

*In Memory Of*

**William G. (Bill) Wagner**

February 27, 1925      January 29, 1988

**The Florida Green**

SPRING 1988

Village of Tequesta  
Florida

Proclamation

OF APPRECIATION  
FOR THE MEMORABLE COMMUNITY SERVICE OF  
WILLIAM G. WAGNER

WHEREAS, on January 29th, in the year of our Lord 1988, death brought to a close the life of William G. Wagner, esteemed Tequesta citizen and public servant who contributed immeasurably to the beauty and quality of life in our community; and

WHEREAS, the selfless service of Bill Wagner as Chairman of Tequesta's Board of Adjustment established guidelines for a more beautiful Tequesta; and

WHEREAS, in his role as Tequesta Country Club Golf Course Superintendent for twenty two (22) years, and Florida President of the Golf Course Superintendents Association of America, he created treasured landscape beauty and recreational enjoyment for the people of Tequesta and the State of Florida.

NOW, THEREFORE, BE IT RESOLVED:

That the Village Council of Tequesta join with our citizens in recognizing the lifetime contribution to our community of William G. "Bill" Wagner, beloved as "God's Gardener" and affectionately known to all as our friend.

In observance whereof, the flags at Tequesta Village Hall and Constitution Park for a period of three (3) days from this date shall be flown at half staff. Duly authorized February 1, 1988, with the official seal of Tequesta affixed hereto.

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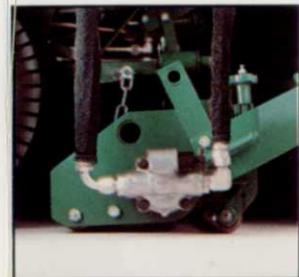
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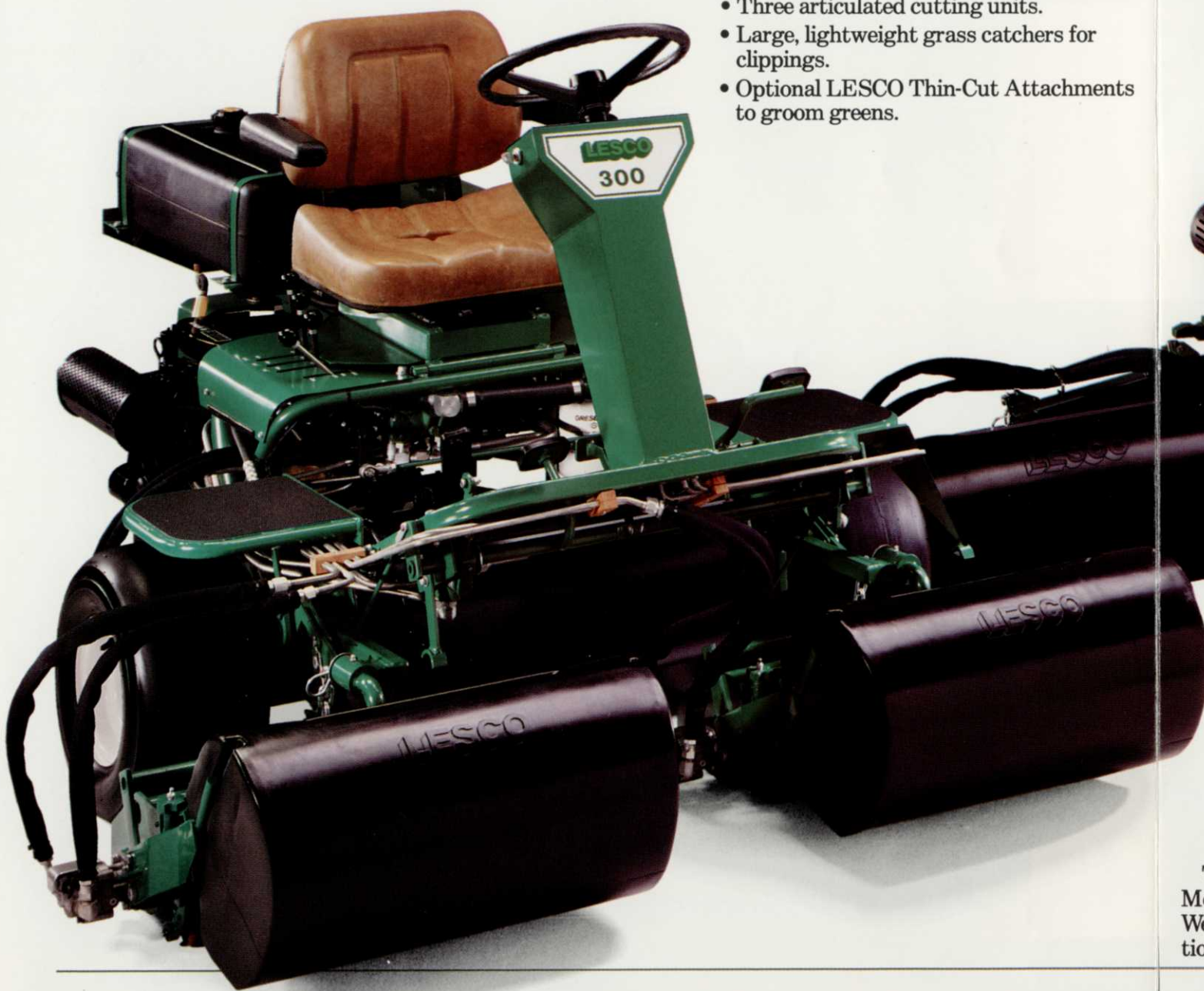
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## ABOUT OUR COVER

William G. Wagner was president of the Florida GCSA, 1981-1982 and Golf Course Superintendent of Tequesta Country Club for the past 22 years.

**DANIEL ZELAZEK**  
Cover Photography

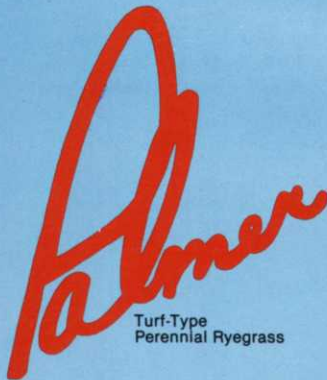
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Turf-Type  
Perennial Ryegrass

# Still the Best

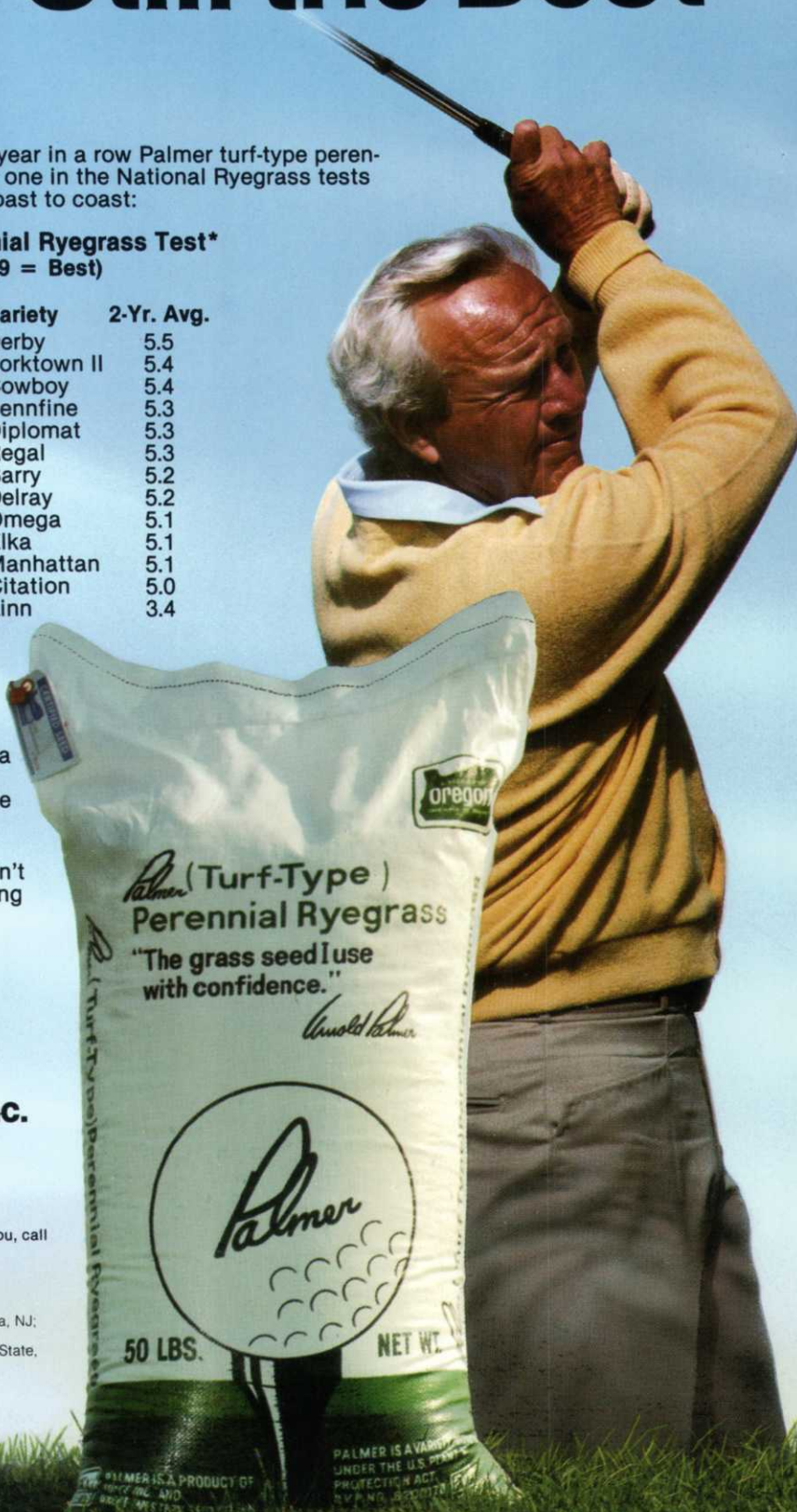
That's right. For the second year in a row Palmer turf-type perennial ryegrass scored number one in the National Ryegrass tests conducted by the U.S.D.A. coast to coast:

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Gator	5.9	Yorktown II	5.4
Prelude	5.8	Cowboy	5.4
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Premier	5.7	Regal	5.3
Citation II	5.6	Barry	5.2
Manhattan II	5.6	Delray	5.2
Blazer	5.6	Omega	5.1
All Star	5.6	Elka	5.1
Ranger	5.6	Manhattan	5.1
Birdie II	5.5	Citation	5.0
Fiesta	5.5	Linn	3.4
Pennant	5.5		

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## **Presidents Message**



I recently read a survey by the Roper Organization, the people who keep tabs on what we are doing and thinking as Americans.

When asked which one or two of eight things say most about a person the response showed *friends* (46%), *homes* (28%), and the causes they work for or contribute to (20%) were at the top of the list. As you might expect, jobs, clothes, hobbies, jewelry and cars were also mentioned by many of those interviewed.

The report went on to say that some people were surprised by this report. I for one was not surprised and I know that most of my peers in the Golf and Turfgrass industry would not be surprised either to see *friends* at the top of the respondents list.

Our association has progressed and flourished through a wide variety of disciplines and involvement. Being involved has helped us to foster long lasting and meaningful friendships both in business and throughout life.

Our association has lost two very good friends and associates. Whenever we drive by the Everglades Country Club and the Tequesta Country Club I'm sure it will bring back many fond memories of Otto Schmeisser and Bill Wagner, two good friends who will be missed but not forgotten by their many friends and associates.

Sincerely,

A handwritten signature in cursive script that reads "Dick Blake".

Dick Blake  
President, FL GCSA



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# Letters to the Editor

Dear Dan:

It was nice talking to you today - I hope we continue to have this kind of weather for awhile. It certainly makes our jobs a little easier.

I have enclosed a copy of the article I talked to you about. It came from the October 1931, GOLFDOM magazine. It was on page 18, and the article is entitled "EASY ON HIGH-POWER NITROGEN" IS SOUTHERN WARNING, and it was written for GOLFDOM, by O.J. Noer.

I thought it was interesting to read considering the many meetings and discussions superintendents have been having about Bentgrass.

I am a collector of golf items and I have an extensive collection of old publications. I try and read at least one publication each day as I eat lunch in my office. I came across this article this past week and thought you might have some use for it.

Along with the article is a picture, in black and white, of the No. 9 green of south course at Boca Raton, a hole that Tom Armour says is one of the world's greatest. The course is rich in evidence of scientific maintenance is the caption under the photograph.

Keep up the good work as editor - I feel for you - I know how hard it is each and every month.

Sincerely,  
David C. Holler, CGCS  
Quail Ridge Country Club  
Boynton Beach, FL

Dear Dan:

This note is to express my personal delight upon reading in the latest Florida Turf Digest of the richly deserved and inexcusably delayed award of the FTGA WREATH OF GRASS, and of the equally merited DISTINGUISHED SERVICE AWARD by the Florida Golf Course Superintendents Association.

In the parade of a dozen of your accomplishments listed by the Turf Digest I submit that your most spectacular credit was omitted: **You and your amazingly excellent FLORIDA GREEN have largely sparked the initiation and development of self-respect and a sense of professional worth in our turfgrass managers.** Very necessary advances in educational requirements alone could not have built the present professional pride and fraternity.

With kind personal regards,  
ROY A. BAIR, Ph. D.  
Grassland Agronomist

Dear Dan:

Just a note to congratulate you on being the recipient of the Wreath of Grass Award in 1987. It is the recognition of your outstanding leadership in the turfgrass industry and your standing as a professional within the industry. I am glad to have you located in Palm Beach County and appreciate the assistance you give us from time to time at the Cooperative Extension Service.

Best of luck in the new year.

Sincerely,  
Clayton E. Hutcheson  
Extension Director  
Palm Beach County

Dear Dan:

The most recent issue of your fine magazine proved mighty interesting. O.S. Baker tried c-1 creeping bent about 1948, (heat tolerant) but its tolerance lacked something. In 1950, I helped plant 9 greens in the DC area to Meyer zoysia. That is taking a hot weather grass north - the reverse of bent. Those greens are still being played with minimum maintenance. May I suggest that one of the fine-leaf zoysias be given a trial in Florida's heat. To reduce thatch potential, it should be grown on a reserve of synthetic organic nitrogen in the rootzone.

Zoysia putting greens would be a target for opinions of many kinds. They would divert the bent negativism. There is a lot in the works.

Congratulations on your award. Well deserved!

Sincerely yours,

For Better Turf  
Fred V. Grau  
Pres MITF/Chm NSTC Exec. Com.

Dear Dan,

As a follow-up to our conversation in Florida during the Bentgrass Seminar, I have written a short article concerning our bentgrass research at Mississippi State University. As the article describes, we are using tissue culture techniques in order to develop a heat tolerant bentgrass. Please feel free to edit the article as you see fit. If you have any questions, please do not hesitate to contact me.

Sincerely,  
Jeffrey V. Krans  
Professor



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# CAN BENT GRASS BEAT THE HEAT?

Jeffrey V. Krans  
Professor of Agronomy  
Mississippi State University

Creeping bentgrass is unquestionably an important turfgrass species used on golf greens throughout the U.S. However, its zone of adaptation is limited by its own physiology; it is a cool season plant type. Research at Mississippi State University shows that its thermal physiological limit (TPL) (tolerance to high temperature) is 127°F. This critical temperature can be compared to bermudagrass which shows its TPL is 150°F. Although bentgrass could not attain the same TPL as bermudagrass, research has shown that the 127° TPL of creeping bentgrass can be extended. To what degree this expansion can be made is not yet known. However, the important point is that the genetic diversity does exist for improvements.

Over the past ten years, we have been conducting research at Mississippi State University to develop an improved creeping bentgrass. Our goal is to release a seeded bentgrass cultivar with improved tolerance to direct high temperature stress. As a means to achieve this goal, research has been based on tissue culture techniques. Briefly stated, tissue culture is the culture or maintenance of plants at an unorganized cellular level (Fig. 1). This approach differs



Fig. 1 Tissue culture of creeping bentgrass growing as organized aggregates of cells called callus. It is at this stage of culture that superior cell lines are recovered using a process called *in vitro* cell selection.

from conventional plant breeding in that tissue culture is based at the cell level, whereas, traditional plant breeding utilizes plants at the whole plant level. Tissue culture takes place in sterile containers, usually a petri dish containing various growth substances and nutrients that support plant (cell) growth. Changing one or more components in the tissue culture media affects the degree of growth and differentiation of the cells and therefore gives this process its uniqueness (Fig. 2).

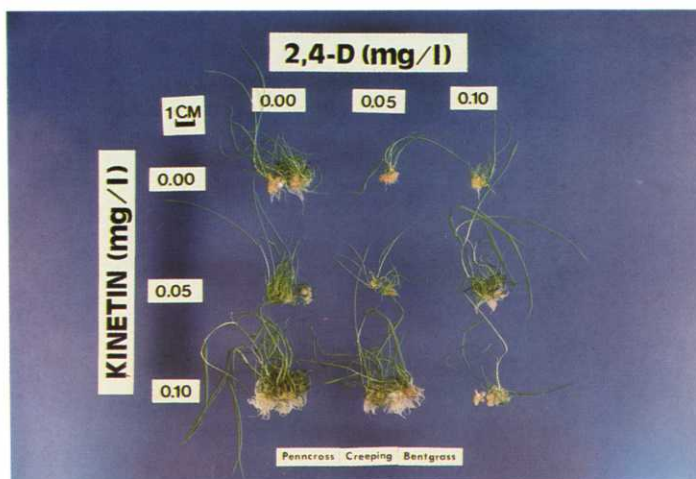


Fig. 2 By varying the concentrations of two plant growth regulators (Kinetic and 2, 4-D), the degree of root and shoot formation can be made to vary. It is this regeneration ability that allows for the recovery of superior plants from previously selected superior cell lines.

By subjecting large numbers of creeping bentgrass cells to normally lethal levels of extreme high temperatures, tolerant cell lines have been isolated and whole plants regenerated with survival features. Currently, we have recovered and field tested over 500 superior types of creeping bentgrass. Of this group, 8-10 variants have been selected as the best survivors. Since 1985, we have been sending these superior plants to Oregon for seed production. This fall

(continued on page 14)

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(continued from page 12)

we planted our first experimental cultivar (MSX-68) (Fig. 3) and are looking forward to next summer and high temperature stress. Based on recent tests conducted on the parents used in seed production, results show physiological evidence that we have increased the heat tolerance in creeping bentgrass. How much and to degree this has been sexually transmitted to the progeny (seed) will be determined during the next two summers. Bentgrass will never have the heat tolerance of bermudagrass. However, we now know that we can improve this species and make it more heat tolerant. To answer the question: "Can bentgrass beat the heat?" we are sure it has good promise, but how good is "good" is still unknown. With continued research, the full answer to this question will become more apparent.



Fig. 3 Initial establishment (3 weeks post-germination) of the first experimental heat tolerant cultivar in comparison to Penncross and Pennlinks creeping bentgrass. This experimental putting surface will be used to evaluate relative heat tolerance of these cultivars.

**Acknowledgements:** Our creeping bentgrass heat tolerance research has been funded in part by the Carolina Golf Association, Georgia Golf Course Superintendents Association and the United States Golf Association.

Editor's Note:

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.



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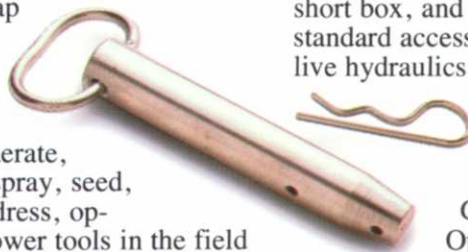
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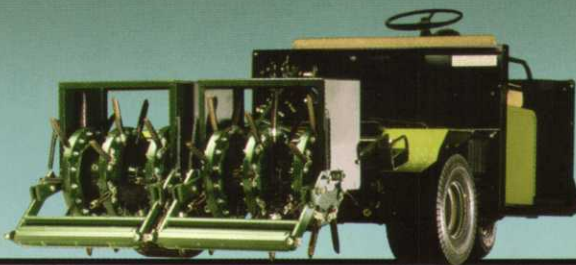
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# EASY ON HIGH-POWER NITROGEN

By O.J. Noer

**GOLF CLUBS** in the South are confronted with turf maintenance problems which are peculiar to that section. These are accentuated in Florida, where the preponderance of light sandy soils account for plant food deficiencies not encountered in other sections. Heavy annual precipitation and porous sandy soil results in rapid loss of plant food by leaching. Favorable air temperatures and abundant rainfall produce luxuriant vegetation, but this advantage is partially offset by the greater variety and abundance of insect pests.

Nowhere are insects a more serious threat than in Florida. The greener grass on golf courses attract these pests from adjoining waste lands with almost devastating results. Their control is a problem deserving of special attention to simplify and safeguard turf maintenance, but that concerns the entomologist, and is beyond the scope of the present discussion.

It is universal practice to use Bermuda as the basal grass on southern greens. This constitutes the putting surface for summer usage, but it is accepted practice to seed rye or other suitable grass for winter play. Bermuda is also the principal fairway grass, although carpet grass is favored by many particularly on the moister low-lying areas. It is said that where conditions are favorable for its growth, carpet grass will crowd out many objectionable weeds.

## BERMUDA DORMANT IN WINTER

In Southern Florida, Bermuda continues growth throughout the winter, but from central Florida north it turns brown in the late fall, and remains dormant throughout the winter season. Due to this climatic difference, courses in south Florida can maintain green fairways throughout the important winter season, and several courses south of Palm Beach have continued with Bermuda greens without resorting to supplementary seedings of winter grass. Whether the prejudices against Bermuda can be overcome only time will tell.

The customary fall seeding does not interfere with play on courses open during the winter only, but where play continues throughout the year, surfaces are poor for a period in the fall until the new grass becomes established, and for an even longer period

in the spring, extending from the time winter grass starts to disappear until the Bermuda reestablishes itself.

Golfers accustomed to the bent greens of the North object to Bermuda greens because it develops stubbly hard surface stems and coarse broad leaves. This is not so noticeable on new turf developed from seed, but even this turf gradually becomes coarse.

To overcome these objections, there has been considerable agitation lately in favor of bent to provide grass for all year play. Its successful use in southern California and western Kansas are cited as proof that it will survive far south of the present limits. Unquestionably, bent will grow in the southeastern states during the winter, but it is not apt to withstand severe summer weather.

Southern California has a hot dry climate, and this is also true of western Kansas during the summer. Consequently, grass is free from dew during the most difficult summer season, and the supply of water can be controlled absolutely by artificial means. In the southwestern states, bent is apt to go out quickly during humid hot weather following heavy rains. Even partial success must depend upon exceptional surface drainage to remove surplus water rapidly, and a soil sufficiently porous to accelerate downward movement of any superfluous water absorbed by the soil.

## DOUBTS BENT'S SUCCESS IN SOUTH

Careful watering, correct feeding, and constant control of fungous diseases and insect pests obviously are also very essential. Even the best of care may fail during an unusually wet, hot summer. The abominable surfaces following even partial loss of bent turf and probable high cost of maintenance will deter general use of bent in the South. Bermuda has no equal as a hot weather grass, and for the present will continue as the most suitable grass for summer play. Search for finer-leaved strains and better methods of maintenance offers more promise for better summer putting surfaces than general adoption of bent. Two sets of greens, one for summer and the other for winter play is one solution for inconveniences incident to fall seeding and Bermuda revival in the spring.

*(continued on page 20)*

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# Rubigan® ends your golfer's *Poa* excuse.



(continued from page 18)

## WHEN TO SEED WINTER GRASS

Winter grass is seeded when temperatures are moderate during October in the Carolinas, and late in November in Florida. Prior to seeding, the greens are raked thoroughly and cut close. This removes many superfluous runners, and serves to prepare a seed bed for the young seedlings. Fertilizer is then applied, seed is sowed and covered with a moderate topdressing. The soil is kept moist by frequent watering to promote germination and obtain a stand of grass quickly. Once a good stand of well-rooted grass is obtained, few difficulties confront subsequent maintenance.

The most serious trouble occurs during the first few weeks following seeding. New leaf growth is often soft and tender, but with age, leaf structures tend to become more sturdy. If hot humid weather follows seeding and leaf structures are especially succulent, the young grass succumbs. In extreme cases reseeding becomes necessary. The affliction resembles the "damping off" which occurs in the greenhouse in the winter when grasses are grown for experimental purposes. Greenhouse temperatures of 80° Fahrenheit or more, and heavy watering usually induce a "damping off" of new seedlings. It can be prevented by maintaining temperatures approximating 60° F., watering carefully, and avoiding excessive initial nitrogen feeding.

Obviously, outdoor temperatures cannot be controlled, so the only hope of minimizing trouble lies in cultural methods which tend to produce a sturdier initial growth. Practices which promote early root development and production of sturdier leaves will surely lessen the severity of injury, and make control possible.

Failure to recognize and apply these fundamental underlying principles are in a measure responsible for the troubles immediately following seeding.

Methods followed during the summer are not suitable for winter grass. Bermuda must be kept vegetative to offset its tendency to mature, and thus produce stiff leaves and stubby stems. This necessitates generous watering and heavier nitrogen feeding with only sufficient phosphoric acid and potash to satisfy growth requirements.

## GO EASY ON NITROGEN

In many instances the fertilizers used before seeding have aggravated troubles. The tendency has been to use nitrogen, which is the growth producing element, too generously. Rapid growth, no matter how produced, is always associated with more tender leaf structures; so nitrogen by forcing initial growth unduly may accentuate the young seedlings' natural tendency to produce weak leaves. On new seedlings phosphoric acid excites a marked stimulating effect on initial root development, and potash tends to produce somewhat sturdier leaves. Hence, it would seem logical to withhold nitrogen prior to seeding, and confine fertilization to applications of phosphor-

ic acid, and possibly potash on the sandier soils. After a good root system is obtained, nitrogen feeding can begin, and its use continued throughout the playing season as turf condition warrants.

Generous use of nitrogen on Bermuda in early fall should be avoided, for residual nitrogen in the soil may force the new seedlings. This danger can be overcome by having the Bermuda just a little nitrogen hungry at the time of seeding.

Water plays a very important role in its effect upon amount and character of growth. In the presence of a limited moisture supply, growth is restricted and tissues become harder. Where water is plentiful, rapid growth occurs and plant tissues are softer. These effects are often overlooked, and the possibilities of influencing the amount and character of growth by partial control of the water supply is seldom considered.

Proportionately more water is used on Bermuda greens than is customary on bent greens in the North. This is undoubtedly, sound practice, provided excesses which saturate the soil are avoided, because it encourages more active vegetative growth. On winter grass a minimum of water, just sufficient to satisfy growth requirements, will tend to produce stronger turf.

## THIS PROGRAM SUCCEEDED IN 1930

For those who desire a concrete example, the program followed by several greenkeepers in Florida last fall may be of interest. Whether it deserves general adoption and will prove equally successful during a severe season remains to be seen.

Fertilizer applications consisted of 2 to 4 lbs. of 45 per cent super-phosphate (4 to 10 lbs. of 16 or 20 per cent phosphate) and 2 to 3 lbs. of 50 per cent muriate of potash per 1,000 sq. ft. of surface. Applications were made 7 to 10 days prior to seeding to avoid all danger of retarding germination, or injury to the young seedling. No nitrogen was used, and fall feeding of Bermuda was previously curtailed.

After seeding, the greens were topdressed with a soil devoid of plant food. It consisted of a mixture of marl and sand in proportions such as to make a good sandy loam. Humus, muck, peat, and rich compost were purposely omitted from this one topdressing mixture. Watering was watched closely. Just enough to permit growth was supplied, and excesses avoided. An excellent stand of grass was obtained, and nitrogen feeding was not started until a good root system had developed. Nitrogen feeding was continued during the playing season, frequency and rate of application depended upon turf condition, using color, amount of growth, and sturdiness as a guide.

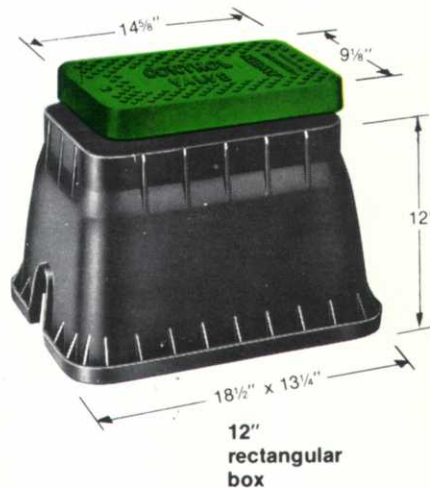
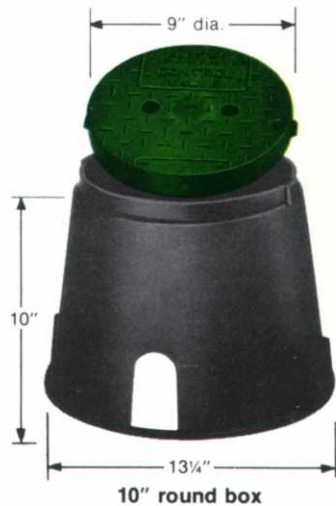
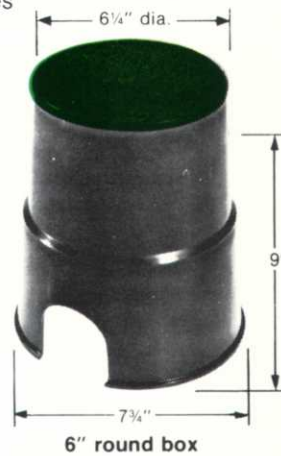
EDITOR'S NOTE: This article was taken from the October 1931 issue of Golfdom Magazine. It could just as easily apply to the bentgrass controversy in Florida today. ■

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# Palm Beach Trade Winds



## I'M A GRADUATE FROM FLYMO UNIVERSITY

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By Mike Bailey  
The Falls Country Club

There is a theory that people work hard and upgrade themselves until they ultimately reach their level of incompetency. If you can agree with this theory, there are some interesting points to analyze. I remember a professor in college analyzing this theory. Back then, it really made very little sense to me. However, after being out in the real world and dealing with employees for the last ten years, "the incompetency theory" does make sense.

This theory holds true for everybody that works for a living, whether you are a flymo operator or a golf course superintendent. There are really two types of working class people. Those who work up the ladder and those who do not. The individual that works up the ladder is not a problem. This type of person sets goals, achieves them, and continues to strive upward. Within the golf course maintenance staff, this usually is the upper half of the entire department. There usually are enough goals and rewards to satisfy these people.

1. At the top of the ladder, the golf course superintendent sets goals and can achieve job satisfaction.

(When this does not occur, we typically associate the club as a musical chair type, where the salary is too low, the club impossible to satisfy or perhaps the superintendent incompetent.)

2. At the next level, hopefully the assistant superintendent is hardworking and striving to become a superintendent themselves, therefore the rewards are high and motivating.

(When this does not occur, either the assistant is restrained to move onward by upper management, burdened with personal liabilities such as the lack of formal education along with financial limitations to obtain such, or simply the assistant feeling unqualified to move on.)

3. Next, the mechanic too can have goals. Not so

much the goal to move beyond the role of the mechanic because he is usually specially trained for that specific field, but to achieve satisfaction within this department. To achieve ultimate satisfaction, whereby nothing breaks down would be idealistic, because even a perfect machine requires maintenance. Therefore, at this level, satisfaction is one huge task.

(When satisfaction does not occur, unfortunately the mechanic is being restricted by the repairs budget, being given ratty old equipment that's impossible to repair, or simply does not have the desire to be proud of his machinery.)

4. The foreman, spray technician and the remaining upper half of the crew can foresee advancement and therefore set their goals to work hard and move up the ladder. At this level, there can be a great deal of employee satisfaction because good workers are constantly in demand.

(If this does not happen, we typically find the remaining sector of the crew is generally untrained and unsatisfied. It is difficult to produce self esteem at this level and difficult to maintain the staff on the payroll.)

Now for the other half of the crew:

**The laborer with low pay, few benefits and little ambition to move upward is the most difficult employee to find and retain.**

Lets face it, there is only so much room for the chiefs and the remaining crew staff needs to be the indians.

How can you obtain the indians without having them run off to another camp? One of the simplest cures would be the "money grows on trees" theory and give the employee whatever they ask for in order for them to stay. Obviously this would not fly as budgets would become exhorbitant. So, where do we draw the line? At what stage do we try to help the employee professionally and personally satisfied.

(continued on page 24)

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(continued from page 22)

I hear quite often, fellow superintendents distraught over poor employee morale, lack of attendance and overall poor performance. This problem seems most disheartening because we convince ourselves there is little that we can actually do to help alleviate the problem. To the contrary, there is a great deal we can do to improve employee morale and to create an environment conducive for a superbly maintained golf course.

Our ultimate goal for the so-called lower half of the crew is to create an environment that will satisfy their desires. We are not necessarily talking about extravagant ideas or cost. More to the contrary, these benefits should be relatively standard throughout our industry. Because these benefits are not the standard, those clubs with the better benefits ironically obtain a better crew, all the way down the line to the lowest crewmember on the totem pole. Listed below are relatively standard benefits that should be prevalent for every golf course maintenance department.

1. Vacation:
  - 1 week after 1 year
  - 2 weeks after 2 years
  - 3 weeks after 5 years
2. Medical Plan: Full coverage after 3 months
3. Dental Plan: Paid by employer. At least option for employee to purchase
4. Retirement fund
5. Savings plan
6. Yearly Bonus or Christmas Bonus

7. Opportunity to receive overtime pay
8. Uniforms
9. Lunch program: Purchased at cost through clubhouse or, purchased at cost plus
10. Lunch Room facility with:
  - Air conditioning
  - Refrigerator
  - Microwave
  - Vending Machines
  - Personal lockers
11. Golfing privileges
12. Employee tournaments
13. Discounts provided for proshop purchases

I'm sure you could easily add a few more standard equipment items to the list in order for employees to remain on the payroll.

Sadly, considering most golf course maintenance department budgets are lacking in funds, and good employees are difficult to find, the most important item is the retaining of crew members. If we can instill an attitude of incompetency to competent, unfulfilled to fulfilled, unsatisfied to satisfied, lazy to hardworking, tardy to ontime, grumpy to cheerful, disagreeable to agreeable, ultimately, the wave of negative feelings can transfer to positive. The feelings at the lower level of the crew can improve to a point where team work will improve. A cohesiveness from the top all the way to the bottom can make even the flymo operator feel as proud as if they're a graduate of Flymo University. ■

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## **CIBA-GEIGY CONTRIBUTES \$50,000 to GCSAA ENDOWMENT FUND**

A \$50,000 contribution to the Golf Course Superintendents Association of America's (GCSAA) scholarship and research fund has been made by the Turf & Ornamental Department of the Ciba-Geigy Corp.

The Robert Trent Jones, Sr. Endowment Fund, established by the GCSAA in August, makes scholarships available to outstanding students enrolled in college turfgrass management programs nationwide. The fund works to encourage future leaders among professional golf course superintendents.

"We're pleased and excited about the opportunity to make a significant contribution to the endowment fund," says Bill Liles, director of Ciba-Geigy's Turf & Ornamental Department. "Furthering turf research through scholarships for college students is an excellent example of industry, education and the GCSAA working together."

John Schilling, GCSAA executive director, says the endowment fund enables the association to support research in such areas as drought and disease resistant grasses, environmentally sound turf management, and effective water and soil resource conservation.

Director Gerald Faubel, CGCS, chairman of the Scholarship and Research Committee, says the timing and generosity of Ciba-Geigy's contribution to the endowment fund "indicates the kind of leadership needed to keep our profession strong."

Liles adds that Ciba-Geigy looks forward to making additional contributions to the turf industry in the years ahead. "We are committed to taking a leadership position in the development of products that prevent disease, insects and weeds from harming our turf. This contribution is the first of many steps we intend to take."

Ciba-Geigy also has re-organized into a new Turf & Ornamental Department to better meet the needs of turf professionals. Key members of this group include Director Bill Liles, Sales Manager John McLeod, Product Manager Joe Prochaska and Dr. Doug Houseworth, senior technical support manager.

Ciba-Geigy recently introduced two products to the turf market — Triumph insecticide and Banner fungicide. The company also markets Subdue fungicide and diazinon for turf use.

## **FIRE ANT BIOLOGICAL CONTROL EFFECTIVE IN SOUTH AMERICAN FIELD TESTS**

By: Julie Graddy

GAINESVILLE — A fungus applied for the first time on fire ant nests in Brazil has killed the pest, says a scientist who has been searching for biological agents to control the imported fire ants.

Jerry Stimac, an entomologist with the Institute of Food and Agricultural Sciences (IFAS), who has been working with the fungus in the laboratory for over a year, said this is the first time that researchers have introduced the fungus into the soil of a fire ant nest and observed positive results.

The fire ant-killing fungus was isolated from another site being monitored in the north Brazil state of Mato Grosso where soil samples collected from empty nests revealed that the soil was "loaded with fungal spores," noted Stimac.

"This is significant because we have been able to take the fungus from an area where it naturally occurs, culture it and introduce it into uninfected fire ant nests. The fungus grew inside the nest and killed the fire ants. This leads us to believe that this fungus can be adapted to Florida conditions," Stimac stated.

The imported fire ant is well established in the southeast and has rapidly displaced native ant populations, he noted. Over \$200 million has been spent in the southeast in an unsuccessful attempt to control or eradicate the imported fire ant with chemicals.

"Some of the chemicals previously used have been banned by the United States Environmental Protection Agency. This fungus is non-toxic to fish and mammals," Stimac said. "It appears to be a time bomb in the nests," he noted, adding that several strains are possible fire ant control candidates.

"Chemicals haven't been successful. We're trying to adapt what appears to be the natural control mechanism for fire ants in their homeland and make that control suitable for introduction here," Stimac said.

The IFAS research was conducted under a recently signed five-year agreement with the University of Sao Paulo Agricultural School for mutual scientific and technical cooperation in biological control of pests.



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# THE MANAGEMENT CHALLENGE

By Bill Kent, Ph.D.

Bill Kent is an Associate Professor of Hotel, Restaurant, and Travel Administration at Georgia State University, a GSU Distinguished Professor, and author of numerous articles on the hotel and food service industries.

## Money Talks, But It Doesn't Tell The Whole Story

A recent poll of 1,464 adult workers provided some interesting insight about how we feel about our jobs. Among those who claimed to like their jobs (the majority of those polled) 33 percent said the work itself was the aspect they liked the most, 25 percent described co-workers as the aspect most liked and only 12 percent said that wages turned them on the most.

Among those who disliked their jobs, a full 42 percent were unhappy with their wages. It seems that when people are not happy with what they do for a living, they turn to the wage issue as a channel of discontent. They may feel trapped in their jobs and think that more money would probably make them happy. It would; for about a month. Then the tedium, or a poor boss or a depressing future would reassert itself and discontentment would occur again.

Industrial psychologists have a word or two for this. They say when a person cannot find happiness in work itself he usually seeks enough money to buy happiness away from the job, and refer to it as extrinsic rewards. When someone finds contentment

and satisfaction in the job itself, he experiences intrinsic rewards.

Fancy words, perhaps, but it takes no psychologist to convince us that the intrinsic pleasures of a job you love go a long way toward helping you achieve overall happiness. One study indicates a person's attitude toward their job has an impact on their overall health!

What can we learn from this? One thing we must not conclude is that pay is not important. We all know it is, but it becomes important relative to how strong a love affair we have with our work.

A lot of evidence is available that says an employer will seldom succeed in buying top performance and loyalty in employees. If the intrinsic rewards of the job are not there for the worker, he or she will never consistently perform up to potential.

Try thinking about using this knowledge in the following manner: (1) match new employees to their jobs as well as possible (find out the natural traits and skills of applicants and match these to those required in the job.), (2) closely monitor the performance levels of all employees (3) counsel with them and find out how they feel about what they do every day (raise the pay of top performers yes, before the usual raise date, they're worth it) (5) try to switch jobs among the poorer performers and (6) as a last resort, replace the poorer performers with new applicants whose skills and natural traits match your job openings. This isn't easy, but the psychologists would say you'd be a psychoceramic not to try. What's a psychoceramic? Why, a crackpot, of course. ■

## SUPERINTENDENTS NEED TO SHARE KNOWLEDGE Surveys Are The Best Tool

Dear Dan:

I am writing in hopes that the State Supt.Assoc. has a golf course wage survey that you could send to me. Like a lot of courses we have a labor problem. Part of it is due to low wages. A well documented wage survey would be a big help in improving the wage scale. The last survey I have on file is dated Dec. 1982.

While I am on the subject of surveys, I believe that the StateAssoc. could do a valuable service for the superintendents of the state by conducting surveys on a great number of subjects. Such as wages, equipment (length of use, repair history, operating practices, etc.), insecticides (when and how different superintendents use them), herbicides (when, how, and what combinations are used in our areas, not at the universities in Florida, Georgia, and Texas, but by the golf course superintendents on their courses),

how do different courses handle golf cart traffic in wet weather, in high traffic areas such as the ends of the paths, how do they keep the carts on the paths at the tees and greens. There are many other subjects that could be addressed by the State Asso. that would be of immense benefit to the superintendents.

I believe that we must have long range research on many problems, but for a small part of the dues that are collected from the superintendents we could be helped on problems that could be corrected today. Surveys that can be filed together would be much more helpful than articles in a magazine that you have to search through stacks of magazines to locate the article.

Thank you,

Philip Ammann, Supt.  
Bonaventure Country Club

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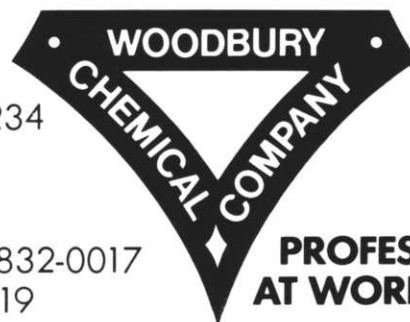
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# IRRIGATION CAN BE DEADLY

Last month we reported the appalling accident that befell Woodcote Park's Head Greenkeeper Eric Green, when the cover blew off the box housing the control valve alongside the seventh green.

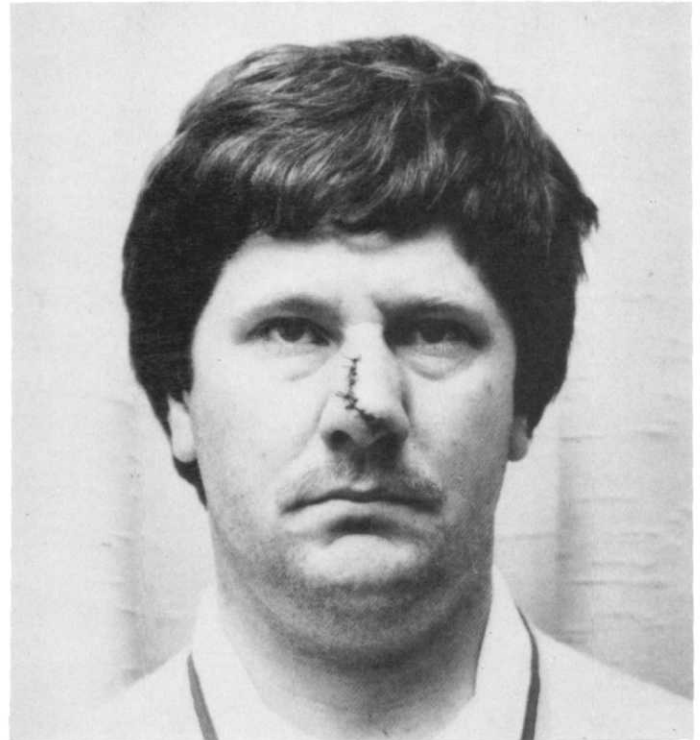
Eric is now recovering from his injuries and is well enough to take a two week holiday with his family.

Since the events of that July evening, when Mr. Green, accompanied by his wife Carol and their daughter were inspecting the updated irrigation system installed by British Overhead Irrigation Ltd., the club have employed an independent consultant to check the scheme and an investigation has commenced by the Health and Safety Executive.

Irrigation systems as was pointed out last month can be extremely dangerous if they do not meet the exacting standards laid down by the only controlling body in this country, the British Turf Irrigation Association.

One of the leading members, Bill Hawthorn of Watermation Ltd. has commented.

The horrific accident to Eric Green, Head Greenkeeper at Woodcote Park Golf Club resulting in facial injury occurred because of a failure of the plastic nipple underneath the manual hydrant. Failures of this nature are not uncommon if this method of installation is used. For this reason many years ago Watermation devised a different method of mounting valve assemblies at the greens having the hydrant supported on a metal nipple attached to a robust metal tee, in order to withstand



Eric Green (above) needed 17 stitches in his nose when a plastic coupling broke off the control valve.

the mechanical loads which inevitably are placed upon the hydrant when hoses are attached.

Toro, whose General Manager Peter Roberts is Chairman of the Association, has recently published a guide entitled 'The Thinking Man's Guide to Golf Course Watering', a publication that all golf green committees should read before asking companies to submit tenders for irrigation systems.

Naturally this booklet is biased towards the Toro product as any sales literature should be in a competitive market.

Other systems, such as that marketed by Watermation, could suit a club equally as well. The club must seek tenders for the product that best fits their need within a price bracket they can afford.

What they must not do is to take the lowest price, without ensuring the system fully meets safety standards and their staff are not put in a position of danger.

We are publishing the photograph's of Eric Green's injuries, not from a sense of tabloid press sensationalism, but simply to bring home to Greenkeepers and those involved in Golf Club Management, the need to be ultra careful when dealing with water under extreme pressure.

Preprinted from Golf Greenkeeping Magazine, West Yorkshire, England. ■

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# IN MEMORIAL TO MR. BILL WAGNER



**Seldom in a person's life do we have the privilege of meeting and being associated with a man of the caliber and character of Mr. Bill Wagner. Having known Bill for 20 years, I found him always to be the example of professionalism that our industry is seeking and requiring. A gentle man of honesty and integrity who was always willing to give more than he took as demonstrated by his unselfish associational work, his golf course responsibility and his personal life.**

**The people who make up the Florida Turf Industry need to remember the example of courage, integrity and professionalism left for us by the life of Mr. Bill Wagner.**

**This space donated by an Anonymous Advertiser.**

# A TRIBUTE TO WILLIAM G. "BILL" WAGNER

February 27, 1925

January 29, 1988

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By  
George Jones

The Village of Tequesta, a little town nestled in the woods near the ocean north of West Palm Beach, was the home of one of the great men of our state William G. "Bill" Wagner. On January 29th Bill passed away after a ten year bout with cancer.

Bill Wagner was Golf Course Superintendent of the Tequesta Country Club since August 1965. He served the Village of Tequesta as Chairman of the Board of Adjustment. Bill was President of the Flori-

da Golf Course Superintendents Association (1980-1982) and President of the Florida Turf Grass Association (1983-1984). He was awarded the "Wreath of Grass", the highest award of the F.T.G.A., in 1983. Bill was the first recipient of the Florida Golf Course Superintendents Association's "Distinguished Service Award". He was one of the organizers of the Prayer Breakfast that has become one of the major events at the annual F.T.G.A. Conference and Show in Tampa.



*Joan Wagner in front of her home. Bill loved his flower beds and replaced them yearly. This past fall, he was too weak to plant his annuals, so his crew from the golf course came and planted them for him.*



Although I had known Bill for many years as a friend and of his reputation as a professional, he never talked about himself. To find out more about Bill, I went to Tequesta to interview his wife, Joan, and his associates.

Many of us know Joan for her presence with Bill over the years at the state and national conventions. But, I didn't know her personally or had ever been to their home in Tequesta.



*Joan Wagner: wife, friend, confidant.*

As I pulled into the driveway, I noticed the beautiful landscaping with striking Begonias and Impatiens adding color to the well manicured yard. Joan was warm and receptive as she greeted me. I explained my association with Bill and that our readers would like to know more about his life.

Florida Green: Joan, over the years, many of our readers knew Bill as a strong superintendent, great President of our association, and a good friend. First, tell us where Bill was born and raised.

Joan: Bill was born on February 27th, 1925 in Philadelphia, Pennsylvania. As a small boy his family moved to Quakertown, Pennsylvania. That is where he was raised along with one older brother.

F.G.: How did you and Bill meet?

Joan: I met Bill in Quakertown while I was still in high school. It was a blind date for me. Bill had seen me before so it was not a blind date for him. Bill knew some of the fellows I went to school with. Through a mutual friend they arranged a double date. He had just come back from the Air Force after World War II. We liked each other from the start. Two years later when I was 19, we were married. In our 38 years of marriage we raised two daughters. Susan is married to Paul Early and they have given us two sweet granddaughters, Kelly and Becky. Our daughter Peggy is a C.P.A. and lives close by in Stuart, Florida.

F.G.: How did Bill get started?

Joan: He studied agriculture in high school. Bill was always interested in the outdoors. Just a good farmer.

F.G.: Was Bill always in the turf business?

Joan: No, Bill wanted to fly in the Air Force, but he was color blind. He went through the Spartan Aeronautics School and became an Air Force Mechanic. After the Air Force he owned and operated a service station and did automotive repairs. Then we decided to move to Florida in 1959.

We first resided in Bradenton. At this time Bill was a salesman selling tools. Through his travels he met Dr. Gene Nutter. Dr. Nutter raised Bill's interest in the golf course busi-



*Tequesta Country Club, Bill's second home.*

ness. The next move was to Jacksonville, Florida where Bill accepted the assistant superintendent position at Jacksonville Beach Municipal Golf Course. Soon he became the superintendent there. With his business and mechanical background, it made the transition easy for him. We stayed at Jacksonville Beach for five years. In August 1965, Bill joined Tequesta Country Club.

**F.G.:** What were Bill's interest when he was not at the golf course?

**Joan:** As for hobbies, Bill enjoyed woodworking and remodeling our house. We added a room in the back of the house. He did most of it himself. He enjoyed designing, rearranging and just putting around the house.

He loved any kind of sport event, especially football. This was his favorite kind of entertainment. We would go to the local high school games and enjoy watching the boys play. He would always hire some of the boys for summer work to help them toward junior college. Bill became close to three or four of them, almost like his own sons. Although he was very masculine he was also kind and gentle. He also loved beautiful trees, flowers and plants. He could see the beauty in life.

**F.G.:** Bill influenced many people during his life time. Who influenced him towards his way of life?

**Joan:** It was Bill's father that influenced him in the way he felt about the out-of-doors and his basic philosophy of life.

**F.G.:** He had a strong spiritual faith.

**Joan:** A large part of Bill's life was being close to God. He had tremendous faith. He was President of the United Methodist Mens Club and ushered at church every Sunday for many years.

Bill had to have tremendous faith. He could not have gotten through the experiences of the past ten years without it. The last five years have been the worst. He had two surgeries every year, Chemotherapy and radiation. He had the best doctors and care possible. To see him bounce back after each surgery was a miracle. Getting back to his work meant so much to him. He really loved what he did. Bill showed us how precious life is.

**F.G.:** I understand the Town of Tequesta honored Bill.

**Joan:** They put the Village flags at half-mast for three days starting February 1st and issued a Proclamation of Appreciation for his community service.

**F.G.:** (Joan showed me the Proclamation.) They appreciated Bill's service to the community.

**Joan:** It's something I'll always treasure.

As I said goodbye to Joan and drove away from the house, I had a new insight into the man I thought I knew. A man of courage and strength. As I drove towards the golf course, I couldn't help but notice the beauty of Bill's quaint neighborhood and the Village he loved so much.

My next appointment was with Todd Miller the superintendent now in charge of Tequesta Country Club Golf Course. Driving into the maintenance area, I noticed everything was neat and in place, just as Bill had kept it.

Being early for my appointment, I didn't realize until I walked into Todd's office that I had interrupted his lunch. We talked about Bill and the golf course in general until he finished eating. And then we began:

**F.G.:** Todd, when did you meet Bill and come to Tequesta Country Club?

**Todd:** Three years ago I came to Tequesta looking for a superintendent's position. At the time I didn't know how fortunate I was to be asked to be assistant to Bill Wagner and work under his guidance. Bill had plans of retiring in February of 1988. Bill did not believe in hiring an assistant. It was a personal feeling of his that any 18-hole private operation did not warrant this position. With his cancer condition he had been fighting for ten years and planning for early retirement, Bill wanted to feel comfortable leaving the golf course in good hands.

**F.G.:** Tell us about your working relationship with Bill.

**Todd:** I thought I knew what I was doing when I came to work for Bill. I found out I didn't. Bill taught me so much. He was very demanding. He asked for 110% from all of his people all the time. But he was also being busy giving 150%. When you are working for someone like that, working twice as hard as you are, how could you not produce.

**F.G.:** How did his employees like working for Bill?

**Todd:** People liked working for him. I believe it's because he fought for good wages and benefits for his people. There are employees here at Tequesta that have been here 10 to 20 years. It's incredible when you look at employee turnover at other golf courses. In the three years I've worked for him, I never heard him raise his voice to anyone for any reason. One time we had an irrigation contractor out here putting in our new system. We had our controls marked off, dug up, and opened out. There it was 'Don't Hit That'. The contractor not paying attention, plowed right through it. When I came in with the contrac-

tor to tell Bill about it, I said, 'Guess What!' Bill didn't raise his voice, he didn't get mad, he didn't say anything other than, 'Go shut the power off; call the electrician'. He just handled the situation. Through Bill's actions and concern, the contractor felt he was in trouble. Bill had this ability with people. There was this sense he could radiate without yelling or getting angry.

**F.G.:** What are some of the special things you remember about Bill?

**Todd:** Bill's PRESIDENT'S MESSAGE he would write for the FLORIDA GREEN while he was President of the Florida Golf Course Superintendents Association would often be very inspiring. An example of one of these messages was, 'Don't ask this association to do something for you. Do something for it. Then it will benefit you.'

**F.G.:** Bill had strong feelings about supporting the profession.

**Todd:** He gave everything he could to the profession. He felt it was his moral obligation.

**F.G.:** Could you give us any final comments?

**Todd:** I have some big shoes to fill. And I can't do that. No one can replace Bill Wagner. I do

have the advantage of his 23 years of hard work getting this place to operate the way it does. We have mechanics that can't be beat. We have a crew that know how to do everything the proper way and do it as well as it can be done.

Being at Tequesta for 23 years, Bill had improved everything that gets done on a golf course. The program is quite different. A 42-hour work week is scheduled for ten hours on Monday, nine hours Tuesday, Wednesday and Thursday, five hours Friday, and weekend assignments are rotated. On Monday morning we close nine holes, then in the afternoon the other nine. This way we have all day to spray, topdress, or whatever we need to do without interference.

During Bill's first 15 years at Tequesta he completed a time study on every worker for every job on the golf course. His last eight years he did not do that because he knew how long it took to do each specific job. Jobs are planned so all are finished at the same time. The whole crew is in the compound together, washing up and getting ready for their second jobs. Everyone is ready to go at the same time.

I thanked Todd for our meeting and asked him if I could interview the crew. He explained, "It's an ex-



*Left to right: Bill Cousins, Gwayne Baker, Lem Cousins, Jessie Dale, Charlie Ware, Wilbert Edge, Archie Matthews, Todd Miller.*

cellent time, they are just coming in for lunch.” Todd guided me into their neat, clean breakroom and introduced me to the crew. The most incredible story unfolds, of many years of loyal employees and camaraderie between them and their former boss.

I explained to the crew I was doing a story on Bill and could they make some comments on their association with him.

F.G.: Let’s start the interview with Archie Matthews. He has been here 24 years, was Bill’s right hand man and a mechanic.

Archie: Personally he was like a father, big brother, and most of all a friend. If you had a problem you could sit down and talk with him. He would try to work with you and work things out. If you were feeling bad he would understand.

F.G.: How was he as a boss?

Archie: He was strong in a good way and treated us fair. If an emergency happened, and we had to be out here at seven in the evening digging a ditch, he would be right in there with us digging. We respected him for that. He never sat around and waited for the job to be done, he was right there with us.

F.G.: Anything else you can remember about Bill?

Archie: He would make things clear to the board or members. He had a way of explaining things so that anyone could understand it.

F.G.: Charlie Ware has also been here 24 years. Charlie, what did you think of Bill as a boss?

Charlie: Oh fine, He was a good man that did a good job and there is no doubt about it. He expected a days work for a days pay.

F.G.: Len Cousins has worked here 13 years as a mechanic.

Len: Well, near the end when Bill was having a bad day, he growled at me and Archie about something. But then he came back later and said: ‘Come here, I want to talk to you!’ He put his arms around our shoulders and said, ‘Now look, you are the last two guys I want to holler at.’ Even though Bill was feeling bad, he didn’t want to dwell on it or bother us with his feelings.

F.G.: Berchie Cousins has been here five years. Are you and Len Cousins related?

Berchie: Yes. We’re first cousins. (A chuckle from everyone.)

F.G.: Any comments?

Berchie: Everything I’ve learned about grass, I’ve

learned from Bill. If there was anything else I asked him and he didn’t know it, he would get the answer for me. He was that way with everyone.

F.G.: Ron Worcester is a ten year employee.

Ron: I still look for him to come back. He’s been gone so often and managed to come back from each operation. You just look. That was him out there and this was his course. I expect to turn around and see him. The way the Village honored him says a lot about the man.

F.G.: Caleb Christian has been here five years.

Caleb: I worked here for five years and left for four years. I came back to settle affairs when my parents died. I needed a job. My wife was expecting a baby. Mr. Wagner hired me without hesitation. I have known Mr. and Mrs. Wagner for as long as I can remember. Mrs. Wagner taught Sunday School to me and my two sisters. Mr. Wagner knew what he had taught me and my capabilities. He gave me a wage we could live on.

F.G.: Can you tell us any past experiences?

Caleb: When I was first here and learning, I drove the F-10 into a tree. I wrecked it good, as Archie can remember. Mr. Wagner was upset, but he didn’t holler at me. He was more of a father figure and made sure we learned by our mistakes. I guess he always seemed like a father to me and I a son to him. He had the father-patience. That’s why I enjoyed coming back.

F.G.: Wilbert Edge is employed here 18½ years.

Wilbert: He was a good employer and a friend. I was 18 when I started and he guided me straight. He would be the first person I would go to if I had a problem. If any of us would get out of hand, he would let you know that there’s nothing that couldn’t be solved. I got close to him. He brought the message to me when my father died. I began to rely on him. He was also like a father to me.

F.G.: Gwayne Baker, new on the crew, 1½ years.

Gwayne: He was a strong man in spirit. Even when he was very ill he would give you a strong handshake.

As I got up to leave, the crew offered me some cookies. They said Mrs. Wagner brought them by. They said she was always doing nice things for the crew.

Todd took me to the club to interview the office people Bill worked with.

**F.G.:** Kathleen Walls, 17 years.

**Kathleen:** He was a very fine man. He was considerate and polite. Never hurried you. A gentleman through and through. He would fight for his men to make sure they got what he thought they needed. He never complained, and was always cheerful and positive. Even when we knew he was suffering. I would think to myself that he did so well because he was a man of deep faith. Come along Christmas or a special event, he would get the Club Manager to have the kitchen cook up something for the crew. He always showed his appreciation and loyalty to his employees. His daughter, Peggy, does my income taxes.

**F.G.:** Estella Walker, 17 years.

**Estella:** Bill was a hard working man. He was excellent in business matters. Very articulate. I remember about six months ago he was talking about his retirement which would have been in February. He was looking forward to going to North Carolina and doing something with a property he had bought.

**F.G.:** Betty Harper, 5 years.

**Betty:** A couple of years ago, after an operation on his face, he grew a beard. We all kidded with him about being able to play Santa Claus. We all felt the same way about him. He was a terrific guy.

My final appointment was with Ed Ficker. He is the club professional. I met with him at his home.

**F.G.:** Ed, when did you meet Bill Wagner?

**Ed:** Bill and I came to Tequesta the same year. I came in February and Bill came in August, 1965.

**F.G.:** So you've had a chance to be associated with Bill the entire time he was at Tequesta. Please give us some comments about him.

**Ed:** I'm sure that the people you've talked to have said most all of the nice things you can say about Bill.

First and foremost he was a nice man and a gentleman. He had a great faith in the Lord. Served him well. He loved life. Took a genuine interest in people. Demanded a lot from his crew, and they respected him totally, and worked hard for him. The best description of Bill is that he was a good leader. He got out and worked with his people. Enjoyed every phase of his job.

I suppose, once in a while there is someone who passes through this land that makes a great impact on you. Because of his strong faith and our close relationship through the golf course, he was this kind of person to me.

As you know he was so active in your association and affairs. He was also interested in the make-up of the P.G.A. We had numerous conversations on the organization itself. He was interested in who organized it and its structure. He got some of his ideas for the Superintendents Association through the structure of the P.G.A. We had some nice conversations about both organizations. We shared a lot there. I was involved at one time as Vice President of the National Board. Our one-on-one conversations were on golf business in general, particularly about our operations at Tequesta Country Club. We didn't have regular meetings. We had one-on-one meetings almost daily; just short ones, and discussed a variety of things. I feel we had the best pro and superintendent relationship around.



*Todd Miller and Ed Ficker.*

**F.G.:** What kind of man did you perceive him to be in his work?

**Ed:** Bill was a very detailed man, when it came to undertaking new budgets and putting in a new irrigation system. He took pictures and made notes and diagrams. What he did he did well. Particularly when we put in new greens a few years ago. He was out there every minute watching the mixing of peat moss and sand, making sure the distribution was just right. That's just the kind of man he was.

The club gave us a combined 20th Year Anniversary Party and I remember Bill giving such a nice talk to the people. It just floored everyone. He could present

himself so well. He also had a flair for writing. His letters were also presented very well.

**F.G.:** What was it like the first year you and Bill were in Tequesta?

**Ed:** There was not much here 23 years ago. Only one food store, the Greater Gator, in Riviera Beach. All the bridges have been rebuilt. They were little old rickety bridges . . . even on U.S.1.

Tequesta experienced very slow growth the first few years we were here. The members had just taken over a year or so before we arrived. I think it was a good

time to come here. It was just starting to grow. The area experienced moderate growth the first ten or twelve years. Then it started to grow rapidly. The Village of Tequesta will never become commercial. It's just a nice quaint village.

**F.G.:** Thank you Ed for inviting me into your home and helping us pay tribute to Bill Wagner.

As I made the long trip back to Ft. Lauderdale I felt I knew a little more about this great man. Bill Wagner contributed immensely to our organization. He gave great quality of life to everything and everyone he touched. ■



*As the sun sets over Tequesta Country Club . . . So long for now Bill, we love you and we will miss you.*

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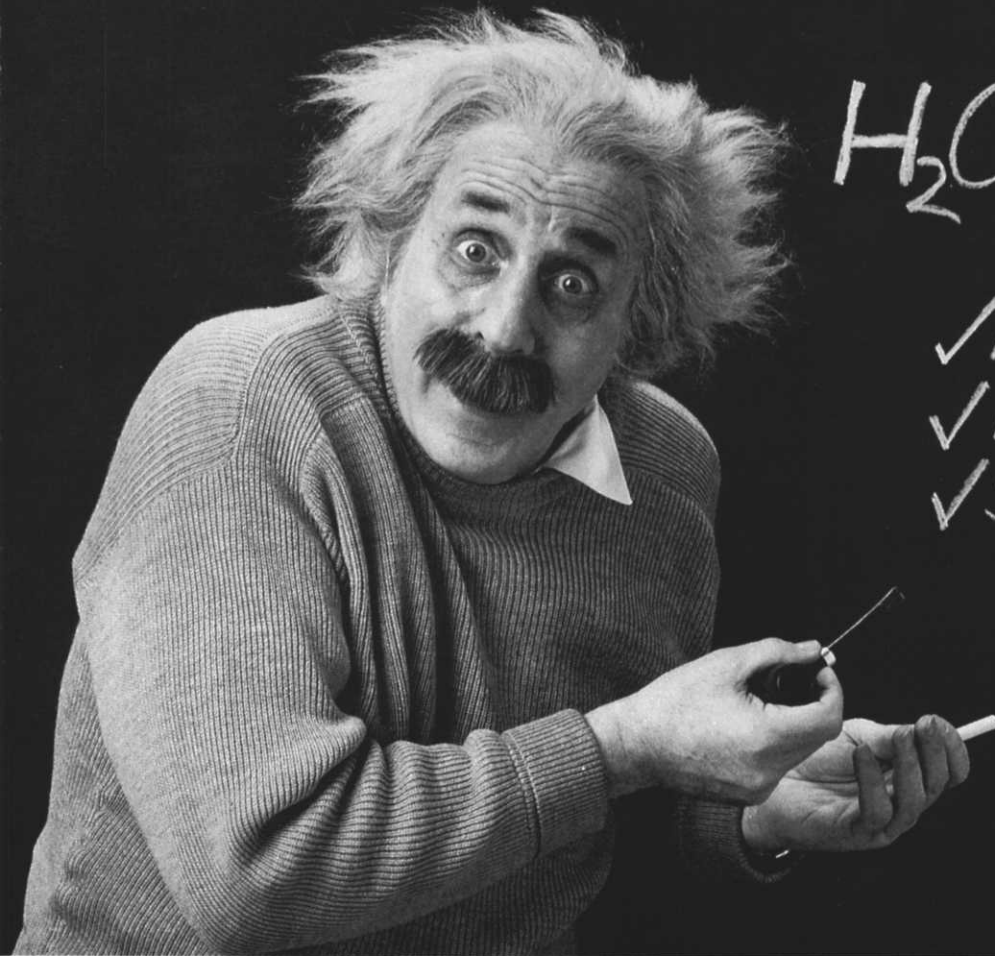
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# WILLIAM G. "BILL" WAGNER

by Rev. Robert L. Case

## EDITORS NOTE:

Following is the memorial service for Bill Wagner. This message was written by Bill's pastor and friend, Reverend Robert L. Case and delivered on February 1, 1988, at First United Methodist Church of Jupiter/Tequesta.

We are gathered together this afternoon with sorrowful hearts because of the passing of Mr. William Wagner. Bill, as we know him, is survived by his wife, Joan, daughters, Susan Early and Peggy Wagner, brother LeRoy Wagner, and two grandchildren.

Although we are sad, we also feel glad and have a sense of joy in the midst of our sorrow. This joy comes from God's promises, the many means He has provided for us to receive comfort, and from the assurance we have concerning the one for whom we sorrow.

The apostle Paul said in 2 Corinthians 1:3-4: "Blessed be God . . . the God of all comfort; who comforteth us in all our tribulation . . ."

How grateful we are for the many ways in which God comforts us. Let us think of a few of these.

1. He provides us with friends. Friends are a precious possession. Bill had many friends. He had many friends because he was a friend. If you want to have friends, you must be a friend. Bill had christian friends which are the best. You too, have friends who sympathize with you and bring you much comfort.
2. Then, God has given us loved ones who share our sorrow, as we sympathize with each other, we receive a strength and a comfort. Bill loved his family dearly. He loved all of you who are his loved ones. As you share together your sorrow, you are comforted and strengthened.
3. God has given us the ability to remember, which can be a source of comfort. There are many things that we remember about Bill that will bless our lives for years to come. He was a good man. By this we mean that he was honorable, trustworthy, faithful, gentle, kind, sincere. He was good in the christian sense, which is genuinely good.

We remember his love for life and beauty. He fought to live. A number of times he underwent critical surgery in his fight to continue living the life he enjoyed. He loved nature and all the beauties of God's creation. For 22 years he was Golf Course Superintendent of the Tequesta Country Club. He is past

president of the Florida Chapter of the Golf Course Superintendents Association of America. He is past president of the Florida Turf Association. He loved beautiful flowers, grass, trees, and shrubbery. Just last week as I walked out of his house with Joan, I remarked about the beautiful Begonias and Impatiens that were blooming in his lawn. Joan told me that Bill usually planted those, but that since he was unable this year, the men who worked with him at the Country Club had planted them.

Joan had read to him a statement somebody else had written that speaks to us so well of Bill's love for the earth. The statement is as follows: "The secret is not a green thumb. The real secret is patience and gentleness. People who take time to care for the earth and love what God has created enhance the earth and all its miraculous ability to bring forth the beauty of God's creation."

The Honorable Carlton Stoddard, Mayor of Tequesta, in a Proclamation of Appreciation for the memorable community service of Bill, tells so beautifully of Bill's love for beauty and his contribution to the community that I shall read the proclaim in its entirety.

Village Of Tequesta

PROCLAMATION

OF APPRECIATION

for the Memorable Community Service of  
WILLIAM G. WAGNER

WHEREAS, on January 29th, in the year of our Lord 1988, death brought to a close the life of William G. Wagner, esteemed Tequesta citizen and public servant who contributed immeasurably to the beauty and quality of life in our community; and

WHEREAS, the selfless service of Bill Wagner as Chairman of Tequesta's Board of Adjustment established guidelines for a more beautiful Tequesta; and in his role as

WHEREAS, Tequesta Country Club Golf Course Superintendent for 22 years, and Florida President of the Golf Course Superintendents Association of America, he created treasured landscape beauty and recreational enjoyment for the people of Tequesta and the state of Florida.

NOW, THEREFORE, BE IT RESOLVED —

That the Village Council of Tequesta join with our citizens in recognizing the lifetime contribution to our community of William G. "Bill" Wagner, beloved as "God's Gardener" and affectionately know to all as our friend.

In observance whereof, the flags at Tequesta Village Hall and Constitution Park for a period of three days from this date shall be flown at half staff. Duly authorized February 1, 1988, with the official seal of Tequesta affixed hereto.

---

Carlton D. Stoddard  
Mayor

(SEAL)

Attest: Bill C. Kascavelis  
Village Clerk

We remember Bill's love for Christ and the Church. He always managed to get released from the hospital sooner than the Doctors predicted. He was anxious to get home and back to church. Once when he came home only a few days after critical surgery, I went by his home the next day or so and was told he was at the golf course. He was faithful to duty and he was faithful to Christ and the church. Many times he would come home from having had surgery and the following Sunday he would be ushering - always with a smile and that firm handshake that made you know he was glad to see you.

We will always remember his courage and patience during his illness. He had several critical operations that were extremely painful but I never heard him complain. He went the limit in an effort to live!

The first time Bill had surgery, after I became pastor here, my wife and I went to Miami to see him. To our surprise, he was already up and out with Joan walking over the hospital grounds. And my, how faithfully and lovingly Joan stood by him. She was his constant companion and such a source of strength for him all the way to the end. He acknowledged his love and appreciation for such a wonderful wife, as well as wonderful daughters and other loved ones.

A few months ago he as president of the Methodist Men, an organization he loved, told of his illness. He said some people were healed, but God had not seen

fit to heal him. This, however, had not affected his faith in God. He was still a man of strong faith.

The last time he was able to talk to me was about a week ago and he could only say one word at a time. He was not conscious most of that time, but then he was and I asked if he felt better and he said, "Yes." I asked a couple other questions that he answered, "Yes." Then I said, "Bill, I know you are trusting in God." and he said clearly, "Yes." Then I said, "Goodbye, Bill." and he said, "Bye." His faith remained strong to the end.

His concern for others will never be forgotten. A week ago Thursday, which was the last day that he received any nourishment, I stopped by for a brief visit and he was sitting in his recliner leaning back. I shook hands with him and even though he was weak, he still had that firm handshake. I asked him how he was feeling and he replied, "Better today, but I want to know how you are." He knew I had been having some trouble with my back. That was an example of his concern for others.

4. We also receive much comfort from promises in God's word. Jesus said: "I am the resurrection and the life. He that believeth in me, though he were dead, yet shall he live." He also said: "Because I live, ye shall live also." Bill believed this and this gives us assurance concerning him. We are thankful for the confidence that he is no longer suffering but is in the presence of our Lord, where he shall dwell forevermore.
5. Finally, we are grateful that God is present with us to provide the comfort and strength that we need. Although we are frail in our humanity, we are strong in the Lord.

I want to close with words and scripture given to me by Joan, which is as follows:

**Joan said:** "My Bill is a valiant man, strong in the Lord to the end. God's grace was sufficient for him."

**His favorite Bible verse was Micah 6:8.** "He hath showed thee, O man, what is good; and what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God."

**Others that were favorites:**

**Isaiah 26:3-4,** "Thou wilt keep him in perfect peace, whose mind is stayed on thee; because he trusteth in thee." "Trust ye in the Lord forever: for in the Lord Jehovah is everlasting strength:"

**Romans 8:28-30.** "And we know that all things work together for good to them that love God, to them who are the called according to his purpose. For whom he did foreknow, he also did predestinate to be conformed to the image of his son, that he might be the firstborn among many brethren.

Moreover whom he did predestinate, them he also called: and whom he called, them he also justified: and whom he justified, them he also glorified."■



The FGCSA has been in existence and extremely productive for the past seven years. We now feel that we need to give annual recognition to a deserving Golf Course Superintendent.

This recognition will come in the form of an award, and will be most prestigious, similar to our profession's most highest award — the GCSAA Distinguished Service Award.

Therefore, selecting recipients will be a monumental task; making sure the proposed recipients are of the highest esteem, that they are deserving, that they have

performed outstanding achievements as a Golf Course Superintendent, and that they have given their time unselfishly in promoting Golf Course Management and unification of the Florida Golf Course Superintendent.

Rules for eligibility of nominees and assimilation of information on nominees was laid out by our Awards Committee. A name was selected. The name will be The Florida Golf Course Superintendents Association's *Distinguished Service Award*. Our first goes to Past President, *William G. Wagner (left)*, at the FTGA Annual Award Luncheon in Tampa on October 1, 1985. ■



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## **FT-GA's Most Prestigious Award Presented to Bill Wagner**

At the October annual meeting of the Florida Turf-Grass Association, a surprised and humble, Bill Wagner, accepted the Wreath of Grass Award from out-going President Mike Swanson, along with the gavel representing the beginning of his term of office as President of the Association.

The Wreath of Grass Award is the highest honor the Association can bestow on a person, and is presented to one who has made a significant contribution to the turfgrass industry.

Bill was born in Philadelphia and grew up in Quakertown, Pennsylvania. Moving to Florida in 1959, he operated his own service station, candy and tobacco business. Being in the auto mechanics business with an interest in agriculture, he was eventually led into the golf course business, to which he has devoted over twenty years. He has been the golf course superintendent at Tequesta Country Club for the past nineteen of these years. He has served on the Curriculum Advisory Commission for the mechanics program at Lake City Community College.

While serving as President of the Florida Golf Superintendents, Bill effectively organized the state association so that it became a powerful political influence in the national association. He has also been very effective working very closely with the South Florida Water Management District in establishing rules for restrictive water use in Florida.

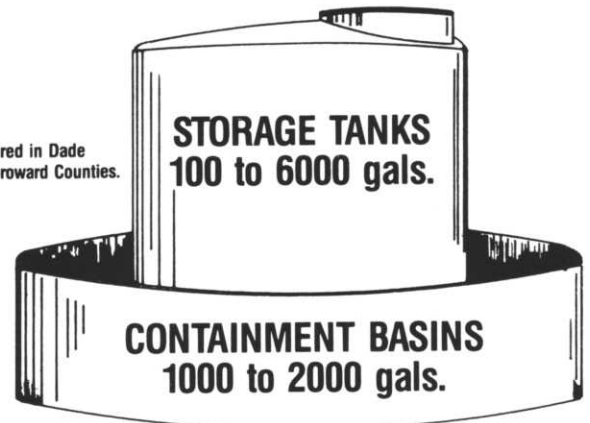
His colleagues agree that Bill is a quiet *force* in the turfgrass industry. Congratulations, Bill, for your accomplishments and receiving this distinguished award! ■

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# Sunlight and Your Skin

By STEPHEN E. CHIARELLO, M.D., P.A.  
Dermatology & Dermatological Surgery  
Diplomate of the American Board of Dermatology

## Why Avoid the Sun?

Sunlight permanently damages skin. Ordinary sun exposure during tanning and outdoor sports causes permanent skin changes. These changes build up over the years, so that even moderate repeated sun exposure causes visible skin damage. Most of the wrinkling, roughening, and freckling that appears on the face, hands and arms of white adults comes from sun damage, not age. You can see this if you compare less sun-exposed areas, such as your abdomen or the undersides of your arms, with sun-exposed areas such as your face, neck, or upper surfaces of your arms. The natural coloration of your skin, pigment, protects you from the damaging effects of sunlight. Persons with fair skin, who have little pigment, are more prone to sun damage than dark-skinned individuals.

## The Skin-Damaging Effects of Sunlight

The skin-damaging effects of sunlight gradually lead to roughening, freckling, and wrinkling. Many people in their 30s and 40s are unhappy because their wrinkled, roughened, sun-damaged skin makes them appear 10 or 15 years older. Unfortunately, there's no way to undo these changes. Young people should realize that they'll ultimately pay a steep price for the temporary glamour of a deep tan.

A more serious effect of sun damage is skin cancer. Sun damage is the chief cause of skin cancer. Here again, fair-skinned individuals are much more susceptible. Skin cancer rarely occurs in blacks. As you might expect, skin cancer tends to occur on sun-exposed areas such as the face, neck, shoulders, and arms. While skin cancers can usually be removed by minor surgery in a doctor's office, it's better to prevent them.

## Ultraviolet Rays — The Invisible Enemy

Sunlight contains both ordinary, harmless, visible light and shorter, invisible light rays called ultraviolet light. Tanning, burning, and skin damage from sunlight are caused by ultraviolet rays. Since ultraviolet rays produce both tanning and skin damage, it's impossible to tan "safely" and avoid permanent skin damage. Discussions on sunbathing that describe "safe" tanning refer to the avoidance of sunburn. By proper timing, most persons can get a deep tan without a sunburn. However, no one can get a tan without some skin damage.

## Sun-Protective Measures

There are two basic ways of protecting your skin from the damaging effects of ultraviolet rays: (1) blocking out all light with an opaque material such as clothing and (2) using a chemical sunscreen that selectively absorbs ultraviolet rays. Blocking out all light with clothing is most effective. Certain sun protectives depend on the same principle. They coat the skin with a paintlike pigment that mechanically blocks light. They work well, but they're messy and rather unsightly.

There are also many clear sunscreens that absorb ultraviolet light. These "clean" sunscreens contain either PABA (para-aminobenzoic acid) or a benzophenone compound. Some of the PABA-containing sunscreens are taken up by the skin and will provide some protection in the water, provided they're applied one or two hours before swimming. An occasional person is allergic to PABA or its derivative. So please try PABA-type sunscreens on a small area of skin before spreading it all over your body. The other chemical class of sun protectives, the benzophenones, rarely cause skin allergy. Benzophenones wash off, however, and therefore do not protect swimmers. Some benzophenones have a bitter taste that can be annoying when applied near the mouth.

There are many sun protectives on the market. If they're designed and act as "sunlight blockers" and contain a PABA derivative or benzophenone, they're probably adequate. Water removes most sunscreens. Remember to put on another coat of sunscreen after swimming or bathing. If you're sweating heavily, use some more sunscreen every hour or two. If you're in very bright sunlight, it's wise to protect your skin as much as possible with clothing (long sleeves, gloves, wide-brimmed hats) and use one of the "clean" chemical sunscreens on the parts of your skin exposed to the sun.

Protect your lips from sun damage. The darker lipstick shades are effective for women. Men — and women who don't wear lipstick — should use ultraviolet-absorbing lip pomade. Women can use make-up with a sun protective. The sun protective should be applied first, then the make-up itself — especially if heavily colored — provides some sun protection.

You should aim to minimize sun exposure, not avoid it. Being outdoors is fun and healthy; don't let fear of sun damage keep you inside during sunny weather. Do use sun protectives when enjoying sports or a walk in the sun.

## Specific Sun Protection Instructions

1. Avoid the 10 a.m. to 2:00 p.m. sun whenever possible as 70% of the earth's harmful radiation reaches us at that time.
2. Wear protective clothing: a broad brimmed hat and long sleeved, tightly woven white cotton shirt.
3. Apply a sunscreen containing both PABA and Benzophenone to dry skin at least one (1) hour before sun exposure for maximum protection. Wipe or wash residual from palms. Let dry before putting on clothes.

Hydration of Skin: (Bath or Shower) Immediately before application, provides an increased "protection reservoir". Daily application maintains this "protective reservoir". Always reapply after swimming or excessive sweating.

Exposed areas of the skin most likely to suffer sun damage are the face, (especially ears and nose, the scalp if you are bald), the back of the neck, arms, top of the hands and exposed parts of the chest. ■



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## DON'T EAT COCONUTS FROM TREES TREATED FOR LETHAL YELLOWING

By: Chuck Woods

Please don't eat the coconuts. That's the advice of a University of Florida palm expert who warns that coconuts from trees treated with antibiotics to stop lethal yellowing could be hazardous to your health.

With the recent outbreak of the palm disease in southwest Florida, many cities and homeowners are injecting palms with oxytetracycline, a drug that causes resistance to the disease as long as the treatment is repeated every three or four months. And now there's concern about the safety of eating coconuts from these injected palms.

"For a normal person, eating coconuts from palms that have been injected with oxytetracycline would have no effect on that person. But some people can have allergic reactions to some antibiotics," said Dr. Henry Donselman of the Institute of Food and Agricultural Sciences (IFAS) research center in Ft. Lauderdale.

"Oxytetracycline is also known to cause discoloring in the developing teeth of newborns and toddlers," he said.

"The bottom line on eating coconuts from injected palm trees is not how safe it is but the fact that it is contrary to the product label recommendations for use of the drug to prevent lethal yellowing," he explained.

He said there is a distinction between a chemical labeled for a food crop and one labeled for an ornamental crop. The use of oxytetracycline on "ornamental" palms is clearly stated on the label.

"This means we need to recognize that this is a non-food label and that coconuts from these trees are not to be used for consumption," Donselman explained.

Lethal yellowing is a serious disease that strikes the original "Jamaica Tall" coconut palms in south Florida. Although most of these palms have already died of lethal yellowing on the east coast of Florida, large numbers still remain on the west coast, particularly in Lee and Collier counties.

Donselman said injection of Jamaica Tall palms is an effective way to combat the disease. "However, to insure the continued overall tropical beauty of palms in our landscape, we need to place a strong emphasis on underplanting our existing, susceptible palms with resistant ones such as the Malayan Dwarf and hybrid Maypan.

"Not only will these add to our landscape, but they will provide us with coconuts that are perfectly safe and legal to eat," Donselman concluded. ■

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**STATEMENT OF PRACTICAL TREATMENT:** If swallowed, give a large amount of water to drink, make person vomit and call a doctor. In case of eye contact, wash eyes with fresh water for 15 minutes. If irritation continues, see a doctor. Wash hands thoroughly after handling. **Note to Physicians:** Emergency Information—call (415) 233-3737. Acephate is a cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM may also be used in conjunction with atropine but should not be used alone.  
**ENVIRONMENTAL HAZARDS:** This pesticide is toxic to birds. Do not apply directly to water or wetlands. Cover or soil-incorporate spills.  
This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting treatment area.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **READ ENTIRE LABEL AND PAMPHLET. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

**REENTRY STATEMENT**

Keep all unprotected persons out of operating areas or vicinity where there may be drift. Do not enter treated areas without protective clothing until sprays have dried. Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information. Written or oral warnings regarding use of protective clothing and accidental exposure must be given to workers who are expected to be in treated areas or in areas about to be treated.

**DIRECTIONS** Table of Equivalents

Amount of ORTHENE 75 S Soluble Powder	1-1/3 lbs.	1 lb.	2/3 lb.	4 oz.	2 oz.
Amount Active Contained	1 lb.	3/4 lb.	1/2 lb.	1/5 lb.	1/10 lb.

**SPECIALTY USES**

Crops	Insects	Amount ORTHENE 75 S Per Acre	Further Use Instructions	Days to Harvest
Non-Crop Areas	Imported Fire Ants	<b>Mound Treatment—Dry Method:</b> Evenly distribute 1 to 2 teaspoons over the mound. <b>Drench Method:</b> Mix 1 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest. Grass in treated area may be injured. Do not treat mound more than once per season.	

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1/3 lb.	2-1/2 oz.	1
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1 lb.	7-1/2 oz.	3
1-1/3 lbs.	10 oz.	4

\*Use in 16 oz. measuring cup.

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Plants	Insects	Amount ORTHENE 75 S Per 1,000 Sq. Ft.	Time of Application	Recommended Application
Turfgrass	Fall Armyworm Yellow Striped Armyworm Southern Armyworm	1/2 to 1.2 oz. (1-1/3 to 3-1/4 lbs. per acre)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 75 S Soluble Powder per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage.
	Cutworm	1.2 to 2.4 oz. (3-1/4 to 6-2/3 lbs. per acre)		
	Sod Webworm (Crambus spp.)	1/2 to 1 oz. (1-1/3 to 2-3/4 lbs. per acre)	As sod webworms begin to appear. Use the higher amount when quick knock-down is needed or with heavy infestations. Repeat application may be necessary. Do not repeat at more than 1 week intervals.	Apply the specified amount of ORTHENE 75 S Soluble Powder per 1,000 sq. ft. to obtain good coverage.
	Leafhopper	1 oz. (2-3/4 lbs. per acre)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	Apply the specified amount of ORTHENE 75 S Soluble Powder per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage.
	Mole Crickets (Except CA)	1.0 to 1.9 oz. (2.66-5.2 lbs. per acre)	As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate.	Apply the specified amount of ORTHENE 75 S Soluble Powder per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage. Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application.
	Greenbug (Schizaphis graminum) Grasshoppers	1/2 oz. (1-1/3 lbs. per acre)	Apply when insects or their damage first appears. Repeat as necessary. Application is not to be repeated at more than 1 week intervals.	Apply the specified amount of ORTHENE 75 S Soluble Powder. Use 4 gals. of water per 1,000 sq. ft. to obtain good coverage. Do not mow turfgrass for at least 24 hours after application.

**Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.**  
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**Diseases it controls**

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**How to apply**

Spread Subdue granules uniformly over turf, or container, bench, or bed grown ornamentals, and irrigate with enough water to thoroughly moisten the root zone. Within a listed rate range, use the lower rate for the shortest interval given, and the higher rate for the longest interval. Under severe disease conditions, use the highest rate and the shortest interval specified.

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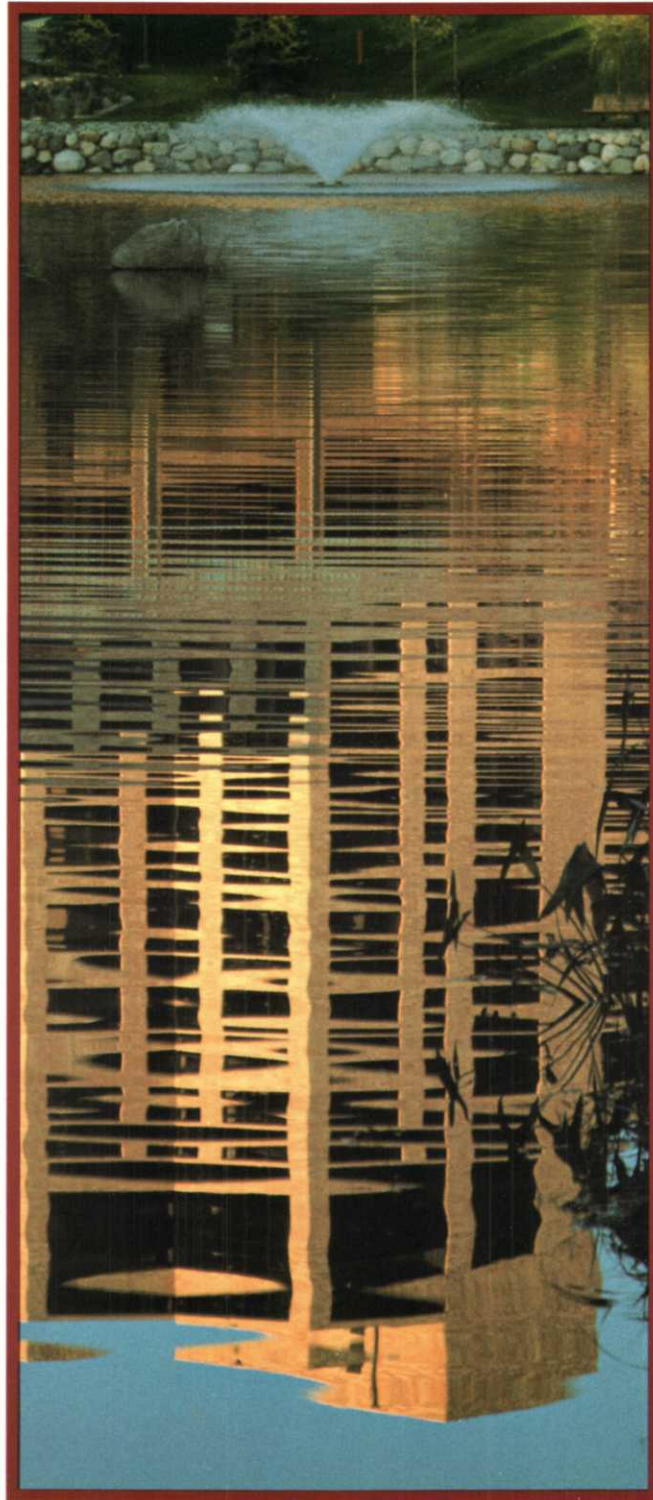
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Crystal Clear



# Barebo – A profile of continuing commitment



The success story of Barebo, Inc. began with a goal to develop more natural, energy efficient and simple methods of treating water quality problems. Through the manufacture of Otterbine® Aeration Systems, Barebo, Inc. has met many of the water management needs of golf courses, parks, retention ponds, recreational lakes and waterways as well as wastewater treatment facilities and commercial fish farms.

With the assistance of a dedicated team of engineers, our product line has grown in less than ten years into one of the largest selections of aerators available today. Much of our company's success can be attributed to the fact that we are family owned and operated. That means that we take pride in every product we produce. After all, it must be good enough to carry the Barebo name.

Each year, more people are realizing the many benefits of Otterbine Floating Aerators. In addition to enhancing the natural beauty of its surroundings, an Otterbine Aerator prevents the build-up of algae, aquatic weeds, bottom sludge and unpleasant aquatic odors resulting in cleaner, clearer water. This is accomplished through a process called aeration. As the Otterbine's spray droplets travel through the air, they absorb atmospheric oxygen, transferring this oxygen to the water as the droplets strike the surface. Hence, the greater the pumping rate, the greater the aeration factor. An Otterbine's oxygen transfer rate (OTR) is approximately 3.6 pounds of dissolved oxygen per horsepower hour.

Otterbine Aerators have prevented algae blooms, sludge build-up and weed growth

in applications throughout the U.S. and abroad. These aerators have met the water management requirements of golf courses, parks and schools, hospitals, industrial complexes, cemeteries, housing developments and amusement parks. And, the range of Otterbine applications is continually expanding.

Recently, there has been a dramatic increase in the variety of aerator systems we offer. More sizes and types are now available to meet specific pond and lake needs. Although Barebo has enlarged its product line and more than tripled in size, you will find that we still uphold the same commitment to producing quality products that we were founded on. Our pledge is to continue to meet the many needs of our customers and to explore new markets that can benefit from the use of Otterbine Aerators.

## Natural Water Quality Management

Otterbine Aerators are designed to biologically treat the true causes of algae blooms and unpleasant aquatic odors—poor water quality. Due to the systems' spray and wave-making action, adequate amounts of oxygen are added to and circulated through the water with numerous beneficial effects on its appearance and quality.



# Otterbine® Aerators

The Otterbine speeds up the bio-degrading process of organic wastes and fertilizer run-off by the addition of oxygen and circulation. The added dissolved oxygen helps the bacteria in the pond respire and break down unpleasant odors and organic wastes. The result is clearer, cleaner, odor-free water. Otterbine Aerators greatly inhibit the growth of algae which can gradually destroy oxygen concentrations required by all forms of aquatic wildlife (plant and animal), clog irrigation equipment and create an unsightly, stagnant appearance. By continually circulating large amounts of water the aerator prevents thermal stratification. Thermal stratification is the phenomenon where the upper layers of the lake or pond become much hotter than the lower depths. Algae has a tendency to thrive in warmer waters.

Other methods of water quality control, such as algaecides and lake dyes treat the symptoms of poor water quality, algae and unpleasant odor, but fail to manage the root of the problem—poor water quality. The use of expensive and time-consuming chemicals does not solve organic waste and aquatic odor problems and requires that strict government application regulations be met. Through the use of an Otterbine Aerator, chemical use is often eliminated or greatly reduced.

Aeration systems are an environmentally acceptable way to improve water quality by helping to solve problems at the onset and preventing their re-occurrence later.

## Sizes and Capacities

These floating mechanical pumps are compact, self-contained units that range in primary pumping capacity from 80 to 3,000 gallons of oxygen-enriched water per minute—in addition, the secondary circulation currents move 10 times the primary pumping rates. Our small 1/20 horsepower units circulate over 600,000 gallons of water in a 24-hour period, and our largest unit circulates over 20 million gallons per day.

Units are available in sizes ranging from 1/20 to ten horsepower. They can be installed in pools as small as 10 feet in diameter with as little as 18 inches of water. This complete, turnkey system is delivered fully assembled and ready for installation. No foundations, external

pumps or other costly plumbing fixtures are required.

An Otterbine Aerator can be installed by two people in about one hour by simply floating the unit to the desired position, mooring or anchoring in place and connecting the system to on-shore electrical service through a furnished underwater power cable. It is recommended that all electrical work be performed by a qualified electrician.

Aerators designed by Barebo are ideal for use during the entire year. Special circulator cap attachments provide operation at below freezing temperatures by circulating warm water from the bottom and mixing it with cooler surface waters. This process raises the overall pond temperature. The circulator assembly will keep a sufficient area open around the Otterbine to prevent a total freeze-up and winterkill of fish.

## Enhanced Surroundings

Special stainless steel Otterbine Aerators can be used in all types of water—from harsh, alkaline desert lakes to brackish salt water. And, the best bonus of all is the way these aerators enhance their surroundings with dramatic and graceful water sculptures.

The grounds of numerous facilities—golf courses, recreational facilities and amusement parks, industrial complexes and hospitals—have all benefited from the beauty and sound of the softly falling water.

## Nationwide Dealer Network

Begin solving your water quality problems today by contacting one of our many qualified dealers from our nationwide network. Through this dealer system and our main Pennsylvania facility, you can be assured of fast, effective service. Our professionally trained personnel can even “trouble-shoot” over the telephone if necessary!

Your Otterbine dealer will analyze the specific problems of your lake or pond and prescribe an Otterbine that will efficiently and cost-effectively solve those problems. Factory application engineering services are also available through your Otterbine dealer.



**“We’re looking forward to an algae-free, odor-free summer...for the first time in the Club’s history!”**

–Paul J. Bihuniak  
Chairman of the  
Cavalry Club Landscape  
Committee  
Manlius, New York

## CONSTELLATION



The dramatic display pictured is created by a 500 Rocket surrounded by 300 Sunbursts. A Constellation can be designed using any combination of sizes and shapes of spray patterns. Your imagination is your only limit.

## STARBURST



Simulating natural aeration from wave and wind action, the Starburst unit produces an attractive spray that effectively stimulates biological water cleanup processes.

## PHOENIX



Two beautiful spray patterns emerge from one unit to create a dynamic pattern.



Shown in this photo is an Otterbine Aerator accessory, the Rock Float Cover, described on page 6.

# SUNBURST



Manufactured of stainless steel components for corrosive applications or aluminum for other usages, the Sunburst is available in a variety of sizes and is designed especially for tough conditions.



**“We plan to purchase a second Otterbine Aerator. With today’s inflationary costs of chemicals and environmentalists on stand-by...the mechanical aerator is the way to go!”**

– Bob Orazi  
Golf Course  
Superintendent  
of the Hunt Valley  
Golf Club  
Hunt Valley, Maryland



# STANDARD



Available in various horsepower sizes, these heavy duty units are the “work horses” of the Otterbine line.

# ROCKET



The Rocket’s high-shooting spray is ideal for use in landscape architecture applications, providing an extremely dramatic and attractive effect.



# An inside look at our Otterbine Aerator

High-density, polyethylene one-piece float with convenient ribbed grips.

Precision-pitched, stainless steel impeller for improved pumping rates.

Highly efficient, smooth operating, dynamically balanced rotor.

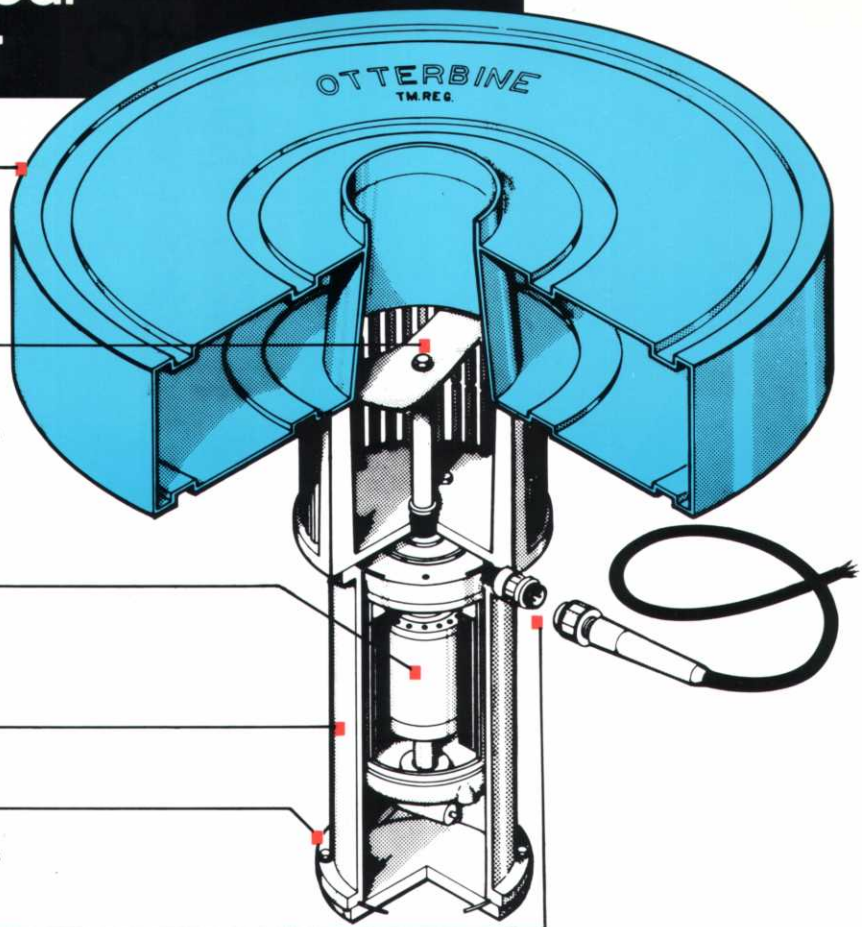
Silicon-aluminum motor housing.

Easy removal of bottom plate speeds maintenance.

Plug-type underwater connector resists leakage.

- Smoothly molded flow chamber for unobstructed pumping.
- One-piece water intake casting with screen to prevent entry of foreign objects.
- Long-life, submersible motor.
- Motor bearings, continuously lubricated in reservoir of circulating transformer oil especially designed for Otterbine Aerators by a major oil company. Motor runs cooler and longer due to heat transferral to water through aluminum motor housing.
- UL approved, triple-insulated underwater power cable available in one-piece lengths up to 1000 feet.
- Stainless steel fasteners.
- Shorter driveshaft minimizes vibration which prolongs bearing and seal life.

**Note: Plastic foam-filled float remains on water surface even if damaged.**



## Power Control Center



The Otterbine Power Control Center is available in capacities that range from 115V single phase up

to 460V three phase. Designed with built-in protection from phase unbalancing, power surges, low voltage and spikes, these control boxes are UL, CSA and ETL safety tested.

Each Control Center is a NEMA 3R weather resistant combination starter equipped with a hand-off automatic switch and 24 hour operational timer.

GFI is suggested for areas where people are using the water for recreational purposes. Custom panels are available at additional cost.

## ETL Approved

Otterbine Aerators meet the high safety standards of the Electrical Testing Laboratory. Units are rigorously tested to ETL specifications. Make sure any equipment you purchase is safety tested and rated by ETL or UL.

# Technical Data

Model	HP	Voltage*	Running Amperage Draw	Spray Height in Feet	Spray Diameter in Feet	Pumping Rate GPM	Induced Circulation Rate GPM	
Standard-STD	100	115	13.4	2.5	7	625	3125	
		230	7.7	2.5	7	625	3125	
	200	230	12.5	3	10	1180	5900	
		300	3	9	4	12	1500	7500
	500	5	230	4.5	4	12	1500	7500
		230	16	5	14	2000	10000	
		460	8	5	14	2000	10000	
Starburst-SB	200	2	230	12.5	4	20	1180	5900
	300	3	230	9	5	26	1500	7500
		460	4.5	5	26	1500	7500	
	500	5	230	16	6	32	2000	10000
		460	8	6	32	2000	10000	
Sunburst-SNB	100	1	115	13.4	4	15	625	3125
		230	7.7	4	15	625	3125	
	200	2	230	12.5	6	25	1180	5900
		300	3	230	9	7	30	1500
	500	5	230	4.5	7	30	1500	7500
		460	16	8	35	2000	10000	
	1000	10	230	8	8	35	2000	10000
		460	24	10	40	3100	15500	
		460	12	10	40	3100	15500	
Rocket-RKT	100	1	230	7.7	10 - 11	4	400	NA
	200	2	230	12.5	15 - 16	4	590	NA
	300	3	230	9	19 - 20	4	750	NA
		460	4.5	4	750	NA		
	500	5	230	16	19 - 20	4	750	NA
		460	8	26 - 28	4	1000	NA	
		460	8	26 - 28	4	1000	NA	
Phoenix-PHX	200	2	230	12.5	Inside 12 Outside 6	Inside 3 Outside 22	1180	3125
	500	5	230	16	16 8	3 32	2000	10000
			460	8	16 8	3 32	2000	10000
LSS350	1/3	115	5.0	3	6	185	925	
		230	2.5	3	6	185	925	
LSS350 RKT	1/3	115	5.0	5	2	185	925	
		230	2.5	5	2	185	925	

Constellation — The Constellation consists of a base unit and any number, size, and type satellite units you desire.

\*All 230V motors are available in 208V at no extra cost. All 2HP motors and lower are single phase. All 3HP and larger are three phase. The above specifications are computer results and may vary under local conditions.

## Otterbine Aerator Accessories Creating Dynamic Effects Around the Clock

**The Otterbine Fountain-Glo™** Lighting system extends the beauty of your daytime waterscape. Two to six lights can be mounted on each unit. Heavy duty transformers are available for multiple lights and longer cord runs. A light sequencer is now available that can bring up different colored lights at timed intervals resulting in a dramatic light-show at night.

The Fountain-Glo unit comes with an automatic timer that can be programmed to turn on and off according to your needs. Best of all, it operates on a safe, low-

voltage electrical system that keeps costs to a minimum. For just pennies a day, you can display a beautifully glowing flowing aerator at night.

**The Rock Float Cover** accessory gives the impression that your aerator is completely natural, as the water shoots geyserslike from this decorative, rock-look-alike cover.

**A Circulator Cap** may be added to keep waterways and ponds open in the winter-time by directing warm water to the surface.



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## “DESIGNED TO PROTECT GROUNDWATER”

IFAS Researcher Patents New Turf  
Herbicide For Commercial Market

By: Chuck Woods

GAINESVILLE — A turf herbicide designed to reduce the danger of groundwater contamination has been invented and patented by a researcher with the University of Florida's Institute of Food and Agricultural Sciences (IFAS).

The herbicide will control weeds in lawns, golf greens and other grassy areas. It will be marketed under the “Premier” trademark by the Ciba-Geigy Corporation, Greensboro, North Carolina, as soon as the product's federal registration is approved by the Environmental Protection Agency (EPA).

Dr. Merrill Wilcox, professor in the IFAS Agronomy Department who synthesized the chemical compound, has assigned patent rights for the new product to the University of Florida, which will receive royalties from sales of the chemical.

Wilcox, who is licensed to practice patent law, says EPA approval is the only remaining obstacle to getting the product ready for the commercial market. He hopes EPA will clear the product within the next year.

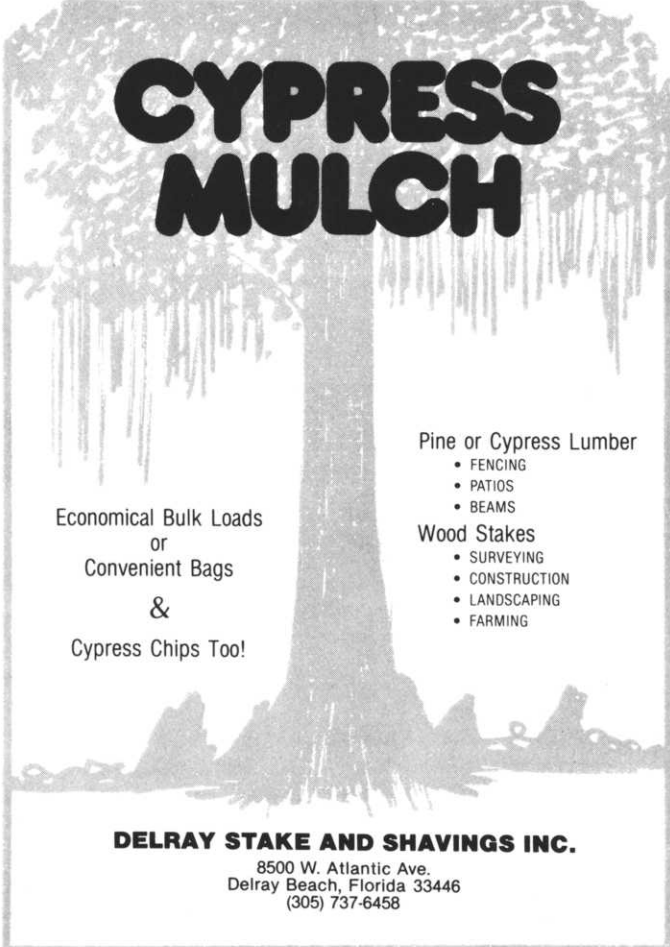
“We're very confident EPA will look favorably on this herbicide because of its low toxicity and the fact it will be for a non-food use. The water solubility of this chemical is so low (18 parts per billion) that there will be no danger of ground water contamination in areas like Florida where chemicals tend to move rapidly through the soil profile,” Wilcox explains.

Wilcox says the product is also being evaluated for weed control in non-bearing citrus where it also shows considerable promise.

“The extremely low water solubility of Premiere will protect sensitive Florida aquifers which are often very easily recharged from the surface in citrus soils such as those on the ridge,” he explains.

“When it comes to developing and actually marketing a new pesticide, only one in 18,000 compounds ever makes it from the laboratory through the lengthy and complicated efficacy and regulatory process all the way to the commercial marketplace. For this reason, it's easy to see why this type of research is often described as being ‘high risk’ with little chance for return on investment.

“In this case, however, it looks like our research effort over the past seven years will pay off, resulting in a commercially viable product for a rapidly growing segment of the worldwide herbicide market. The market for controlling weeds in turf grass is second only to that for controlling weeds in corn,” the IFAS agronomist explains. ■



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# WE'LL HAVE CHECKS, NOT HATS, IN OUR HANDS'

FTGA begins project  
to raise \$5 million fund  
for turfgrass research

By Larry Kieffer

ORLANDO, Fla.

The 1987 Florida Turfgrass Association Conference and Show in Tampa Oct. 10-13 probably will be remembered most as the launching pad for the organization's ambitious five-year drive to create a \$5 million endowment fund for turf research.

If the effort is successful, with apologies to the late Winston Churchill, never again will such little things have caused so few to do so much for so many.

The "little things" are the two-inch-long mole cricket and the microscopic nematode, which together account for more turf damage than all other causes combined.

The "few" are the members of the FTGA in general, and golf course superintendents in particular. Although golf accounts for less than 10 percent of Florida's \$8 billion turf industry (some claim it's less than five percent), golf course superintendents make up about half the FTGA membership. And they account for nearly 80 percent of all money raised for turf research.

The "many" are Florida's homeowners, who now spend more than \$37 million a year just to repair the damage done by mole crickets. In all, private homeowners account for \$4.2 billion in turf care expenditures and professional lawncare services spend another \$2.5 billion. No figures are available for either the sports turf industry as a whole or the golf industry in particular.

While golf course superintendents may be unsung heroes in the battle against turf problems, by no means are they completely altruistic.

"If we don't solve the mole cricket problem, they will cause the demise of the golf game in Florida," said Bob Yount, newly appointed vice president for development of the Florida Turfgrass Research Foundation, a mechanism created by the FTGA. Yount's job is to raise the \$5 million and administer the proceeds.

The 51-year-old Yount spent the last 10 years in Orlando as a field sales rep for Elanco Products, the turf chemical branch of pharmaceutical giant Eli Lilly. He went to work for Lilly shortly after graduation from Butler University in Indianapolis with degrees in marketing and psychology.

He is well known to Florida's turf professionals who will be the source of his \$5 million war chest. A long-time resident of Arnold Palmer's Bay Hill Club, Yount sports an eight handicap. He was general chairman last year of the Hertz Bay Hill Classic so he knows his way around Florida's golf circles.

Since he is not a professional fundraiser, Yount will rely heavily on advice from Larry Pauley, a consultant with Ford Thompson of Atlanta, a firm hired by the FTGA to help set up the research foundation and raise its endowment.



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"We absolutely have to broaden the base," Yount said. "So far, about 80 percent of the money has been coming from the superintendents. We have to get everybody involved in this—not just the turf industry but golfers as well. Five million dollars is a lot of money."

In the meantime, Yount and Pauley have primed the money pump and already more than \$60,000 has been raised, most of it from a special \$100 "charter membership" offer that will close at the end of the conference and show.

"Those \$100 checks are rolling in," Yount said. "They get a lapel pin and I guess everybody wants to be wearing one at the show." Most of the checks have been from superintendents.

"Don't hold me to the figure, but I'd guess that about 80 percent of the money is from (superintendents)," he said.

After the conference, individuals will be asked to contribute in one of six categories ranging from \$500 "partners" to members of the "president's council," with initiation fees of \$50,000 and up.

Precious minerals is the metaphor for corporate donors. The five categories start at bronze (\$500) and work their way up to diamonds (\$10,000).

Yount expects the five-year drive to start slowly and gather momentum, with more than half the money being raised in the second half of the drive. He didn't give any intermediate goals.

When the full amount is raised, the foundation will be able to bestow more than a \$500,000 annually in research grants.

"And I have a laundry list as long as your arm," he said. "Mole crickets and nematodes are the glamor projects, but we need to look a lot of things like drought stress, turf regulators, warm-season grasses . . . I could go on and on."

He also stressed that the solutions probably will be biological rather than chemical.

"I think in your lifetime and mine, we're going to see the elimination of chemical treatment of turf," Yount said.

The research grants will be decided by five members of the foundation's executive committee, who will take an active, rather than passive role in passing out the money. That is, instead of waiting for researchers to submit grant proposals, they will approach "any institution that does credible research on warm-season turf" with specific proposals.

"Instead of going to those colleges and universities with hat in hand," Yount said, "we'll go with check in hand and say, 'Here's the money. Now this is the job we want done.'" ■

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# FERTILIZATION TECHNIQUES FOR YOUR TREES AND SHRUBS

By Tom Teets, Urban Horticulturist Palm Beach County

There have been a lot of questions lately about the best method to fertilize trees and shrubs in the landscapes. What do you think we should do; punch holes and pour fertilizer in (spiking), stick a pipe below the soil and inject liquid fertilizer (deep-root feeding), spray fertilizer on the leaves (foliar feeding), should we drill a hole in the tree trunk and inject into the tree (injection), or scatter fertilizer on the soil surface (broadcast)? I don't know how you feel about fertilizing, but most people prefer to get it done as quickly, most efficiently and most effectively as possible. Certain situations, conditions and deficiencies will influence the method to be used as well.

Let's look at the different methods and what they have to offer.

1) **Spiking** — Granular fertilizer is placed in holes either dug or punched in the soil. These holes are scattered beyond the dripline around the tree. The problem occurring in this situation is the fertilizer is being applied at a high concentration to a small area. Where the fertilizer is applied the high salt concentration may burn

roots, while in areas between the holes the roots receive no fertilizer. In sandy soils fertilizer moves only downward and very little laterally.

- 2) **Deep-root feeding** — This Method uses primarily soluble liquid fertilizers which are injected below the soil surface. For quick green-up deep-root injection can be effective if the fertilizer is applied very shallow. In the vast majority of cases 80-90% of tree roots are located in the top 8-16 inches of soil. Most trees do not truly have deep roots, therefore, injecting liquid fertilizer will probably miss a large portion of the root area. Liquid fertilizer is more soluble than granular, therefore, leaching below the root zone will be fairly rapid.
- 3) **Foliar feeding** — This method is frequently used to apply micronutrients such as iron, manganese and zinc. In situations where there is a high soil pH the micronutrients are unavailable and deficiency symptoms persist this method is very effective. Addition of urea to the spray mixture will help to increase the micronutrient uptake. If buildings are located nearby, it is important to avoid hitting them with these sprays since they may stain.
- 4) **Trunk injection** — Usually this method is only used as the technique of last resort. Primarily micronutrients are injected using this method. Injection has been used on slash pines in order to rectify micronutrient deficiencies caused by elevated pH and high nitrogen levels found in golf course situations. A potential problem caused by trunk injection is the introduction of fungus into the tree at the site of the injection wound.
- 5) **Broadcast fertilization** — This method is employed using granular fertilizers. The fertilizer should be scattered starting at the dripline and outward over a broad area. Where grass is present the fertilizer should be watered in thoroughly to work it below the grass. Since most tree roots are quite shallow, the fertilizer will be introduced into the area of soil where it will be the most beneficial. By using the granular formulations slow-release sources of the more soluble nutrients can be used in an efficient manner. Broadcast fertilization has been found to be the most effective as well as most cost effective way to fertilize trees and shrubs.

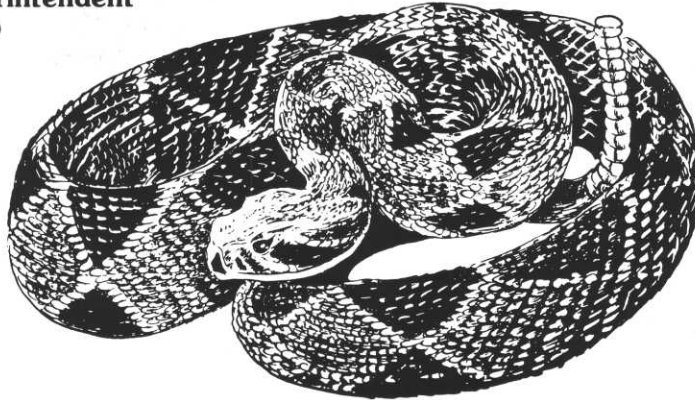
As you can see there are many fertilization techniques available. It is important to use the technique which will be most beneficial to the trees and shrubs you are trying to grow. ■

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# ONCE BITTEN

By Chuck Calhoun  
Assistant Golf Course Superintendent  
John's Island Club



*Eastern Diamondback*

“Snakes”! For many not a pleasant topic but one which we all must face at one time or another. In our business of course and grounds maintenance, happening across one of these ancient reptiles is an almost inevitable occurrence. As increased development continues in our state, club grounds and golf courses offer a haven and possibly a chance of survival for these “usually” most beneficial creatures.

Here in Florida with our sub-tropical climate we are host to many different species, most of which are totally harmless. These can range from the small ring-necked snake 10' -12' to some members of the racer

family reaching lengths in excess of 7'. Many of these snakes will live an entire life time in a flower bed or mulch garden the size of a small putting green. To go into detail about habits and environments of our numerous species could consume volumes.

The real reason for this article is to possibly help you and your staff avoid some of the serious problems that may be encountered on your course. We in Florida happen to have the dubious honor of having 3 of the 4 venomous snakes native to North American, these being the rattlesnake, cottonmouth moccasin

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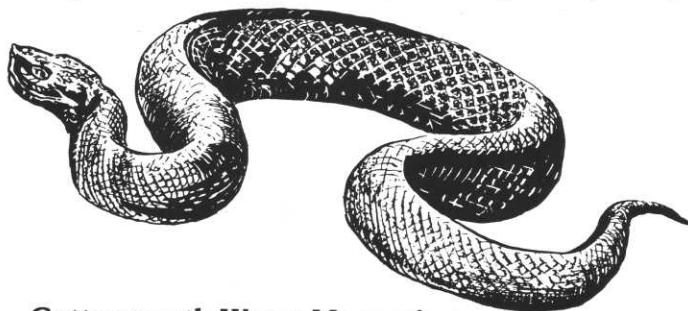


and the coral snake. (Yes, the copperhead is found in Florida but generally only in the Northern Panhandle areas).

Having been the victim of a large rattlesnake bite, I feel it necessary to shed some light on conditions and Rx that may help someone else avoid this most unpleasant and painful experience. As noted earlier with new construction and building taking place in our state these reptiles are being forced into many areas where they might not be expected. I know many of you with courses in city areas might not think of snakes as a problem, but save man and his shovel, they are there.

On the golf course there are many instances where yourself or a member of your crew may come into contact with one of these unique creatures. For example, using your hand rather than a cup puller (when doing cups) in the morning a common practice, should always be avoided, cleaning beds and such without gloves (a favorite habitat of the very dangerous coral snake), dumping clippings in a nearby bush areas, etc. A little time watching your step and where a person sticks his or her hand could save a life or a limb. Sounds drastic but it is a possibility.

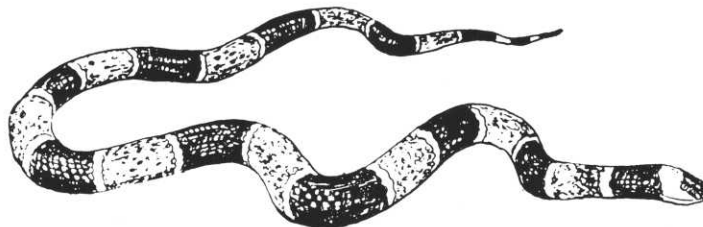
Our poisonous snakes possess two different types of toxins, the Hemotoxins (rattler, moccasin) and Neurotoxins (coral snake). The Hemotoxins affect the blood and tissue systems, the Neurotoxins affect the nervous system. A bite from either of these types of snakes is a matter not to be taken lightly. NOTE: an inexpensive pamphlet should be kept on hand for positive I.D. as most harmless snakes will snap and bite if provoked. These bites are usually small, barely



*Cottonmouth Water Moccasin*

skin breaking and cause no problems unless uninformed.

There have been many medical recommendations over the years as to proper Rx. The movie and TV method of making a cut and sucking out the poison is probably the most widely known and most dangerous, a small cut in your mouth, your worse off than the victim. Ice packs recently considered a plus are now not recommended.



*Eastern Coral Snake*

A tourniquet should only be used unless immediate medical attention is not available, then only to slow not stop the bleeding as this can concentrate the venom and cause increased tissue damage. The best method is to simply call for an ambulance and watch for sign of shock.

These paragraphs may seem old hat for some of you, but these things do happen. As for myself (I hope you didn't skip to the end for the gory details) as I mentioned earlier approx. 1½ years ago, I was bitten on my right hand by a 6½ foot Florida diamond back rattler (not on the course). The initial bite probably ranks with a bee sting but the after effects were a different story. My partner and I were 45 minutes from a telephone and by the time we reached an ambulance, I was already losing consciousness. After reaching a hospital 1½ hours after the bite, I had almost no blood pressure (this due mainly because of the location of the bite, a main vein in my right hand). I had to be airlifted to an Orlando hospital where they were better equipped to handle my condition. After 30 units of anti-venom and 6 days in the hospital, I was able to go home. I am just recovering 100% use of my hand but thanks to having some knowledge of what to do. I still have it.

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# THE WORKPLACE

By Don Kooyer, C.G.C.S. Willow Lakes Golf Club Jacksonville, FL

Please let me start this article by thanking my wife Maureen for her help in writing my articles. Without her editing help these articles would not be.

When a job ceases to be a challenge it ceases to be work. A worker in his workplace has to have the challenge which he can meet and conquer. Once he has met that challenge you, as his supervisor, have to let the worker know that the job was well done. As the personnel manager the superintendent should hold a staff meeting with all the grounds personnel at least once a month to let his crew know what their job performance means to the operation of the course, grounds and over-all golf course project. He also needs to let each individual know that their job performance reflects on everyone connected with the golf course. In a full staff meeting you have to bring out the efforts put forth not only by the entire crew but make sure to point out the individual efforts that each crew member has contributed to the team. There is no better way to be fulfilled in your workplace than to be recognized by all your fellow workers. By letting the crew know that the course is in good condition because of everyone's effort, the individual will know that he is meeting his challenge.

Don't forget that each worker is an important part

of the work team. When you are out on the course checking the greens or fairways just flag your operator down and stop and talk for a few minutes. Let the operator know that he is doing a good job. Tell him that his operation of the equipment has been done properly and that you observed him looking back at the area that he just mowed to make sure it was done right before moving on to the next area. Don't forget to tell the operators that the job performance they give to the course is appreciated and needed. There is no place a person would want to be at less than a place where you are not appreciated or needed.

To keep an employee interested and involved in his work place you, as his immediate supervisor, must provide a work place that is challenging and rewarding toward his work advancement. Make sure that all employees have the chance to advance themselves in their work area. If you have an employee that does a good job that he was hired to do and shows an interest in other areas, let him take on the challenge. By letting the employee have this chance to show what he can do will give him another challenge at his work place. The worker will respect you for believing that he can perform above the area which he was first hired for. Not only will you have a happy employee but a good person that can move into a job opening when it becomes available.

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A continuous training program is invaluable toward employee development and job security for your personnel. When personnel are continuously trained on new equipment operations, they will not only feel comfortable with the operation and safety, but this training will make their job easier. Don't forget to keep your staff informed of changes in safety rules and regulations concerning equipment, chemicals, clothing, wages, taxes, etc. During a staff meeting, bringing these things up will show your staff that you are genuinely interested in their well being.

Offering training and education other than at the work place will show your employee that you are concerned with their development. When providing education and training for employees they will know that you are interested in their development as a well-trained long term employee.

Staff meetings are an excellent way of keeping the communication line open between management and the staff. Remember that some people are shy and don't like to talk in groups of people. At the end of our staff meetings I always let my personnel know that my door is always open. If there is anyone on my staff that has any problems I let them know that they can come and talk to me any time.

As the grounds manager and supervisor you have the

well being of your crew to think about. You not only provide these people with a wage that will meet their needs of living but also a challenge to succeed at their vocation. When talking to an individual employee in your office you have a much more relaxed atmosphere. You can and must let the employee know at this time how much he is needed as an individual and what his participation in the entire golf operation means. You have to let the employee know that you depend on and need his individual efforts. While talking one to one let the employee know that you as a person are interested in him or her as a person and not just an employee or a number. This is the best time to let the person know how much you appreciate the job that they are doing. Now point out the good points of their work performance and bring out their weak points also.

There are people who work for money and there are those that work for satisfaction in the job place. Remember that money is a great motivator and satisfaction is achieved through motivation. As an employer when you have a satisfied crew you will be able to supply the motivation on the upswing. A well informed trained employee paid a fair wage will give you all the support you need to keep a strong working crew.

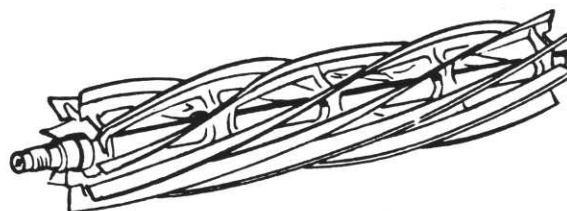
I now thank my crew at Willow Lakes for their efforts and an excellent job well done. ■

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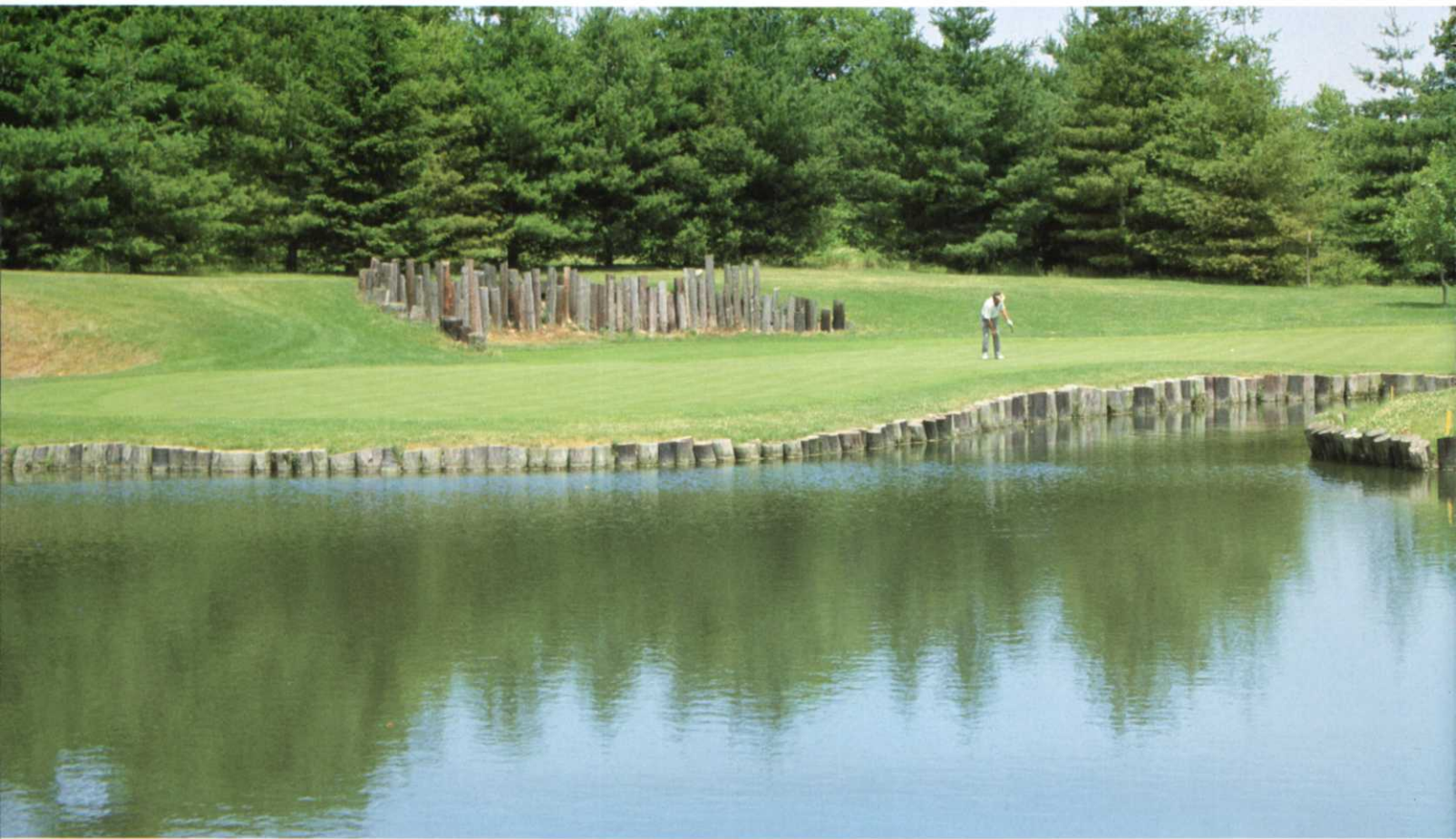
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A newly designed line of **Pro-Line golf course Information Signs** featuring updated graphics and easy installation has been introduced by Standard Golf Company.

The new line includes signs that provide easy directions and course status information as well as signs that help maintenance crews by reminding players to rake sand or repair ball damage.

All 6" x 12" Pro-Line Information Signs are now available in tough 1/4" longer-lasting flexible plastic as well as the original sturdy aluminum. They have attached stakes to hold them firmly in place.

Standard's new large line of 12" x 12" Information Signs are available in sturdy aluminum. They can be installed quickly and easily with Standard's sturdy Sign Posts. Sharpened spikes make post placement easy with simple foot pressure. Signs bolt on quickly with two pre-drilled holes in both sign and post. All signs are single faced and silkscreened with weather-resistant inks.

For more information on the new Standard Golf Information Signs and other golf course accessory equipment, contact your Standard Golf Distributor or Standard Golf Company, P.O. Box 68, Cedar Falls, Iowa 50613 or phone (319) 266-2638.

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The system is also capable of cleaning one, two-and-one-half and five-gallon containers to triple-rinse standards. Empty containers are placed upside down in the unit with the spout over the container nozzle. The lid of the LESCO Closed Mixing System is then shut. Fresh water efficiently washes the residue into the spray tank. The large, 16-inch opening allows for easy placement of pesticide containers into the system.

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# SAFETY FIRST

By Cheryl Jones, A.G.C.S.W. (Asst. Golf Course Supt.'s Wife) Frenchman's Creek North Palm Beach, FL

This lay person would never attempt to instruct a superintendent how to train an employee. You folks are the experts. If you don't personally show an inexperienced new crew member exactly how the job is done, you probably assign an experienced crew member to shadow him and show him the ropes for a few days/weeks. No one would simply TELL a person how to cut a cup, for example, if that person had never seen one before. Give me the necessary tools and verbal instructions, and you're liable to end up with a crater smack in the middle of the fairway, possibly in the middle of an irrigation pipe. No, don't turn us greenhorns loose without a living guide to save us from ourselves, and yourself a lot of headache!

While you're hypothetically training me, please don't forget the essential safety precautions. They may save more than a headache - they might save a life.

OSHA has rules and regulations for employers, and a poster for employees. Be sure it's displayed where I can see it. I am a woman. Please don't tack it to the wall in the mens room.

Advise me of where first aid supplies are kept, and explain in detail which chemicals I may become exposed to that must be flushed off immediately. Don't forget to show me where this is done, and who to

report work-related injuries to.

I've never worn a respirator, never even seen one up close. Please show me exactly how to use one, and explain in what situations, and who is responsible for cleaning it after the job is finished. If a protective rubber suit must be worn, does it need more than a quick hosing off when I'm done with it?

While we're talking about equipment, let me know which jobs will require wearing safety goggles, and where I can find them. My eyesight is precious to me! Many courses require employees to wear steel-toe boots. A good friend of mine lost his toe several years ago, flymowing a slippery bank. You can bet I'll wear them! But do you supply them, or must I purchase a pair myself? Even the most safety-conscious, careful employee can have an accident. A pair of long pants provided that thin edge of protection when a chain saw tried to eat my husband's leg. He wasn't hurt, but you won't hear me complaining about the "No Shorts" rule at your course.

Even if instructions seem silly, obvious, and self-explanatory, please come straight out and tell me not to poke around under a mower before disengaging the blades or shutting down the motor.

Am I responsible for washing down my machine after every use? Will you show me just how you want this done?

Does a mechanic perform daily routine maintenance tasks, or do I check the oil in my machine before using it? Must I refuel my machine at the end of the day so it's ready to go in the morning, or do you prefer it to be nearly empty to reduce fire hazards? Must I log my fuel usage for record-keeping purposes? When my machine is oiled, fueled, and ready to go, where do I dispose of the oily or gas-soaked rags?

Please show me exactly where I may or may not drive machinery on the course. If a load is too heavy to pull across a recently planted fairway, please say so in advance. I'd rather face a charging bull than an outraged superintendent.

Instruct me in every detail of operating procedure of all equipment I'll be using, from cleaning ball-washers to flymowers and tractors. I'm a quick learner, but there's a lot to learn. Please be patient - the only "dumb" question is the one that isn't asked, especially regarding safe operation of expensive machinery. I want to do a good job for you! To use another worn cliché, Rome wasn't built in a day. The time you invest in instructing me now will be returned to you ten-fold in decreased delays, mistakes, downtime and injuries.

Oh, and thanks for that pat on the back. It's great to be part of this team! ■



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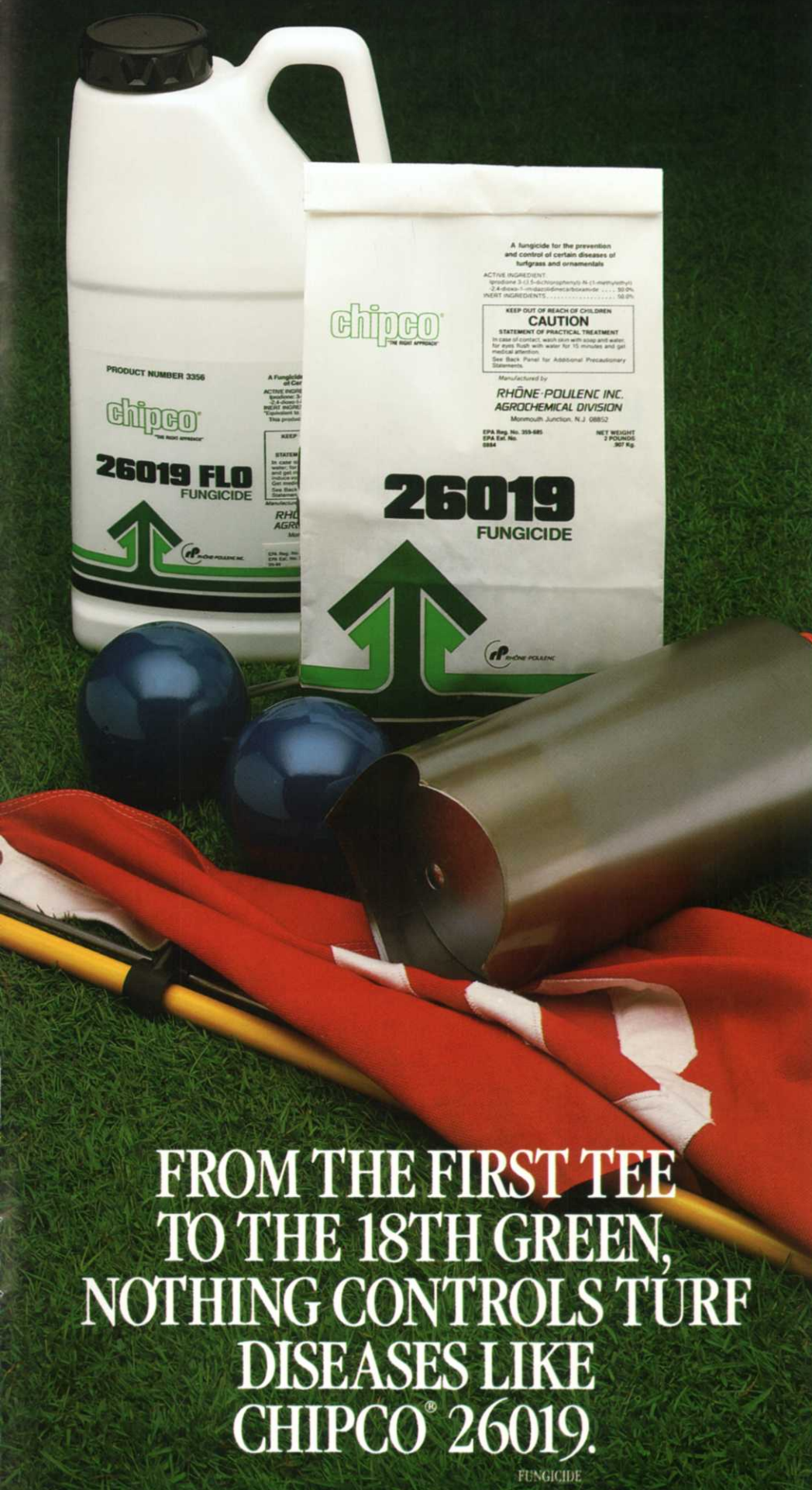
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FUNGICIDE

# PARASITIC WASPS RELEASED AS BIOLOGICAL CONTROL AGAINST CITRUS SCALE DISEASES

By Julie Graddy

**HOMESTEAD** — A thousand parasitic Japanese wasps were released 6/9/87 in the Homestead area to test the wasp's ability to control chaff scale and snow scale, insects that attach themselves to citrus twigs, leaves and fruit. Similar releases of biological controls against scales have had a "very good" success rate, says Dr. Fred Bennett, an entomologist at the Institute of Food and Agricultural Sciences (IFAS) at the University of Florida.

Dr. Richard Baranowski, director of the IFAS Tropical Research and Education Center in Homestead, who released the minute wasps in a lime grove, says that releases will continue several times a week for a couple of months. Regular tests will monitor the wasps' progress against the scales, he adds. Material for the releases come from Japan via the biological control center at Texas A&M University in College Station.

Because a scale insect has a hard covering that protects its body, the insect is difficult to control with insecticides normally used on citrus. Although systemic insecticides can work, they are not used because the insecticide is taken up by the fruit as well as the leaves, says Bennett, who specializes in biological control.

The ingenious wasp drills a hole in the scale covering and lays an egg inside. When the egg hatches, the larva eats

the scale. The wax covering protects the wasp as it grows and pupates into an adult, says Bennett. The wasp larva feeds on several growth stages of the scale. The insect feeds on scale insects only and is not a nuisance to man or other vertebrates, says Bennett.

Bennett hopes the wasp can also be used to control black parlatoria scale. This unsightly citrus pest was discovered in a small pocket of trees in the Little Haiti area of Miami in 1985. The wasp appears to provide some control against the insect in its Japanese homeland, says Bennett.

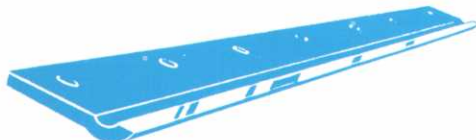
Florida citrus growers are concerned that black parlatoria will make its way into the state's main citrus growing area, he says. Although the scale does not usually destroy citrus trees, it is difficult to clean off fruit, which damages marketability.

The state recently started a tree eradication program to remove the infested trees in the area, but has asked IFAS scientists to continue research in case the pest cannot be eradicated or someday reinvades the state.

Puerto Rico is a likely spot for continued testing, Bennett states, since reports indicate that black parlatoria scale is a problem there. ■



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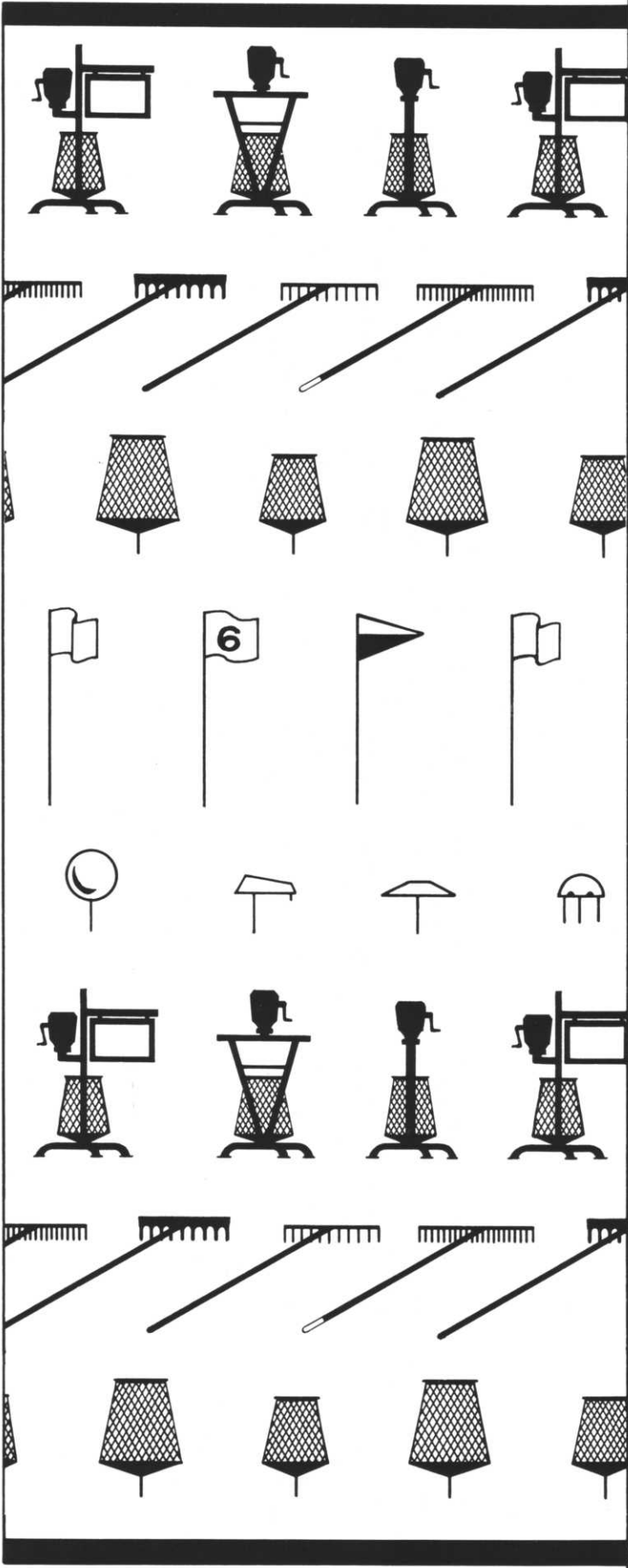
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# HAVE YOU READ A PESTICIDE LABEL LATELY?

By Susan P. Whitney

All chemicals that are designed to control pests, from the insects in your fields to the germs in your bathroom, are "pesticides" according to the Federal Insecticide and Rodenticide Act (FIFRA). This law says that no container of pesticide may be sold unless it has an attached label that gives specific information about safety and use of the chemical. Before you read any further get a container of pesticide — any commonly used household pesticide will do — and check the label as you read this article.

FIFRA says *The Label is the Law*. That's right! You're holding a legal document in your hands. If you don't do what the label says, you may be subject to a fine. You should always read the label before you buy a product and then again before you use it and again before you dispose of the container.

Now let's see what the label tells us. If the chemical is a *Restricted Use Pesticide*, the label must say so. Only certified pesticide applicators may buy and apply restricted use pesticides, however, anyone may buy and use general use pesticides.

The label must list the *ingredients* and the *type* of pesticide — insecticide, herbicide, nematocide, etc. The *name and address* of the manufacturer must be on the front of the label with the *Environmental Protection Agency Registration Establishment Numbers*. The establishment number will tell you which facility made this particular batch of the chemical — important information to know in case you suspect that something is wrong with the product.

## SIGNAL WORDS

The *signal words* are probably the most important words on any label. There are 3 kinds: *danger*, *warning*, *caution*. Which one is on your label? "Danger" means that this pesticide is highly toxic to you, but not necessarily highly toxic to the pest. "Warning" means it is less toxic, and "Caution" means it is mildly toxic to you. The signal word will determine what kind of *protective clothing* is required by the label. Does your label list any protective clothing? It may not, so check under the signal word. Does it say "Do not breathe vapors?" Then you may need a respirator. If the label says, "Do not get on skin," you should wear protective rubber gloves, a long sleeved shirt and long pants. What kind of protective clothing are you going to wear the next time that you use a pesticide?

Now let's read the *state of practical treatment*. Here you will find *first aid* advice. You can see why it is important to read the label before you buy and again before you use. It's too late to read the label after the chemical has splashed in your eyes! Remember to take the label with you if you have to go to the hospital. Your doctor needs to know what type of chemical you used and the treatment.

How will you store and dispose of the pesticide container? Check the *storage and disposal* statement on the label. It should say to rinse the container three times before disposing. This will reduce environmental contamination. Plan ahead when mixing any chemical so that you can use the solution from this rinsing.

Your label may also have *environmental hazard and chemical or physical hazard* statements. Does it say "do not apply to any body of water?" or "flammable?" Agricultural products will have a *reentry* statement that tells when you or your workers may return to a treated field. Be sure to read and follow the *directions for use* carefully. Here you will find the plants that may be treated, the pests that can be controlled and mixing directions.

Now you know how to read a pesticide label. Make a practice of it, because labels are constantly changing! If you have any questions, call your County Agricultural Extension Service. And remember — THE LABEL IS THE LAW. ■

from *FloridaAgriculture*, April 1, 1987

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# TURF INDUSTRY UPDATED AT LOFT'S ANNUAL FIELD DAY

Bound Brook, NJ — Golf course superintendents, lawn care operators, turf seed distributors and other members of the turf industry recently met to discuss new developments and common interests. Once again Lofts' Research Center was the site of their Annual Turf Field Day.

Dr. Joseph DiPaola of North Carolina State University opened the program with "Turfgrasses for Shade Use." Then Dr. Mark Welterlen, of the University of Maryland, spoke of "New Turfgrass Trends." Lofts' Jeanne Ritchey discussed "Small Business Collections." Finally, Dr. Richard Hurley, Lofts' Research Director, presented "Ornamental Grasses and Their Use in the Landscape."

Following a picnic lunch, Dr. Hurley led a tour of Lofts' research plots. There visitors could observe the performances of several varieties under various conditions. The final item on the agenda was a demonstration of the NJ State Seed Certification program.

To be notified of next year's Turf Field Day, contact Lofts Seed Inc., Chimney Rock Road, Bound Brook, NJ 08805, (201) 356-8700.



Visitors to Lofts' Field Day tour research plots. Dr. Rich Hurley explains the purpose of the plots is to observe the performance of different varieties over long periods of time under normal growing conditions.

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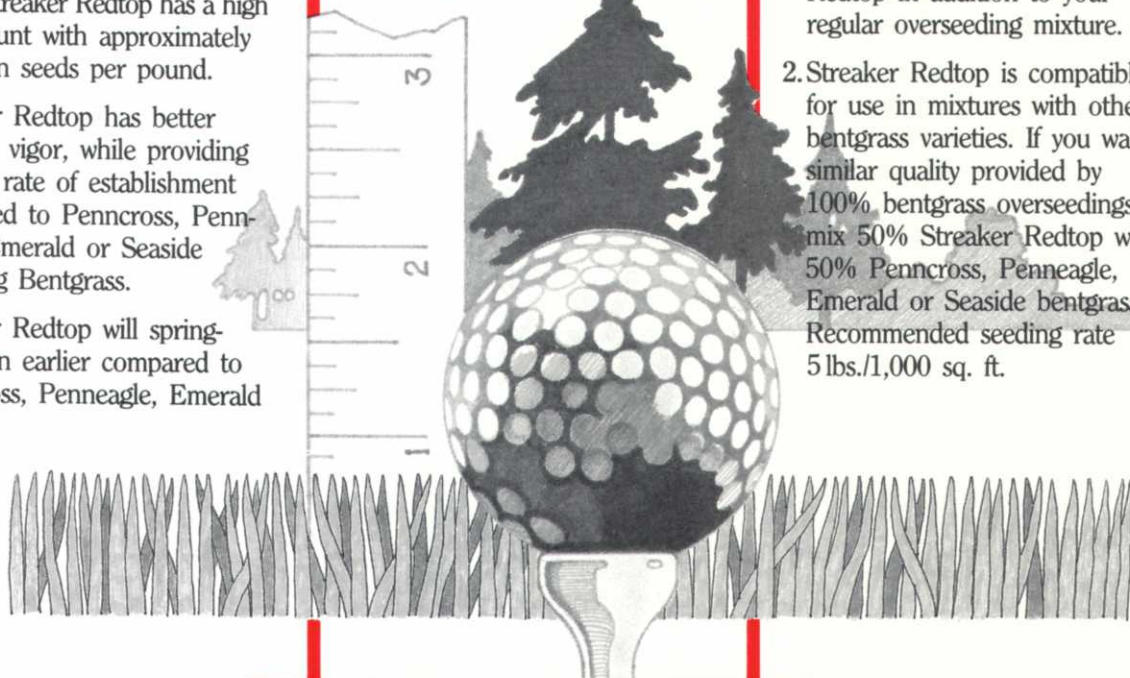
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- As a member of the bentgrass family Streaker Redtop has a high seed count with approximately 6 million seeds per pound.
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- Streaker Redtop will spring-transition earlier compared to Pennecross, Penneagle, Emerald

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or Seaside bentgrass. Streaker will produce a winter turf with bentgrass qualities without the typical problem of bentgrass persisting through mid-summer.

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# NEW PESTICIDE RESTRICTIONS TO PROTECT ENDANGERED SPECIES

By Chuck Woods

GAINESVILLE — In one of the most far reaching and controversial attempts to protect endangered plant and animal species, the Federal Environmental Protection Agency is proposing major changes in how and where pesticides can be used.

The changes, to become effective in February, 1988, could virtually eliminate the use of many chemicals in areas where they could harm animals and plants protected by the Endangered Species Act of 1984.

At least 60 of Florida's 67 counties will be affected, including many of the state's important farming areas. They are home to one or more endangered species which would trigger restrictions on the use of many pesticides in all or parts of those counties, explains Dr. Norman Nesheim, pesticide information coordinator with the University of Florida's Institute of Food and Agricultural Sciences (IFAS).

Across the nation, about half of all the counties will be affected in some way by the proposed new rules, he adds.

"Everything from mosquito control to growing citrus and vegetables in Florida will be affected by the new pesti-

cide rules. About the only thing not covered is pesticide use in the home and garden," Nesheim says.

EPA says the new restrictions should not have an adverse effect on agriculture because most endangered plants or animals and their habitats are not located in cultivated fields. But agricultural interests, who say they've always been concerned about the proper use of pesticides, are now voicing strong opposition to the new pesticide rules.

"The U.S. Department of Agriculture, the California Department of Food and Agriculture and the American Farm Bureau Federation have asked EPA to re-evaluate and delay the new rules to allow for more public comment. It's not certain at this time what impact these protests will have on the eventual outcome of the rules," Nesheim explains.

To comply with the provisions of the act, EPA is requiring manufacturers to revise pesticide container labels, listing states and counties where endangered plants and animals must be protected from the use of certain pesticides.

"Before applying any pesticide, farmers and others would have to consult the pesticide label to determine if their county is listed as having pesticide use restrictions to protect endangered species. If their county is identified on the label, they would have to obtain a map prepared by EPA and the U.S. Fish and Wildlife Service to determine precisely where restrictions may apply to use on their property," Nesheim explains.

The IFAS specialist says the new pesticide restrictions will place another burden on anyone who needs an effective chemical to control pests. "It's possible, for example, that a farmer on one side of the road could use a pesticide while someone across the street who grows the same crop would be restricted from using the same pesticide," he adds.

Nesheim says the new EPA rules to protect endangered species could eliminate the use of almost all pesticides in some parts of the country, leaving farmers and others with no alternative pest control methods.

"In forest uses, for example, many pesticides would be restricted in Florida, particularly in Clay, Gadsden, Orange, and Polk counties. Pesticides used to control mosquitoes in an aquatic environment would be heavily restricted in Okaloosa, Palm Beach and Walton counties. Using pesticides on range and pasturelands would be highly restricted in Jefferson, Lee and Liberty counties. And pesticide use on field crops would be restricted most in Broward, Dade, Glades and Palm Beach counties," Nesheim explains.

A complete list of endangered species for every county

(continued on page 72)



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(continued from page 70)

in the state will be released by the federal agency, he adds. Examples of endangered species in Florida include the woodstork, red-cockaded woodpecker, grasshopper sparrow, everglades snail kite and the eastern indigo snake.

Enforcement would be by EPA itself or by a state agency under contract to the federal agency. In Florida, the Department of Agriculture and Consumer Services will handle enforcement. Violations will range from a first-time warning to harsh fines.

Violators could be identified by state or federal enforcement agencies or by private individuals or groups interested in protecting endangered species.

“One of the provisions of the Endangered Species Act is ‘the right of private action’ whereby individuals can bring suit against other individuals who are violating the act. This means someone could sue a neighbor down the road who is using a pesticide that might be harming an organism identified as an endangered species,” Nesheim concludes. ■

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## **EPA'S ENDANGERED SPECIES LABELING DRAWS PROTESTS**

EPA's endangered species labeling program will either start over in a rule marking mode or be taken to court because it was not. The American Farm Bureau Federation (AFBF) has asked EPA Administrator Thomas to begin rule making for the program. The California Department of Food and Agriculture has also asked the Agency to reevaluate the program before its 1988 effective date. It is also understood that USDA has provided EPA with negative comments on the labeling program.

According to concerns expressed by John C. Datt, Executive Director, Washington Office, AFBF:

— The lack of a formal rulemaking for the program violates FIFRA the Administrative Procedures Act and the Endangered Species Act (ESA).

— “FIFRA Section 6(b) also requires that EPA consider mitigation measures short of cancellation or use prohibitions that will permit continued use while at the same time adequately protect environmental interest. By imposing a blanket non-selective prohibition against pesticide use in areas that EPA determines might affect listed species, EPA has ignored this statutory requirement.”

— “Notwithstanding a rulemaking requirement, the program must at the very least be postponed until the requested mapping (by the USDI's Fish and Wildlife Service) has been completed, evaluated and published as required.”

— “Nearly one-third of the nation's counties will be affected. The use of one or more pesticides — many of them essential to agricultural production — will be discontinued in more than 900 counties or portions of counties. In many cases, satisfactory substitutes for these products have not been determined or do not exist.”

— “The proposal could result in an unfair disadvantage for individual agricultural producers. It is conceivable, for instance, that one farmer would not be allowed to use atrazine on his corn while his neighbor across the road would have no such restriction.”

— “If strictly enforced, the endangered species labeling program would disrupt important agricultural programs such as weed, grasshopper and boll weevil eradication programs within USDA.”

Rex Magee of the California Department of Food and Agriculture stated “Indiscriminate prohibition or restriction of the 90 odd pesticides currently listed for revised labeling could have catastrophic effects on California Agriculture.” Magee stated the available bulletin range maps have serious errors and that they do not agree with other range information from EPA and the Fish and Wildlife Service (FWS). He stressed applying error-ridden maps and bulletins to five counties in the state in which agricultural production accounts for over \$3 billion a year could remove large areas from agricultural production. (P&TCN, V. 15, No. 37).

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## **SOME PRODUCTS ALREADY HAVE ENDANGERED SPECIES LABELING**

While EPA's Endangered Species Labeling is scheduled to take effect in 1988, some pesticide products already bear instructions for users in counties that are listed on the labeling to get a certain EPA bulletin from their County Agricultural Extension Agent, the State Fish and Game Office or their pesticide dealer to learn the use restrictions required for the protection of endangered species.

There is one problem! The bulletins don't exist. EPA is responsible for preparing the bulletins and the agency did not see that these bulletins were prepared and distributed to Extension Offices and other sources before allowing products with such labeling to appear on the market. Before using one of these products, users should call:

Linda Walker  
U.S. Fish & Wildlife Service  
Jacksonville, FL  
904/791-2580

The caller should be prepared to provide the following information:

- Complete trade name of product
- Common or chemical name of active ingredient
- Geographical information about the proposed use site such as distance from streams, wetlands and identifiable landmarks such as county roads. ■

*from Chemically Speaking, August 1987*



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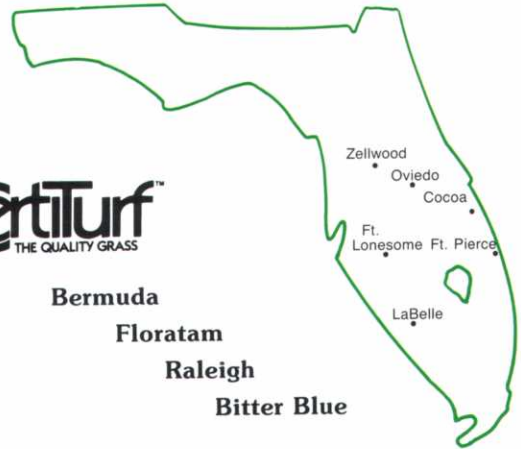
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- 6) All forms of recreation are a waste of time.
- 7) Never delegate responsibility to others; carry the entire load yourself.
- 8) If your work calls for traveling, work all day and travel at night to keep that appointment you made for eight the next morning.
- 9) No matter how many jobs you already are doing, remember you can always take on one more.

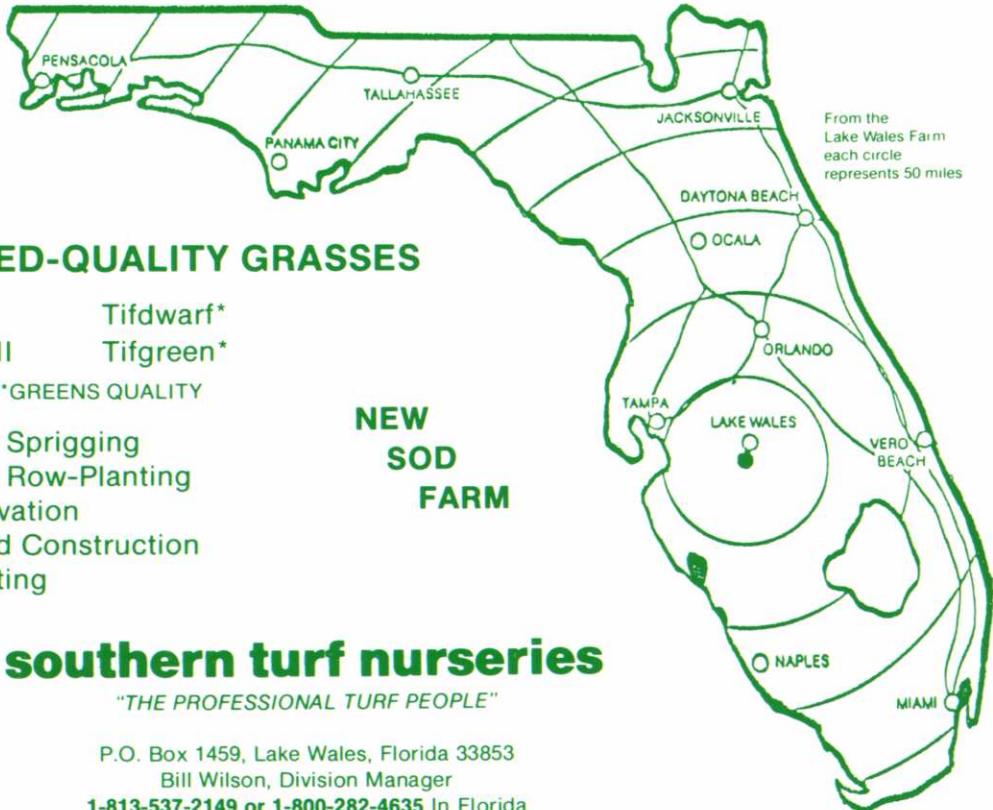
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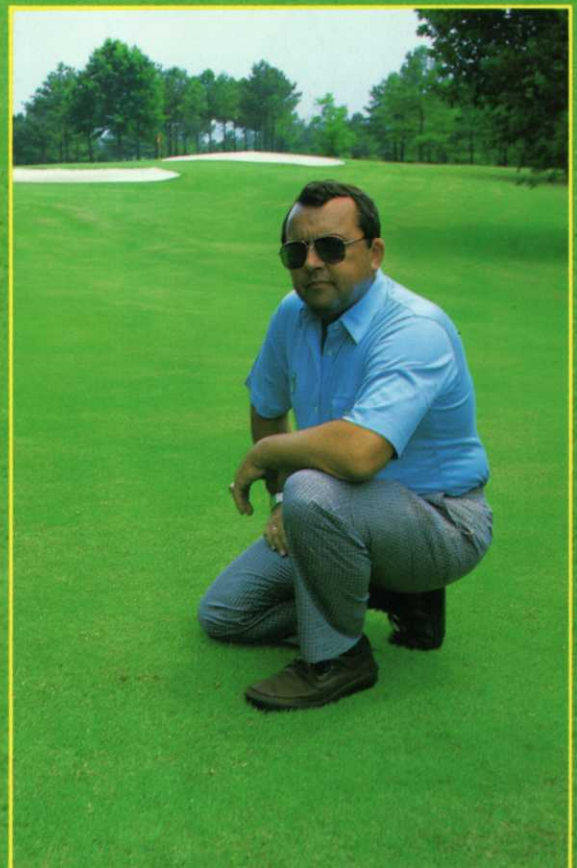
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## FLORIDA TURF GRASS ASSOCIATION FILLS FOUNDATION POSITION

Dr. Max Brown, President of the Florida Turfgrass Association announces the appointment of Robert J. Yount as Vice President of Development for The Florida Turfgrass Research Foundation, Headquarters in Orlando, Florida.

A newly created program formulated by the Florida Turfgrass Research Foundation will begin to establish a \$5,000,000 Endowment Fund. Plans are to channel all funding received from the Endowment into research and development of top-quality turfgrasses as well as biological control of pests and environmental enhancement, under the direction of Mr. Yount.

Mr. Larry Pauley, Fund Raising Consultant for the Florida Turfgrass Research Foundation made the following comments:

"The Florida Turfgrass Research Foundation has become a national forerunner in the development of technologies that protect and enhance our environment. Our quality of life is dependent on research and education that will insure strong, resistant grasses; safe effective water and erosion control. Mole crickets cost Floridians \$37 million a year. Dedicated teams of researchers, funded by the Florida Turfgrass Research Foundation, have undertaken the project to develop biological control of this pest. After years of research, testing and scanning the world for answers, they ended up in South America where a major breakthrough in the biological control of this expensive pest was uncovered. Dramatic results have occurred, but more research is needed before their goal is completely reached."

Mr. Yount confirms that he is formulating plans and programs to be taken out to the public so that, "our needed research in the areas of professional turf and homeowners turf can be explained more completely."

The beauty and subsequent value of Florida's environment is dependent on the continuing development of resistant, low maintenance grasses. Lawn care by homeowners is a \$4.25 billion per year industry with another \$2.5 billion spent for professional lawn care services, which points out that the studies of Florida turfgrass carry a significant financial impact. The research done by the Florida Turfgrass Research Foundation is also a major influence on the millions of dollars spent annually on golf course maintenance. Their findings directly control the quality and care of the fairways and greens on which our game is so dependent.

We are encouraging that contributions be made to the Florida Turfgrass Research Foundation which will enable us to find the many answers necessary to maintain and improve the quality of life for us all."

For more information on how you can directly benefit as a contributor into the Endowment Fund, personally and financially, please write to Robert J. Yount, Florida Turfgrass Research Foundation, 302 S. Graham Avenue, Orlando, Florida 32803-9990. ■



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# SOIL FOR TURF FACILITIES

Dr. Gene C. Nutter, Agronomist

In the operation of modern turf-grass facilities, more problems are caused by improper physical condition of soil than probably any other single factor. While other symptoms may be more readily recognized and treated (such as disease, compaction, poor aeration, weeds or fertility problems), the real and underlying cause is usually poor soil physical conditions. It is time that we recognize this basic fact so that we can begin to cure the real problem and stop the neverending, expensive job of just treating the symptoms.

True, most superintendents and managers of turf facilities inherit their soil problems. How sad it is, however, to see the great number of new facilities (including expensive and complicated golf course greens) that still ignore the importance of proper soil conditions, including surface and internal drainage, soil preparation, and use of ammendments and soil conditioning. Certainly there is enough information available to guide the planners and contractors of these jobs in this age of technology.

Why, then, does our industry continue to make these inexcusable and expensive mistakes? As long as we continue to follow this course of extravagant ignorance, we will be burying our heads further in the sand instead of advancing our individual courses, our profession and our industry image.

What are the basic aspects of soil management that seem to be so often overlooked or ignored? First, let us consider the origin of soil.

## SOIL ORIGIN

In its natural condition, soil is a complex mixture of mineral fragments, decayed plant residues and microscopic organisms. Each of these classes of ingredients have their influence on the nature of the soil. As a natural body, soil developed through a constantly changing pattern which was greatly dependent upon environmental conditions such as temperature, rainfall, plant life and location.

For the majority of cases, the native soil is most influenced by the mineral fraction (called parent material). These soils are called mineral soils. Parent material may have developed from underlying rock formation, or been transported by ice (glacial soils) or water. Thus, soils which developed from rocks through the age-long process of weathering will have properties akin to those kinds of rock. Examples are the heavier, more complex

mineral soils such as clays. Usually these soils are more difficult to manage physically (poor internal drainage and aeration) but are richer in fertility potential (will hold more nutrients).

On the other hand, soils which were laid down from water deposits — such as sands, would reflect a lighter, simpler structure. These soils (such as our various Florida sands) are easier to manage physically (better drainage and aeration) but have much lower fertility capacity.

Then there are organic soils, derived from decayed plant residues. These are the muck soils of the rich Everglades region, and the peat deposits scattered around the state.

## NATIVE VS. ARTIFICIAL SOILS

If we were farmers, we would be growing crops on one of the types of native soils mentioned above. We would gather information about the nature of our particular soil from state and federal soil scientists who had surveyed, studied, classified and mapped the major soil formations in every county in Florida (and likewise most other states). This information would provide guidelines as to the physical condition and fertility status of our particular soil, and this information would guide our crop production practices.

However, turf managers are not farmers — and, with few exceptions (sod producers, perhaps), they are not growing turf on natural or native soils. Instead, they are managing turf facilities which were built by a mass mixing of soil, through excavation, fill, grading and leveling processes. For example, housing projects, apartment complexes, golf courses, athletic fields and highway sites have gone through mass movements of “dirt”. When finally completed, there usually is no resemblance between the resultant “dirt pile” and the original native soil profile that occurred on that same site.

What does this mean to us practically? It means simply that you have to throw the “book out the window” and start over. None of the previously compiled information of soil scientists applies. It could be that the original soil was improved (richer soil hauled in), but usually it works the other way. Often, damaging foreign material is mixed in (debris, chemical deposits, etc.).

Another serious problem is that the mixing process was not uniform and therefore there is much greater variability in the final soil material. This is why we find “spotty” conditions in our turf from area to area. The grass is

*(continued on page 82)*



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When it's time to plan your weed control program, remember the herbicide that has everything you need in one bag. CHIPCO RONSTAR G herbicide or new CHIPCO RONSTAR WP herbicide.

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(continued from page 80)

reflecting the “spotty” soil conditions underlying. In short, all of these factors mean that turf soils are more difficult to manage!

Where do we go from here? Good turf managers have learned the vital importance of proper soil conditions to the success of grass production and maintenance. Therefore, the problem is simple. By carefully studying and evaluating the soils you inherit, you can then go about an intelligent soil management program. For intensively managed turf areas (such as putting greens, tees, athletic fields, etc.) you may need to improve that inherited “dirt pile” by the use of soil amendments. We know generally, for example, that heavy, mucky soils can be improved by the addition of coarse sands; or that infertile, ball bearing sands may become more productive by the addition of heavier soil fractions like clay or organic matter such as peat.

### SOIL AMENDED TO IMPROVE PHYSICAL CONDITION

But just a minute! What really are we doing when we add the above soil amendments (and many others — natural processed or manufactured)? First and most importantly, we are changing the physical condition of the soil.

The management of turf facilities imposes unique and damaging requirements on the turf. Heavy traffic, continuous wear, regular movement of maintenance equipment, high rates of irrigation — all these factors work to destroy soil structure. Thus, turf soils must be constructed (remember — no more natural soil, so we must construct a usable soil base from that inherited “dirt pile”) to take the punishment and still grow good turf.

Here is where the soil amendments come in — to change the inherited soil to a more desirable physical condition. Briefly, to produce good turf under our demanding conditions, soils must have proper pore space. There must be pores to move water through the soil and pores to move air so the grass can “breathe”. Approximately half of the soil is made up of solids (the mineral matter plus a small amount of organic matter). The other half is pore space.

Pore space is of two kinds — large (macro) pores and small (micro) pores. Air moves into the soil (and harmful gases move out) through the large pores, except after a heavy rain or irrigation. Then they may be filled with water temporarily, which soon drains out. This is the ventilation system which aerates the soil. The large pores should comprise about half of the total pore space.

Small pores (also called capillary pores) move water through the soil. These pores conduct water to the grass roots (not the opposite — roots don’t “grow to water” — water must be there first), from the water table, like a kerosene “hurricane” lamp moves kerosene up through the wick. The finer the pores, the farther the water will move, and the slower.

### PROPER BALANCE OF LARGE AND SMALL PORES

The most important aspect of soil porosity is the proper balance between the large and the small types of pores. An excessive proportion of large pores will result in a well aerated but dry soil (like most of our sandy soils). Water will move through (percolate) too rapidly and very little will be retained to grow turf. An excessive proportion of fine pores, on the other hand, will exclude air and may be waterlogged (like heavy clay soils).

Thus, once we have determined our given soil situation, and knowing the physical requirements of our turf facility (percolation rates, drainage, etc.), we can then amend the soil to meet our requirements. A great variety of soil materials are available to do this including calcined clay, vermiculite, peat, colloidal phosphate, sand, etc.).

If we are fortunate enough to take over the turf facility prior to planting, we have a golden opportunity to shape our future soil condition. If we inherit an established facility, the job is more difficult, expensive and time consuming. It can be done gradually, however, by periodically working proper amendments into the soil as topdressing following soil aeration.

The proper proportion of amendments can be determined by a soil testing procedure known as “mechanical analysis”. Many soil testing laboratories and industrial firms can provide these tests, and will help you compound or construct a soil to meet your needs based on such factors as percolation rates, etc.

Once you have amended your soil to a proper physical condition, then the previously mentioned secondary symptoms such as compaction, weeds, restricted roots, etc., will be minimized. Then turf maintenance will be a more enjoyable and successful business. ■

## WHAT’S YOUR EXCUSE?

HUNDREDS of policemen entered a contest to find “America’s most creative excuse for speeding.” Among the entries were:

“My car is so light that the wind blew it over the speed limit.”

“I was speeding to get away from my mother-in-law.”

A woman claimed she was speeding to keep up with the cars behind her.

A man said he had a “right to speed” while making up for time lost in a construction zone.

Another man was speeding after being detained at a farewell party, where speakers included a lot of stuttering children.

Still another man was speeding because he was furious that his wife had just received a ticket for speeding. (This one incidentally won the contest.)

“I have to go to the bathroom.” was the most common excuse.

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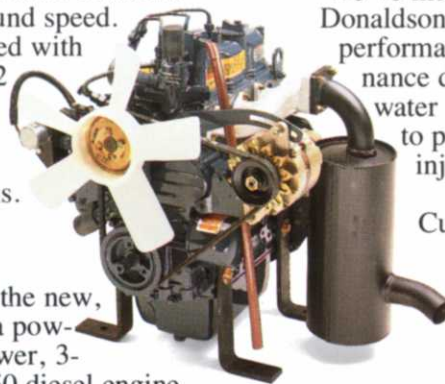
Its totally integrated power train and new hydraulically-powered steering gives you unmatched performance over the long run. The 807 dispatches thick, wet grass on

tricky maneuvers around obstacles without losing ground speed.

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At the heart of the new, four-wheel 807 is a powerful 21.5 horsepower, 3-cylinder Kubota 950 diesel engine.



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## *President's Message*



As the new President of the Florida Golf Course Superintendents' Association, I welcome the distinct pleasure of addressing my colleagues through this message. Please accept my comments constructively, not critically.

Undoubtedly the results of a whipping can be considered controversial. Many times in a horse race the jockey is accused of using the whip too much or too little. I trust you can stand one more exhortation on the need to join an organization and possibly transform the power of that whip from a device of punishment to one of attention and identification.

I am not a true believer in becoming part of an organization just to be another name on the roster, but we are playing an important numbers game. Without a doubt, the legislature, manufacturers, environmentalists, or any controlling or regulatory group will listen to 1,000 voices more intently than 10. The performance has been chosen, the stage has been set, now it is time for the cast to act — you and I individually and collectively. It is up to ALL of us to join forces — stand up and be counted. You supposedly have chosen the turf industry for good reasons. Now support it. Become an active part of your livelihood. Invest in your present and future.

Join your local Superintendents' Association and expose yourself to "grass roots" education — what is being done in your backyard. As part of the state association you contribute, through numbers, to the sting of the whip. Lend a "Big Brother" hand to the turf industry at large by joining forces through the Florida Turf Grass Association. And as a member of G.C.S.A.A. you collectively impart support to and have an impact on Federal decisions concerning matters which effect our environmentally oriented business.

I believe all of us can afford the dues even, if necessary, out of own pocket. Perhaps it is difficult to see or feel a direct "in the hand" benefit of these investments — but they are worthwhile and your future depends on your present action.

You are important. We need you even if you think you don't need us. Become an active member of the mentioned associations.

*Bill Wagner*

## All Spray Pattern Indicators Are Not Created Equal.



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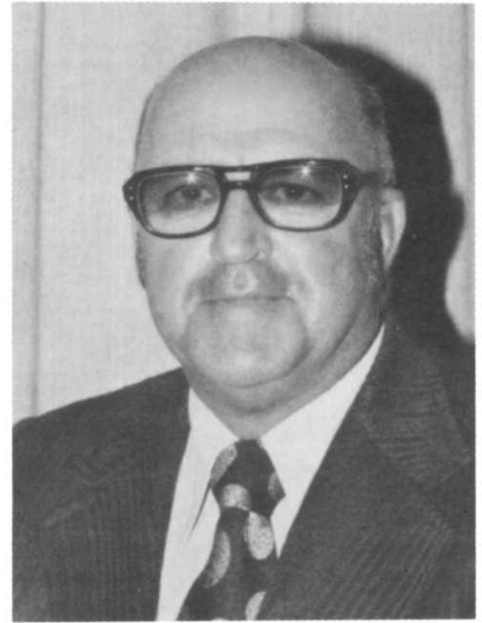
\*Blazon<sup>®</sup> will not stain.

\*Blazon<sup>®</sup> will not interfere with your pesticides.

There are many imitations, but only one original ... Blazon<sup>®</sup> by Milliken Chemical.



## *President's Message*



**Communication** — the act of passing along; transferring; a giving of information by talking, writing, etc.

The failure to communicate properly, or even more simply, the lack of good communication is probably one of the biggest creators of, or contributors to, problems which we all face every day.

Were the instructions given to the crew explicit enough to make them aware of the need to do a certain job in a specific manner?

Do the members of your club know that you will be aerifying the greens next week?

Did we get all of the facts pertaining to an issue or a decision that was made by others with which we disagreed before we arrived at our conclusion or were critical of that resolution?

Did we prejudge someone's guilt because we were not privy to all of the facts?

Did the citizen voice an unpopular condemnation of golf course irrigation practices simply because he was not informed of the unique demands of our circumstances?

Did the instructions mean we should turn left or right at the junction?

Did the teacher's homework assignment include the entire chapter?

Do we know why the bomb was dropped?

One could go on and on with example after example, from the ridiculous to the sublime, of situations which develop needlessly simply because we fail to communicate properly. Either we do not get our point across or we flunk the test by not grasping the essence of the information presented to us.

Recently I had the pleasure of attending a meeting comprised of golf course superintendents, a distributor's representatives, and a major manufacturer's representatives at which the dialogue was one on one and dealt with the present and future needs of our industry. This was excellent communication performed in an atmosphere of mutual respect and open minded consideration of each other. All three parties contributed and all three parties received. Communication at its finest — more of this is needed.

There can be no mutual understanding without communication between people. This is a challenge we must all strive to conquer. Certainly, above and beyond our daily routine, the contributing to and the absorbing of the wealth of information in this publication is a good place to start.

*Bill Wagner*

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*Cut with the best, and Neff  
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**Sales and  
Service**



## President's Message

Most times the subject matter for this message is difficult to come by simply because choosing the right topic is problematical. What do you say that will hold everyone's interest? What do you say that will be informative — enlightening — worthy of one's time? Today the problem is reversed — the issues are too numerous to cover properly but they are issues of such consequence that none can wait. So sit back and relax and read on — you may not like every word but, I encourage you to persist.

First and foremost, of course, is the election of John Hayden, CGCS, as a G.C.S.A.A. Director. For those who have not heard, John won with the highest number of votes ever recorded by a first time candidate. Congratulations to John, Chip Powell (John's campaign manager) and all those who helped in the action. We can feel assured that we will be represented.

Our golf team again performed as has come to be expected as they carried off the championship. Congratulations to Fred Klauk, Bill Whitaker, Dan Meyers, and Ron Hill. Not only do these gentlemen play the game of golf well, but they also serve as excellent ambassadors for our State.

Plaudits must also go to Fred Klauk and his committee which assisted in organizing and conducting the G.C.S.A.A. golf tournament. It was the largest ever (both men and women) and was acclaimed by all as a colossal success. Fred's committee was comprised of Butch Singo and Jim Ellison from the Central Chapter, Dan Meyers from the West Coast Chapter, and Kevin Downing and Tim Hiers from the Palm Beach Chapter.

Much praise is given to Larry Kamphaus for the excellent condition of the Disney World courses. No one could ask for better facilities. All would go for naught if the playing surface was inferior.

If you did not go to the G.C.S.A.A. Turf Conference and Trade Show in New Orleans you missed an excellent opportunity to learn, to view, to observe, to refresh, to acquaint, to renew, and to familiarize yourself with the past experiences of some, the future desires of others, the present state of affairs, the comparable situation of your near and far neighbors, the newest equipment and merchandise, and of course the inner workings and intricate mechanisms that make our organization tick.

The Florida Turf Grass Association is launching a drive for research funds which **MUST** and **WILL** be a success only if you understand it, get behind it, and contribute to it.

Congratulations go to Dan Jones, Dave Bailey, and all those who contribute to our award winning publication. What an outstanding year for the *Florida Green*!

And of course as this is being written (middle of February) we are in constant negotiations with the South Florida Water Management District regarding the water crisis, our impact on it and the Environment and, conversely, its impact on us. By the time you receive this article you will have been informed as to the content of their use restriction matrix.

Put this all together and what do you have? A profession that is worthy of support. A profession that places a burden on everyone. A profession that is demanding. A profession that is also rewarding and very gratifying. Unfortunately this is also a profession that provides the opportunity to garner a great deal without ever paying your dues. And I'm specifically pointing a finger at those who partake, and quite often criticize, but never reciprocate with objective participation. Sit back and enjoy the results of other labors; share the benefits of other experiences; play golf at the finest facilities, but don't be concerned about the education program; read the finest trade magazine, but don't be an active part of your association — in fact don't even belong to any superintendent's group and you still are able to reap most of the ripe harvest.

I trust I am preaching to the segment that needs chastising, but I fear these words will only reach those who already care. To those I apologize. To those who are the target, wake up; take your hands out from under your butt; pull your head out of the sand; become tuned to the action around you. The profession of golf course superintendent is making steady progress. Look what you have going for you! G.C.S.A.A. is alive and running on all cylinders. I can sense a dynamic reformation taking place. Outstanding, competent staff implementing the desired programs of elected, dedicated officers is a combination hard to beat. Your state and local associations are governed by committed fellow superintendents. This magazine is **YOUR** excellent communication tool. Everything is being unselfishly done for you. Why don't you respond by becoming an active part? Join your local association, the state association, the national association, and also the Florida Turf Grass Association. Florida cast a block vote of slightly over 200 in the recent G.C.S.A.A. election — there is absolutely no reason why that cannot be 300 next year. Join now and don't anyone tell me they can't afford the dues — you cannot afford **NOT** to be a member of all those associations. You want to share in the profits? Then share in the costs! Come out of the barn, put on a coat and tie, put down the beer can, and stand up and be counted. At the South Florida Water Management District Governing Board Meeting held on Feb. 12, 1982, Mr. Robert Clark, Chairman, referred to us as **PROFESSIONALS**. Please let's look the part, let's act the part, let's **BE** the part, and let's **BE** it by the members. **JOIN AND PARTICIPATE!**



*Bill Wigner*

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## ***President's Message***

After having the pleasure of addressing you on seven occasions thru the President's Message, I find it difficult to put into words my feelings as I realize this will be my last opportunity to deliver a sermon.

First and foremost, I want to thank everyone for permitting me to serve for the past two years as President of your organization, the Florida Golf Course Superintendent's Association. I have done it proudly and with deep humility. Nothing can be more self-rewarding than to be recognized as the leader of an organization which has accomplished so much and which has created such a favorable impact on that segment of our society in which it is so deeply involved. I take great pride in our success because I know the future will be even better.

Undoubtedly, I have not influenced our industry nearly as much as the close relationship with many of my peers has influenced me. I can honestly say that I have benefited greatly from my experiences and feel that I am a better person because of them. It has been a truly rewarding time.

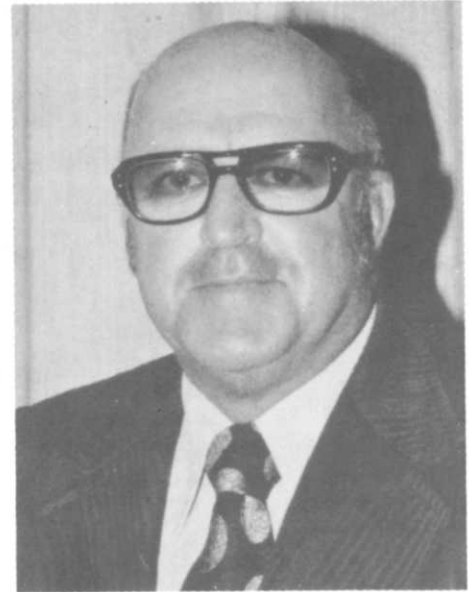
As I review the past and momentarily revel in the attainment of goals, I quickly realize that we must not look back, but rather be constantly alerted to the uncertainties of tomorrow. This is made a great deal easier when one recognizes the tremendous wealth of qualified professionals who are dedicating their lives to our existence. The list of extremely competent individuals, both in our state and throughout the nation, is endless. We have come a long way and yet we have only scratched the surface. Modern innovative ideas wed to the spectacular achievements of electronic wizardry and cost in the molds of well-educated and devoted superintendents who delight in daily combats with Mother Nature will lead us down the path to unthought-of excellence. Be part of this migration! Participate! You don't get interest back until you make a deposit! I guarantee you can never put in as much as you will receive!

To my fellow officers and members of the Florida Golf Course Superintendents Association Executive Committee, I extend a sincere thank you for your cooperation and loyalty. It has truly been a pleasure working with you. May your futures be as bright as you have made my present.

To all the members of the Florida Golf Course Superintendents Association, I again say thank you for the privilege of serving you. It has been two of the busiest years of my life and yet I recognize the inability to accomplish all of my personal goals. But I step down knowing your organization is in even better hands.

No lecture this time — just a challenge — let's all strive to do a better job in all aspects of our daily lives — there is always room for improvement.

Best regards to all. ■



*Bill Wagner*

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