (In defense of greens committees, it must be said that some superintendents do lack the necessary public relations skills to work with constantly changing management.)

## EXCITING AND CHALLENGING

A golf course superintendent has a very exciting and challenging position. It is fun to work outside developing programs for the golf course so that the course plays well and the membership is treated to an aesthetically pleasing experience. The superintendency has evolved into a position that requires practical experience, formal technical training and good communications and management skills. People with such credentials demand respectable salaries. Greens committees should be reasonable in what they ask the superintendent to do. Just managing the golf course produces enough job stress. The superintendent should be paid well and be asked to perform, but he/she should also be treated with compassion and respect. Such treatment makes any position a super job. ■

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