

Boca Raton

Gleneagles





"No weeds on top and roots you can hide behind. For job security, you can't do much better than that."

> Barry Carter Superintendent Boca Raton Hotel and Club Boca Raton, Florida

B arry Carter's words summarize the results he achieved when he treated his bermudagrass greens and fairways with LESCO PRE-M 60DG Herbicide last fall. He plans to reapply the new pendimethalin product from LESCO later this year.

Barry based his decision to try PRE-M on several factors. Of course his top priority was excellent weed control with no damage to topgrowth or roots. But he was also looking for low cost, convenience and labor savings. Barry got everything he wanted with LESCO PRE-M.

"The control has been great," Barry says. "I can see where I skipped — that's the tell-all, isn't it?

"It's still a new product, but the best thing going for it so far is that it did not harm the turf at all — not the new hybrids, not the old hybrids and not the old common. We've seen no root inhibition."

From an economic standpoint, Barry's decision to apply PRE-M was definitely sound. He shopped and compared the cost of PRE-M and found his cost per acre could be substantially reduced by using the LESCO product.

As for postemergent control, a practice Barry has employed in the past, the cost is also high because of the labor intensity of mixing two chemicals and spraying numerous times throughout the season. And with postemergent applications, the bermuda often goes off color.

Barry says it best himself. "PRE-M costs a lot less than postemergent herbicide applications and it's a lot easier too. I'll put it down just twice a year as opposed to numerous spray applications."



"As far as preemergent weed control goes, LESCO PRE-M is the least expensive for the control you get. And the safety factor is very high."

> Gary L. Price Superintendent Gleneagles Country Club Delray Beach, Florida

B efore relocating to Florida, Gary Price was a superintendent in the North — where preemergent weed control on golf courses is common practice. So when an economically attractive opportunity to put down a preemergence in Florida presented itself, Gary was eager to give it a try. He applied LESCO PRE-M 60DG Herbicide to tees, fairways and roughs at the rate of 5 pounds of material per acre at the end of October and plans a followup this summer.

"The results so far have been good," Gary says. "I don't know of any goosegrass germination. We had a little Poa, but after I took a closer look, I realized it was because we'd missed with the sprayer. And even though it's not labeled for ragweed, PRE-M sure kills it."

When controlling weeds with postemergent products, Gary would make as many as ten applications per year. With PRE-M he only has to apply twice although he's considering three applications in certain heavy-wear areas that are especially susceptible to weed populations.

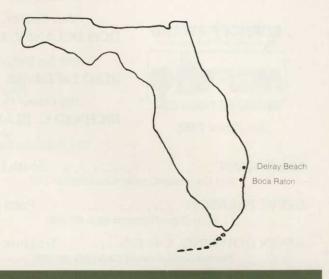
And as Gary pointed out, "When you go with a postemergent control, you're forced to live with some percentage of weeds."

With PRE-M Gary found he not only achieved the superior control he was looking for, but also the degree of safety he wanted. None of the areas he treated with PRE-M showed any sign of injury or setback.



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B arry Carter, superintendent at the Boca Raton Hotel and Club, and Gary Price, superintendent at Gleneagles Country Club, took advantage of the benefits LESCO PRE-M 60DG Herbicide has to offer. You can too.

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Bonita Bay Club is an emerald jewel emerging on the lower gulf coast. Mark Black is Golf Course Superintendent. (See article on page 52.)

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President's Message



FLORIDA GREEN:

Much has been said about the Florida Golf Course Superintendents Association Code of Ethics item 9 and the violation of this code. It states, "Abstain from the debasement of, or encroachment upon, the professional reputation, practice or employment of another superintendent." May we have your comments on this?

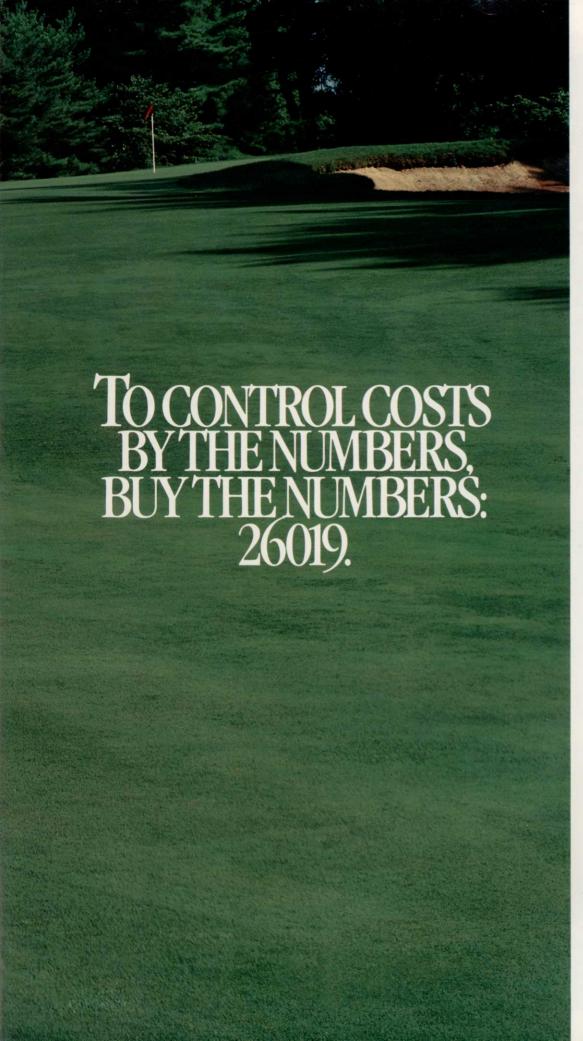
TOM BURROWS:

Many persons claim negligence to the interpretation of this code. Let's look at the three major points; debasement, encroachment upon, and professional reputation.

- debasement implies generally a lowering of quality, value, dignity, degeneration of morals *
- encroachment upon to seize upon, take, to trespass or intrude upon the rights of another *
- professional reputation estimation in which a person is commonly held, character in view of public, good repute, good name, a good reputation *

To me, these three items are very clear. They are extremely valuable guidelines to follow in potential employment situations. If a superintendent wishes to uphold professional and moral values in the view of other professionals and peers, he will not intrude upon or discuss employment for another superintendent's position until that superintendent is aware that his current position is open.

^{*}Webster's dictionary.



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The cost alone might convince you to give it a try. But performance against turf disease makes CHIPCO 26019 the leading fungicide on the market.

A fairway disease prevention program based on CHIPCO 26019 will give effective, long-lasting protection against the major diseases: Helminthosporium Leaf Spot and Melting Out, Dollar Spot, Brown Patch, Fusarium Blight, Red Thread, Fusarium Patch, and Gray and Pink Snow Molds.

So if you want to economize without compromise, buy the numbers: CHIPCO 26019 fungicide.

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Letters To The Editor

Hi Dan!

Congratulations for your award - hope you have a good summer.

Dan, "Would you send me a copy of your Florida Green magazine"? I will give it to our "super" after I read it.

Thanks!

Larry T. Mullen Hollywood Golf Club Deal, NJ

Dear Dan:

You have turned THE FLORIDA GREEN into one of Florida's premier publications.

It is a joy to read. It is always power-packed, with fine editorial content, color and good advertising.

Long time no see! It is still my big ambition to play your club. But we have a nice home at Piper's Landing, with water out back and a large lawn with many plants to take care of. I have professional help, of course, what with my limited talents, but it occupies most of my time. Then I do some financial consulting/managing, little golf story writing, and I manage to play golf a couple time a week. Add to all this some travel and sprare time doesn't pop up too often. Still...

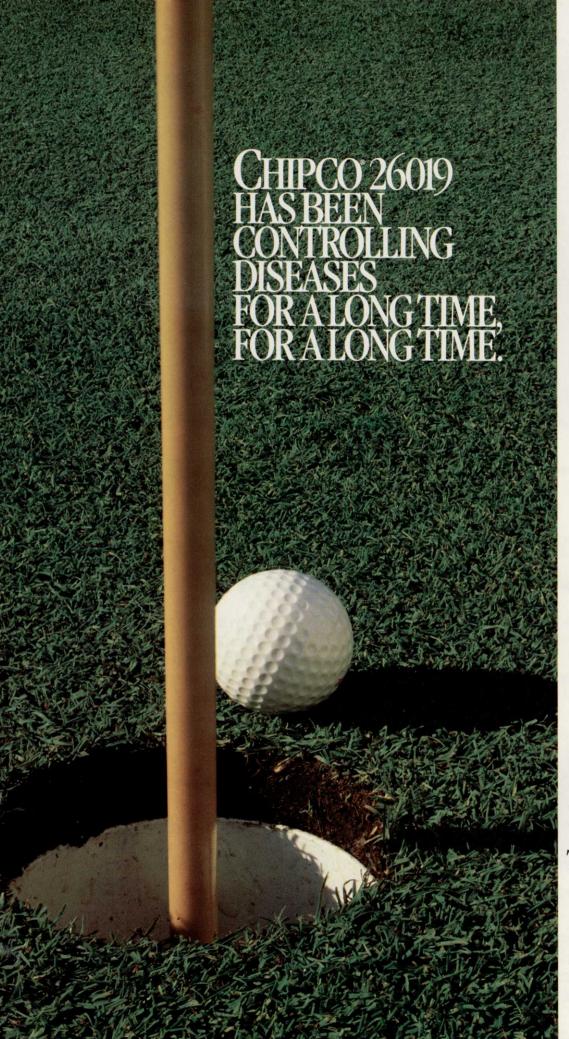
Why not try to visit me sometime? Would like to show you our surroundings.

Bring a couple of friends or meet them here and we'll have some fun.

Meanwhile, thanks for letting me read THE FLORIDA GREEN. It helps me keep up with you and your superb organization.

Sincerely,

Roger P. Ganem



Years of excellent, longlasting performance have made CHIPCO* 26019 fungicide the leader in its field.

When it's your business to keep turf healthy and handsome, you don't wait for disease to break out. You strike first and play for keeps.

That's why thousands of superintendents base their disease control programs on CHIPCO 26019

fungicide.

It's unsurpassed at controlling the major turf diseases, like Helminthosporium Leaf Spot and Melting Out, Dollar Spot, Brown Patch, Fusarium Blight, Red Thread, Fusarium Patch and Gray and Pink Snow Molds.

And it stays on the job longer, giving up to 28 days of protection for

a lower cost per day.

Add a few extras — no phytotoxicity, low toxicity, pesticide compatibility, and no corrosiveness — and you've got a fungicide that's earned its place as the standard of the industry.

Use CHIPCO 26019 this season and you'll stay with it for a long time

to come

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CHIPCO 26019 Taking care of business.



How to grow a gol where you're lucky to

Anyone who's tried knows that sustaining thick, healthy turfgrass in the state of Florida can be a real struggle.

The problem, of course, is in the soil. Or, more accurately, what's not in the soil.

Because, at best, most Florida soils do a lousy job of retaining the nutrients grasses

need to thrive.



To make up for this deficiency, there's the new Grace Professional Turf Nutrition Program.

Maintaining growth takes more than just the right fertilizer.

Whether you're looking to improve the maintenance of your existing course, or setting out to build a new one, call us. But don't expect us just to send you a load of fertilizer.

What we will send you is someone who understands the complexities of Florida soils and knows how to deal with them.

Someone who understands the difficulties of nurturing the different varieties of turfgrasses.

Someone with experience to develop a professional turf nutrition program suited precisely to your course.

Fifty years of custom blending.

If the solution calls for custom-blended formulations, we can supply them. In fact, Grace has been custom blending fertilizers for Florida soils for over fifty years.

For Quality Nitrogen 10

But, chances are, we'll already have the formulations you need. From one of three standard Grace For Greens fertilizers, to the hundreds

of Grace For Fairways blends.

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developed specially for Florida golf courses.

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affected by water, Nitroform resists leaching, even during periods of heavy rainfall. So it stays in the soil, feeding your turf at safe, predictable rates throughout the growing season. Without early flushes. And without fears of burning.

So if you want to grow, let alone maintain, a golf course in soils like these, get the fertilizers made for soils like these. The Grace Professional Turf Nutrition Program.

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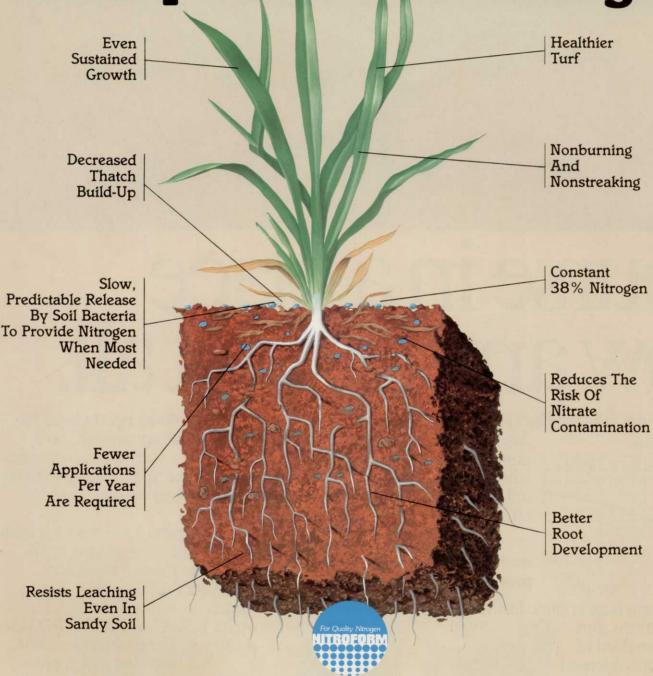
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Marvelgreen blends contain just the right amount of the leading turf-type ryegrass varieties: Palmer, Prelude and Yorktown II. Marvelgreen is used at some of the most prestigious courses in the country. And it performs long after the game is over.



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Estech Branded Fertilizers, Inc. Adds To Woodace[®] Line

Woodace®, the revolutionary long-lasting briquette fertilizer for commercial growers and landscape contractors, now is just one of the several products in a new, complete line of slow-release fertilizers from Estech. The complete line features IBDU® and Escote $^{\text{TM}}$ as long-lasting nitrogen sources.

Rick Helpingstine, product manager for Woodace, said that initial reaction to Woodace briquettes has been excellent and many commercial growers throughout the United States are using them. Many others are testing them. Since Woodace briquettes have a minimum release period of 18 months in container growing, they offer substantial labor savings to the grower and provide excellent growth and color to the plant material.

The Woodace briquette is a 14-3-3 analysis with micronutrients. Estech says one application of the 16-gram briquette will last up to three years in the soil and 18 months in containers. A second, smaller briquette weighs six grams and will last up to one and one-half years in the soil and 8-9 months in containers.

Because of the matrix that holds the briquette together, an entire complement of micronutrients is slowly released along with the N, P and K, making it a complete nutritional product.

Added to the line is Woodace 18-5-10 Top Dress Nursery Fertilizer containing IBDU. In the 18-5-10 granular product, 14.4% of the nitrogen is water insoluble. This product is excellent for woody ornamentals and greenhouse crops offering up to 3-4 months of fertility with all minor elements included, said Helpingstine.

Another new product in the line is Woodace 21-4-10 nursery fertilizer containing Escote. Escote is a unique patented process in which the primary nitrogen source is plastic coated to allow a precise release of nutrients. The amount of release agent incorporated into the coating determines the rate of nutrient release and longevity of the feeding. "This product is very predictable, even in high temperatures or with excessive amounts of moisture. Woodace 21-4-10 also includes a full complement of micronutrients, as do all our products," said Helpingstine.

Excellent results in all parts of the country are being achieved when growing woody ornamentals and tender foliage for up to 6-7 months from one feeding.

Estech's Director of Specialty Products, Irv Stacy, added that the new products expand the Woodace product line so that "we offer a complete fertility program for all types of growers. Our Woodace product line is based on two principles: safety from burning and slow-release nitrogen sources that require fewer applications."

Woodace products are marketed throughout the United States through distributors catering to the nursery and greenhouse grower trade. ■



Palm Beach Trade Winds



By Mike Bailey The Falls Country Club

Need Help? Call The Doctor!

How often have you made a statement about something and then had your superiors express their doubt about your competency on the subject? Just because we are golf course superintendents we are not automatically to be considered experts in every area of golf course management, but we are responsible for knowing where to get the expert to advise us on the best possible way to solve any problems in our area of management. Because we are second guessed by so many armchair-quarterbacks it often may appear as if "everyone" doubts our management practices!

Sometimes it seems that the only way for us to build our credibility is to get that second opinion. My attitude has been that when I need help to confirm my programs I call for help — "I call the doctor". Namely this person would be a specialist within a specific field and one who is generally considered to be an expert. This person consults with me to determine if I am correct or incorrect in my statements. Yes, I do believe that consultants are a must within our industry where the fine line of science can be so greatly altered from day to day.

During my seven years as the golf course superintendent at Boca Greens Country Club I was unfortuante to experience several occurences during my tenure that could easily have persuaded me to want to pursue another career. If it had not been for certain consultants, who I also regard as my friends, I would have moved on. It was my personal desire and choice to be able to help build a golf course, grow it in, maintain it for a developer, convert it to the membership and do a good enough all around job to retain the position of superintendent after the conversion, and to ultimately have a very stable private country club, after all was said and done.

I must thank at least the following specialists within their own field who I called upon to help:

Joseph Lee: The golf course architect who saw to it that the golf course is built in the proper fashion, assuring the developer of this fact.

Vernon Lowell & Bill Roach: Consultants hired by the developer (Development Corporation of America) to advise on the formation of the club, the by-laws and the general designs of such.

Dr. Max Brown: Hired by the membership to help advise on the conversion of the club. His review of the golf course, examination of general maintenance practices, equipment and shop reviews put the members at ease in regards to exactly what type of club they were purchasing. Dr. Brown was also involved with various on-going problems throughout the years such as the herbicidal contamination of the lakewaters, (which will be discussed later).

Sam Kruger: A hired consultant by Development Corporation of America during the early stages of construction and irrigation installation to oversee the time frame for scheduling. This put the developer at ease to realize that all was going well and on line.

Mr. Lynn Griffith & A&L Laboratories: Were involved for nearly the entire duration in regards to laboratory testing. Mr. Griffith advised on issues concering nutritional levels, diseases, various cultural practices and most importantly, recognizing, identifying and suggesting remedies for excessive herbicidal contaminations found within our lake water supply.

Mr. Tom Stone & Brookside Laboratories: Were also involved with the review of lake water contamination.

Mr. Bill Irey & Dupont Chemical Company: Were valuable in regards to analyzing the generic chemicals associated with the vaxious that were found within the lake water supply.

EPA (Environmental Protection Agency): Handled the investigation of chemicals found within the lake water supply. This valuable data concluded that over \$40,000. worth of trees had died because of the misuse of herbicidal chemicals, which showed that the golf course suprintendent was innocent of any such misuse.

Mr. Scott Wanzor & The Monsanto Chemical Company: Addressed the project managers previous speculation, that trees were dying because the golf course superintendent was incorrectly applying Round-Up at the base of trees. Ironically, various trees were dying because of another source, not because of the Round-Up applications.

Mr. Todd Himelburger: Was instrumental in advising and setting up an aquatic spray program which allowed (continued on page 18)

(continued from page 17)

the country club to set up their own spraying program with my aquatic license.

Mr. Elray Timmer of Florida Aquatics: Was able to speculate on various chemicals and their usages in regards to the aquatic program.

Mr. Mike Bodle, South Florida Water Management District: Was beneficial in the setting up of aquatic spraying permits, chemical usage and reports filed to the bureau.

Mr. Joe Konwenski: A turf consultant reviewed contaminations found within the greens.

Mr. Dubble of Texas A&M: A turf breeder specialist, was employed for the examination and the keying out of various speculated contaminations that were scientifically concluded to be found within the greens, which eliminated the previous accusations that the golf course superintendent was responsible because of planting errors.

Dr. Phillip Bussey of IFAS: A turf breeder who reviewed the problems of contaminations found within the greens, an on going review for the past two years has concluded the new greens to have been replanted with pure material, showing no signs of contaminations, they still look good.

Dr. G.C. Horn: Was hired to review the greens and the contamination problems because of his vast experience and university work in this area.

Mr. Ralph White: Was also instrumental in the evaluation of greens material and gave suggestions for curing the problems along with Dr. Tim Boyer.

Dr. Jim Reinert: Was instrumental in the extensive research work that has been performed on the property for the eradication of mole crickets.

Dr. Bill Howard & Jim Castner: Have performed various biological control projects for mole cricket control with work still on going.

Dr. Max Scowyers of Mobay Chemical Company: Has performed many experimental products along with chemical performance tests that have proved to be instrumental in the labeling of Nemacure 3 for turf along with analyzing the synergistic effects of Oftanol combinations with Nemacure.

Mr. Mike Cook: Has performed various chemical tests also, in regards to mole cricket control.

USGA, United States Golf Association: Under the representation of Mr. Bud White, Steve Batten and John Foy has been most beneficial in communicating with the membership in regards to golf course conditions, maintenance practices, cultural practices, reviewing of the greens contamination, suggestions for projects and the examination of the golf course in regards to the membership conversion take over from the previously developer owned country club.

Most importantly, but not last, has been the fellow golf course superintendents within the industry who have so graciously given their time to help advise and consult with me their valuable advice so I could then put it all into the proper perspective. These are the people who genuinely understand my my problems and give me the moral support that is so necessary. It is a sad fact that the golf course superintendent generally does not command the respect from the golfing public for being the true specialist that he is. But then we must always be aware that "the armchair quarterbacks" will be out there on your course telling you exactly what you did wrong yesterday. My brother David has probably advised me the best, "remember you do not own the deed to the land, so therefore do only what is best for you and the course - do not take compalints as personal comments."

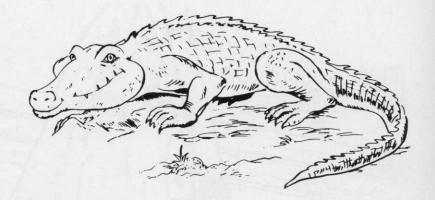
A fellow superintendent brought to my attention a fact of the business world that I guess I really never had thought about before. Large corporations hire teams of consultants to advise the heads of companys on nearly every facet of the business. Literally thousands upon thousands of dollars are spent in acquiring second opinions. Often a second and third team of conultants are hired to confirm the facts given by the first. A chairman of the board never wants to make a wrong decision. They need facts to fall back on if something goes wrong. That is simply good sound business. So why should we be so offended if a consultant comes in to confirm your thoughts and projects. I have found enough good specialists within our industry, who are truly doctors, so when I have a problem, I never hesitate to give them a call. They have come through for me time and time again and I will continue to need their advice until the day I retire. I believe anyone who is qualified to give a second opinion regarding the first individuals opinion is in essence a consultant. In other words, when I need help — I call the doctor. ■





The Gator Growls

By Sandra P. Carmouche



CONSULTANTS - The Pros And Cons

Twenty years ago a golf course superintendent was just as likely to be a farmer or a pro-superintendent as a person with a degree in agronomy. At that time consultants played a major role in the golf course industry out of necessity.

Today the golf course superintendent is most likely a professional person who has attended a college or university that offers programs in golf course operations. Consultants are not needed as frequently or, as some superintendents contend, not at all.

Dick Naccarato of the Naples Beach Club, Jim Witt at Foxfire Country Club, and Buddy Carmouche of Hole-in-the-wall, all in Naples, have each worked with consultants at some point in their careers. They offered the following insights and opinions on consultants and their place in the golf course industry.

Naccarato: "The management of a golf course poses an extremely diverse variety of problems and requires a wide range of expertise. The use of a consultant helps insure a sound decision making process and efficient, economical use of funds.

A consultant is also a link between the superintendent and the club owners and can provide support on cultural practices. He is an outside person who can evaluate the course objectively. Through his many contacts with people in the industry and other golf courses, he can give new ideas and advice on procedures otherwise not known.

It is essential that a good working relationship be established between the superintendent and consultant. Advice or recommendations by a consultant who is not familiar with the budget, labor force, and equipment of those for whom he works can lead to problems for the superintendent.

The consultant must be dependable and easily accessible when a crisis arises or a major decision is required involving the golf course.

Selection of a consultant should be based on a careful study of the individual's proven technical expertise and his history in problem solving at other golf courses."

Witt: "Many golf courses throughout the nation employ

both a superintendent and a consultant in the fine art of growing and grooming the golf course and its surrounding grounds.

I am certain this works well so long as they function as a team, exchanging ideas and working for a common goal. But the bottom line is that the superintendent, who is there over 300 days each year, is ultimately responsible for the condition of the course.

In my opinion, today's superintendent has volumes of information at his finger tips. He is well educated and in command of his complex. If a problem does arise and the solution is not clear, he can call on fellow superintendents or those in related fields to find the answer. Most of these people are very helpful.

I am not an advocate of having a consultant on the payroll."

Carmouche: "I feel that golf course consultants on monthly retainers are a vanishing breed, particularly at the better clubs.

Consultants in the past were successful primarily for the preventative treatments they were able to prescribe. Now, with the higher cost of chemicals which have lower residuals, superintendents are forced to deal with most turf problems curatively rather than preventatively.

With that in mind, a consultant who comes around once a month is only as good as the information he receives from the superintendent.

Also, one of the main functions in the administrative area of the superintendent is crew motivation. How can I expect a Ph.D Agronomist from Atlanta to know the needs and wants of a transplanted Mexican in Naples, or how to make him work more effectively?

If superintendents expect to receive the salary and respect of a professional, we must make our own decisions. The days of the good-old-boy back at the barn, who no member sees, are over. A superintendent owes it to his profession to be seen and answer questions in a sincere and accurate manner.

(continued on page 21)

(continued from page 20)

When a problem does occur and the solution is not evident, there is plenty of help available through other superintendents, county extension agents, tech reps, and universities.

A club would be better seved if it used the money allocated for a consultant to send its superintendent to conferences and local meetings. The club should pay his memebership dues in national and local golf course associations and, in turn, use the associations in times of need.

The U.S.G.A. Green Section is a good, low cost general information service. It also provides excellent yearly seminars in almost all areas of the country which should be attended by superintendents.

I realize, as do most good consultants, that there is a place for them in the golf course industry. A club that cannot afford a top-notch, experienced superintendent would be well served by a consultant.

But in my opinion, our local and state organizations should set up a panel of superintendents to be called upon, free of charge, by a club or a superintendent when they need answers."

Since no one claims to have all the answers to every problem that might arise on a golf course, it is certain that at some point a superintendent will need advice. And although opinions on consultants do vary among superintendents, the final decision should be based upon which approach will most benefit the club.



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WHO SAID

"The Grass Is Always Greener . . . "

By James T. Snow, Director Northeastern Region, USGA Green Section

It is a little-known fact that the enlightened philosopher who once said, "the grass is always greener on the other side of the fence," was actually a widely travelled suburban golfer! In fact, according to rumor, that quote is taken from a verse he once wrote:

The grass is always greener, the trees are always taller, the budget is always lower, the fiarways always shorter, the greens always faster, and the turf is always more dense on the other side of the fence.

Human nature, being what it is, it seems inevitable that golfers will compare one golf course to another. Golf course superintendents, aware of the burden these comparisons create, often ask what can be done to prevent them. The answer is simple. Nothing!

What can be done, however, is to point out variables that make fair comparisons difficult, if not impossible. For example, two theorems immediately come to mind.

No golf course is identical to any other.

No golf course will always be in excellent condition.

If today's golfers consider these statements, fewer repercussions would result from the inevitable comparison.

Begin with the hypotheses. "No golf course is identical to any other golf course." That every course is built on an entirely different site should make this statement obvious. even courses that share common boundaries often contend with different conditions. Varying soil conditions, alone, usually dictate subtle differences in maintenance programs. As soil types and terrain become more divergent between one course and another, so may the maintenance practices needed to keep each course in good shape.

Poor drainage is usually a major factor in course upkeep; it affects soil compaction, turfgrass wear, and disease and results in weak turf and the need for more intensive maintenance. Naturally, drainage problems must be corrected.

On a broad scale, climate has a dramatic effect of what can be done with any maintenance program. Cries for bentgrass greens in the South and bermudagrass fairways in the North are common and require tactful handling by golf course superintendents. More realistically, growing and keeping *Poa annua* requires different techniques in every region of the country, requiring much local knowledge. Even on a local level, prevailing winds, altitude, or the presence of large bodies of water can influence the maintenance of one golf course differently from one just a few miles away.

Finally there is the actual layout of the golf course, almost any course would pale in comparison with Pebble Beach, Winged Foot, or Augusta National, regardless of the qualaity of the maintenance program. When a golfer says, "Why can't our greens and fairways be like those at Ultimate Links Golf Course," chances are he's more infatuated with the layout or site than the conditions of greens and fairways. And any golfer who plays a course for the first time is likely to give that course the benefit of the doubt as far as maintenance is concerned, thus invalidating many comparisons.

Not all golf courses are maintained equally. Some are obviously kept in better condition and this reflects the resources of the club and the tools available to the superintendent. When blessed with decent site conditions and good drainage, a superintendent can expect success with a maintenance program if he has a good irrigation system, an adequate supply of equipment and labor, and a sufficient operating budget. Without these essential tools, little consistency can be expected.

Few golfers appreciate the need for a good automatic irrigation system. The ability to apply water when and where it is needed and in the quantities desired is essential, especially as cutting heights inch fractionally downwards. Outdated manual systems make it very difficult to syringe during stressful weather and usually result in overwatering low areas or underwatering the high spots. Too many superintendents are forced to make the best of a bad situation by having to irritage with an inadequate water supply, a weak pumphouse and poor pressure, weak or corroded pipe, or worn heads and poor coverage. Some are still dragging hoses and sprinklers to irrigate their greens and tees. Is it any wonder that these courses suffer in comparison to others?

The need for an adequate equipment inventory and labor supply is probably more obvious to most golfers, although they usually have no idea of how much is involved. Every course should establish a good program for replacing old equipment and acquiring new pieces on a timely basis. The number of workers will dictate the extent to which maintenance programs can be followed and grooming items can be carried out.

Finally the superintendent must be provided with a reasonable operating budget if he is to bring out the best in the golf course. Determining the actual figure required for a good budget is a real task. Due in part to some of the (continued on page 24)

Personnel Practices

The more freedom you can give people to do a job the way they'd like to, the more satisfaction they'll get from it.

Supervisors are supposed to be smarter than other people, and, in some respects, they probably are. But if you insist on doing all the thinking for your operation, if everything has to be done your way, what's left for the people who work for you to be proud of?

There ought to be something in every job that's satisfying to the person who does it. Unfulfilled people can be just as serious a problem as inefficient methods.

Creating a climate that gives people some independencewithout losing control - takes a lot of management skill. It also hinges on the content of a job and the judgement and ability of the person handling it. Here are some of the techniques that may be helpful.

MANAGING BY OBJECTIVES - giving especially capable people a clear idea of the results you want to achieve and leaving the methods to them.

SUGGESTING METHODS - rather than dictating them -

with the understanding that people are free to devise something better.

CONSULTING PEOPLE affected by a problem or a proposed change and asking their ideas - regardless of whether you think you need them or not.

ENRICHING JOBS - by delegating decisions as far down the line as possible. If a worker is capable of being trained to make a certain decision intelligently, why have it referred to a supervisor? If a supervisor is capable, why refer it above him?

GUIDING YOUR PEOPLE to think of constructive suggestions you may already have in mind, rather than simply presenting them yourself.

ELIMINATING NEEDLESS RULES, and allowing people as much freedom and mobility as possible as long as they produce good results and don't interfere with others.

Supervisors who successfully pratice these things will foster excellent morale among their people. If they can do it without abdicating their own responsibility-without losing control of the situation - they'll also get excellent results.

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(continued from page 22)

variables already discussed, a reasonable budget for one course might not be adequate for another. One thing is for sure . . . trying to compare one budget to another by looking only at the bottom line is mis-leading. Many maintenance budgets include such odd items as golf cart repair, score cards and pencils, golf shop electricity, property taxes, etc. Be sure to compare apples to apples and oranges to oranges if you must compare at all.

Other items affect turf quality and influence subsequent comparisons.

The species and varieties of grasses represent one such category. For example, on fairways in northern climates one will find bentgrass, perennial ryegrass, Kentucky bluegrass and/or annual bluegrass on a particular course. Each requires specialized treatment with respect to fertilization, pest control, cultivation, overseeding, irrigation, and cutting height. The cost of maintaining each species will be different, and their playing characteristics can vary widely depending on the weather and the season.

Another of the intangibles is the presence or absence of trees. Most people consider trees only as items of beauty or hazards to avoid during play; few appreciate their effects on turf and the maintenance of the course. Too many trees in the wrong places, common on many courses, can shade the turf, bolck air movement, and produce surface roots that affect playability and compete with the turf for water and nutrients. It is time-consuming to mow around trees, their roots frequently plug up drain lines, and leaf removal in the fall can be a major and costly budget item. Finally, the trees themselves often require routine irrigation, fertilization, pest control, and pruning.

The extent to which golf carts are used also contributes to appearance and condition. The club policy with respect to cart path construction, the use of carts on fairways, allowing carts out during wet weather or when the turf is dormant, and the number of cart rounds per year will affect the health of the turf and maintenance program.

The amount of play is another consideratin. Small soil-based greens and tees are especially vulnerable to the effect of heavy play, although any course that experiences many rounds of golf is likely to require more intensive maintenance and a larger budget than a comparable course with less play. The amount of play during the winter, when the turf is dormant, is often as important as the play the course receives during the entire growing season. Heavy winter play can be devastating and should be avoided whenever possible.

The demands of the golfers themselves and the standards they set for the course are other intangibles. Demands for lush green grass, short roughs, and soft greens will produce a different golf course and leave a different impression than if the members desire firm closely cut fairways, U.S. Open rough, and firm, fast greens. Other variables include demands for fairway contouring, immaculate manicuring, flower beds, water coolers by every tee, and tree planting.

Now for the second of the two original hypotheses that, "No golf course will always be in excellent condition."

Most unfair comparisons are the result of a golfer's very heavy exposure to his home course and very limited exposure to the other course. If a golfer plays his home course often enough, he is bound to see it at some time in poor condition, if for no other reason than the weather. Flooding winter damage, wind storms, or an irrigation breakdown during 100-degree weather will happen to every golf course. However, if he plays Ultimate Links Golf Course once a year, in late September, it may indeed always seem to be in great shape.

This was brought to light recently during a visit to Deadly Fast Country club, when a Green Chairman asked, "Why can't our greens be as fast as those at Just-As-Fast Country Club?" On a subsequent visit to Just-As-Fast Country Club, their Green Chairman asked, "Why can't our greens be as fast as those at Deadly Fast Country Club?" In following up on this strange turn of events, it seems that each Green Chairman had played the other's course on member-guest weekend. Not surprisingly, each superintendent had done a yeoman's job of grooming his course and double cutting greens prior to the event.

The other story, which is familiar to every golf course superintendent, concerns television golf. All that need happen is for television cameras to focus on Augusta National on a spectacular spring weekend, and practically every superintendent will head for the nearest hideaway for the next several weeks, hoping to avoid the inevitable question, "Why can't our golf course . . ."

Week after week, the television viewer is treated to beautiful, usually high-budget golf courses that are groomed for their one big event of the year. The problem is that the viewers don't see the same course each week. They see only the course that has peaked, much as Deadly Fast Country Club does for its member-guest, for television, and an important professional tournament during a single week of the year. The members at these clubs know that the course does not look and play the same way throughout the season. Any living entity, whether it be a football quarterback, a race horse, or turf on a golf course, cannot be expected to perform as precisely and predictably as a machine. Each will have its good days and its bad, and each will peak at certain times.

The one important secret ingredient missing from this disucssion thus far is the golf course superintendent. Superintendents are only human and as variable as the golf courses they manage. Each has his special strengths and weaknesses, and some are more suited to certain types of courses than to others. As a group, however, they represent a dedicated, professional company. When golfers compare courses, they often state it in such a way as to suggest that there is some human failing on the part of the superintendent that should be blamed. As we are all human and capable of mistakes, or misjudgements, this could be true. However, it is probably apparent from this review that many other factors play a role in any problems or concerns being experienced on a particular course.

Thus, when golfers get the urge to criticize their course or compare it to another, they should first stop and think about the site, the tools, and the intangibles that so greatly influence the way any course can be maintained. After considering these elements, they then might conclude that the grass is actually greener on their side of the fence.



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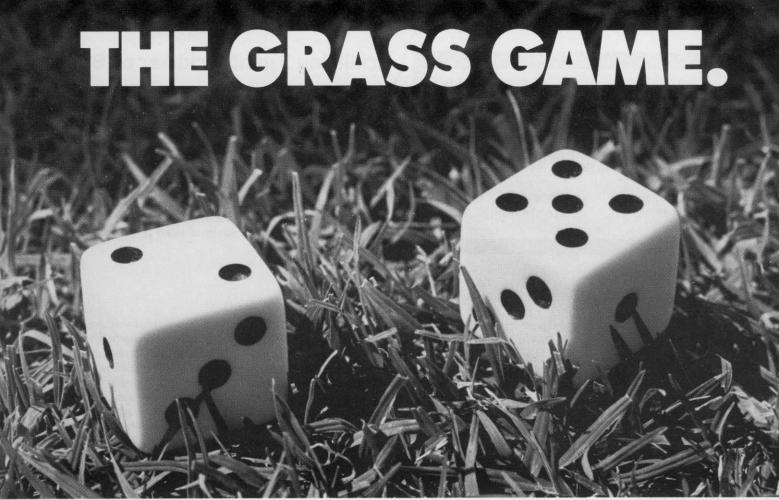
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Alkaline water, even mildly alkaline, causes alkaline hydrolysis (degradiation) of many pesticide chemicals, some in less time than it takes to put out a tank of spray. This problem is much more serious than is generally recognized.

pH Effect On Pesticides

A large number of commonly used pesticides are decomposed quite rapidly in water containing detectable amounts of alkalinity. This decomposition is due to a reaction called alkaline hydrolysis in which the pesticide molecule is split by the water and converted to an inactive from. The rate of decomposition is determined by the chemical make-up of the pesticide and is different for each compound. The reaction in all cases proceeds more rapidly as the pH of the water increases (becomes more alkaline). Organophosphate and carbamate insecticides are the principal types of materials affected in this manner. In areas where water supplies are alkaline (pH over 7.0), pesticide decomposition can proceed at a rate rapid enough to affect the degree of insect control obtained. This decomposition can be slowed or prevented by adjusting the pH in the range 4-6 (slightly acidic). Pesticides applied from solutions having a pH in this range will undergo the minimum amount of alkaline hydrolysis, and spray solutions will contain the maximum amount of active ingredient for pest control.

A list of pesticides which are subject to alkaline hydrolysis is given below. The list is incomplete. The information has been obtained from manufacturers and from various technical publications. Where such information is available, it is reported in terms of "half-life" or "time for 50% hydrolysis", i.e., the time required for 50% of the active ingredient to hydrolyze to inactive material in an aqueous solution have the indicated pH at a temperature of 25°C. The reaction proceeds more rapidly as the temperature increases.

Effect Of Hydrolysis On Some Commonly Used Pesticides

Chemical	Common Name	pH	Half-life (50% hydrolysis)	
Cygon	dimethoate	6.0	12 Hours. Unstable in alkaline water	
Diazinon	diazinon	6.0	37 hours. Hydrolysis rapid in strong acid or alkaline water	
Dylox	trichlorfon	8.0	63 minutes	
		7.0	6½ hours	
		6.0	3.7 days	
Guthion	azinphos-methyl	9.0	12 Hours	
		5.0	17.3 days	
Imidan	phosmet	8.0	4 hours	
		7.0	12 hours	
		4.5	13 days	
Lannate				
Nudrin	methomyl	Stable only in slightly acid water		
Enthyl Parathion	parathion	11.0	11.0 170 minutes	
		10.0	29 hours	
Sevin	carbaryl	9.0	24 hours	
		8.0	2½ days	
		7.0	24 days	
Benlate	benomyl	7.0	1 hour	
		5.6	Over 30 hours	
Bravo	chlorothalonil	7.0	72 minutes	
		6.0	6.8 hours	
Captan	captan	10.0	2 minutes	
		4.0	4 hours	

W.M. Coli. S. A. Weis, J. M. Clark, University of Massachusetts, Amherst. "Does The pH Of Your Spray Tank Mix Influence Pesticide Efficacy?"

Tank Mixing Poses Considerations

By Dr. Peter Dernoeden Turfgrass Agronomist, University of Maryland

Little information exists regarding the chemical interactions of tank mixes. Most chemical incompatibilities, however, are noted on pesticide labels. In this article, the types of fungicide incompatibilities and testing for compatibility will be reviewed.

There are two general types of incompatibilities: chemical and physical. Chemical incompatibilities generally occur when pH or the presence of one of the compounds reduces the efficacy of a pesticide or when the mixture injures, that is, is phytotoxic to the turf.

Some examples of chemical incompatibilities are:

- mixing an alkaline reacting fertilizer such as Formalene (pH about 10) reduces the efficacy of benomyl;
- mixing lime with Dyrene, Fore, Tersan LSR, Thiram or Aineb reduces their effectiveness.
- mixing Trimec or Trexsan with Daconil wettable powder (WP) may cause formation of a precipitate (i.e., solid particles separate out of the suspension or solution, forming a solid material at the bottom of the tank).
- mixing organic fungicides (most fungicides, with the exception of Actidione, and cadmium or mercury-containing fungicides, are organic) with emulsifiable concentrate (EC) formulations of insecticides can be pyhtotoxic;
- Karathane (Dinocap) is not compatible with Sevin (an insecticide) and oil-base formulations of other pesticides.

Dr. Paul Sartoretto of the W.A. Cleary Corp. has extensively studied chemical incompatibilities of pesticides and has established four general rules that should be considered before tank mixing. These rules are as follows:

- Rule 1. Never tank mix emulsifiable insecticide concentrates.
- Rule 2. Mix only one soluble chemical (i.e., EC and L liquid formulations) with any number of insolubles (i.e., WP and F formulations).
- Rule 3. When mixing two soluble chemicals with or without insolubles, the rate of each soluble should be halved to avoid phytotoxicity.
- Rule 4. Soluble fertilizers and trace elements can be added individually or mixed, provided the amount will not exceed one ounce solid per gallon tank spray mix.

Physical incompatibility is normally an equipment-related problem. For example, wettable powders mixed without sufficient agitation or without a sufficient amount of water will clog screens. Pre-wetting and creating a slurry is helpful in getting wettable powders into suspension, especially when spraying with a small quantity of water.

Other tank mix considerations: insecticides and pre-emergence herbicides are generally watered-in after application. Conversely, turf treated with fungicides should not be irrigated for at least 24 hours, and preferably 48 hours. Hence, tank mixing fungicides with insecticides and pre-emergence herbicides would greatly reduce efficacy.

It is important to mix only enough material to be sprayed in one day. Chemicals will interact in the tank, and if enough time elapses, the effectiveness of the pesticides will diminish.

Temperature also influences pesticide effectiveness. As temperature in the tank increases 10 degrees Celsius, the reaction rate of chemicals will double and thereby increase the likelihood of phytotoxicity or reduced efficacy.

Time and temperature affect the performance of insecticides and fertilizers more significantly than fungicides.

COMPATIBILITY

Many incompatible combinations are listed on pesticide labels. Frequently, however, compatibility questions arise, especially when dealing with new formulations of pesticides or when unusual pesticide combinations are being considered. It therefore becomes necessary to test the compatibility of a mix yourself.

This is best achieved through a simple, two-step test. Step 1 merely involves placing a mixture of the precise dosage of pesticide plus the appropriate amount of water in a quart jar for 30 minutes. If separation of chemicals occurs or if materials settle out, it is probably unwise to use the mixture.

Step 2 should be performed regardless of results acquired in Step 1. In Step 2, the mixture is applied to turf. Preferably, the mixture should be applied during adverse environmental conditions such as hot, dry weather and overlapped to insure the phytoxicity does not occur. A minimum of 48 hours should elapse before the response can be properly evaluated.

When mixing pesticides of different formulations, the order of mixing should be as follows: wettable powders - flowables - soluble powders - surfactants - emulsifiable concentrates². Pesticides should only be placed into a tank that has been half-filled with water and with the agitation system running.

Reprinted from Turf and Verdure, March 1986.



Suncoast Sails

By: William "Mike" Miles River Wilderness Yacht & CC

CONSULTANTS: A Handy Tool During Construction

As a Golf Course Superintendent one tends to find out that during the course of a normal work day you may find yourself making decisions on solving problems that may not have anything to do with a golf course at all. Certain situations seem to arise (especially in a development type course) that may pertain to anything from requiring knowledge as a plumber, electrician, a mechanic or even a doctor. Unfortuantely the need for immediate first aid has and does arise.

Whenever a problem arises in an area that I don't have quite the expertise to handle, I generally try to rely on someone who specializes in this particular field. The point I am trying to make is that anyone you may have to contact for any type of information could be considered a consultant.

Finally, getting back to the subject of being a Golf Course Superintendent I have utilized the services of an actual golf course consultant on two different occasions and for different reasons.

My first job after graduating from school was as an Assistant Superintendent at a 36 hole golf course development that had just begun construction.

The Superintendent I was working under had acquired the services of a well known consultant who specialized in turf and related problems having to do with the growing in of new courses.

Having a consultant on our "team" at this point of con-

struction was very helpful in several different ways.

Our consultant acted as a liaison between the Superintendent, the Owner and the Golf Course Architect. He was instrumental in helping to create a design that was easily maintained when the hole was finished, which made life easier for us as Superintendents. By doing so this made the Golf Course Architect look good and made the owner happy by making maintenance of his course more reasonably efficient, thus saving money.

I feel the sevices of a consultant while setting up a brand new program can be most helpful not only with his knowledge of agronomics, but also in helping the Superintendent to obtain the equipment he will need to properly maintain his course. Last, but not least, the biggest help was in setting up a budget for the upcoming year.

Nothing could be worse than working on an inadequate budget the first year, especially when you tend to have more problems than not. My belief is that a consultant can help you a great deal in getting off on the right foot at a new course, especially if you are woking for a developer who might not have built a course before.

In order to have a successful relationship between a Golf Course Superintendent and a consultant of any type, I believe you must be able to communicate with each other and most importantly the two of you must work as a "team" in order to successfully produce the finished product your club is looking for.



By Michael Hamilton, G.C.S. Cypress Links Golf Club, Tequesta, Florida

Our Multi-Faceted Role

Many times during a normal working day I will be in the clubhouse discussing finances, staff problems or one of a hundred other things that occur relating to golf course managment. On occasion, I have heard a member say, "That man is the greenskeeper here." To this person, keeping the grass green is my entire job description — any one off the street could accomplish that!

I often hear members complaining about course conditions. One example would be dry greens. I will explain to them that the pumps have been down and that we are doing our best to correct the situation. To most of them, that fact doesn't matter. They feel that they are paying good money to be a member and they want perfection. There is absolutely no excuse for imperfection. Perhaps all superintendents could be perfect if mother nature worked with us 24 hours a day!

Most golfers do not realize how creative and versatile one must be to become a successful golf course superintendent. Usually those who are the most ignorant of superintendent's ability are the people who control salaries and job security. We need to project our abilitites and knowledge to all who benefit from our labors.

I don't know of any other professional job that requires one to wear the many hats of the golf course superintendent. The superintendent, at most courses, needs to be a mechanic. How many times have you trained an inexperienced mechanic or had to repair something yourself when the mechanic is busy, sick, or on vacation? If a machine breaks down and the part needed is on backorder, you become an inventor to get the equipment back in operation.

You need to understand soil chemistry, so you're an agronomist. You have to be a horticulturalist because you grow much more than grass. A major part of your job is understanding the weather, so you're a meteorologist.

Your club decides to make changes to the golf course. Naturally, they can't afford to contract the work out and you must do it yourself as cheaply and efficiently as possible. You're an economist. They want new shrubs and trees; you're a landscape architect. A new weather shelter and restroom are needed; you're a contractor. Cart paths are required; you're a paver. A toilet is clogged or a sink leaks; you're a plumber.

The irrigation system is down — either it's the pumping station, broken pipes or malfunctioning heads. You have to determine what is wrong and you must fix it as quickly as possible or the course will suffer; you're a magician. Someone has to know when and when not to water; you're an irrigation technician.

Mole crickets, ants, weeds and fungi start to take over; you're an exterminator. If you have wildlife or fish in your ponds you must be careful with what and how much you spray; you're an environmentalist.

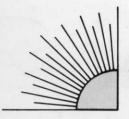
Someone on your crew has a problem. To get maximum production out of this individual the problem has to be solved; you're a counselor. You have to set up work details and make sure your plans are carried out correctly; you're a labor supervisor. You have to make people work well together; you're a coach. You are always training inexperienced help; you're a teacher. To help boost morale, you play in a softball league with your crew; you're an athlete. You have an employee who is not being productive but everytime you approach him he appears to be working hard. You become a spy in order to find the cause of unproductivity and put the problem to rest; you're an efficiency expert.

To guard against being taken advantage of by salesmen, you have to think like a salesman. Look at all the products you can sell if you lose your superintendent's job!

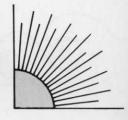
In order to see the course from the members' point of view, you also must be a golfer. Most likely, you play golf with members; you're a public relations expert. The superintendent is often asked for a ruling on the course; you're a referee. Someone you are playing golf with wants to know how to grow this or that; you're a consultant.

The list goes on and on. You're a budget director, a laborer, an equipment operator, a mathematician, an accountant, a file clerk, a negotiator, a surveyor, a computer programmer . . . etc. I'm sure there are many other roles that haven't been mentioned.

With all this talent and versatility, why is the average golf course superintendent unappreciated and underpaid? Because the general golfing public doesn't know what it takes to be a superintendent today! We need to educate these people and make them more aware of our abilities and talent. Then, hopefully, we will gain the respect and pay we deserve!



South Florida Sunshine



By: Loy Faulk Emerald Hills Country Club

Support Your Local Golf Course Superintendents Association

A concern of many active golf course superintendents in a local chapter of the Florida Golf Course Superintendents Association is how to convince non-members to join their organization. Another problem is how to encourage inactive members to attend the monthly meetings. I personally cannot think of one valid reason why golf course superintendents do not want to participate in their local golf course superintendents association. I would venture to say that most superintendents are members of a local association. However, the percentage of superintendents present at the meetings is often poor. But why? There is a great deal to be gained and absolutely nothing to lose by being an active member in your local chapter of the Florida Golf Course Superintendents Association.

The cost of attending a meeting of the South Florida Golf Course Superintendents Association is usually in the range of 20 to 25 dollars. This price includes coffee and danish, a delicious lunch and an enjoyable round of golf. If you play well you may win a gift certificate so you can load your bag with new golf balls for next months challenge. You also get a day off work from your course with the opportunity to learn new ideas from the host golf course. But most important is the opportunity to learn valuable information about the golf course industry through entertaining lectures and discussions concerning our profession. All this for \$25 bucks? Only at your local golf course superintendents association monthly meeting!

Many superintendents have their club pick up the tab. This is a good fringe benefit for the superintendent. This is also a good indication that the club wants their superintendent to attend the meetings so he can learn more about the profession of golf course maintenance. Both the superintendent and the club benefit. Currently, my club pays the yearly dues while I pay for the monthly meetings and I think that this hard earned money out of my own pocket is money well spent for my future as a golf course superintendent. If you feel that you cannot afford being a member of your local association, ask your club to pay your yearly and monthly dues. At least ask your club to pay your yearly dues. Bring to your club's attention the importance of being an active member in a golf course superintendents association. Tell your club about the infinite amount of golf course related knowledge that can be obtained from spending a day with people in your profession with similar problems and concerns. I am sure that your club would require you to attend monthly superintendent meetings if they knew the potential for improvements on their golf course that could result from these monthly gatherings.

A wealth of knowledge is available at a superintendents meeting. Mingling with fellow superintendents and sale representatives can reveal many new ideas to solve your problems. Maybe another superintendent has successfully eradicated all weed infestation on his golf course. The chemicals and rates he used could possibly help you with your weed problems. And I am sure there will be a technical representative from a chemical company closest at hand that will be more than happy to help you with prices and ordering. If you are lucky enough to be granted the funds for new equipment you still have to decide which manufacturer and type of equipment to purchase. There is a good chance that someone at a superintendents meeting either sells or has already purchased the type of equipment you are considering.

Throughout the meeting there are several opportunities to acquire information that will make your job easier and more secure. Much can be learned about new laws that have recently gone into effect or are about to be approved. Early knowledge of these laws can keep you out of big trouble. I probably would have never learned about the new Broward County well field zoning ordinance for potable water wells, the anti-syphoning requirements for my liquid fertilizer injected irrigation system, the permit requirements for chemical storage, or the latest regulatons concerning the new Florida Right-To Know law until it was too late had it not been for my correspondences with the South Florida Golf Course Superintendents Association... Superintendents can learn from one another and guest speakers to fully understand these new laws and regulations.

The potential for knowledge, increased professionalism and a tremendously good time is surpassed at a golf course superintendents monthly meeting. Support your local chapter of the Florida Golf Course Superintendents Association. You'll become a better golf course superintendent. Guaranteed!!!

GET TWO FOR LESS THAN THE PRICE OF ONE.

If you're using more than one product to kill mole crickets and nematodes, you're wasting money. Because, in Florida, there's one product — CHIPCO® MOCAP® insecticide/nematicide — that effectively and consistently controls both for less cost than products that control only one. CHIPCO MOCAP works fast, not only on nematodes and mole crickets but also on

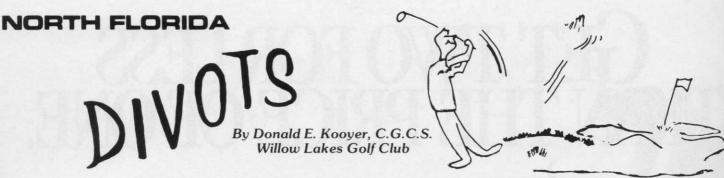
a broad spectrum of grubs and surface insects. It can be used on Bahia, Bent, Bermuda, Centipede, Fescue, St. Augustine and Zoysia turfgrasses. And now it's formulated for lower oder, too

formulated for lower odor, too.

Ask your supplier for CHIPCO

MOCAP... the one and only product
that gets your two biggest turf pests for less than
the price of one. Rhône-Poulenc Inc., Agrochemical
Division, Monmouth Junction, NJ 08852.





Consulting the Professionals

Recently, while attending the Golf Course Superintendents Association Conference in San Fransisco, I had the chance to once again meet and consult with many of my friends throughout the United States. While attending one of the many educational classes available I had the opportunity to talk with a friend from St. Louis Missouri. Denny asked me how I had been able to make the transition from the St. Louis area to north Florida. The very first thing that came to mind was consulting your superintendents association. (Incidentally to obtain my job in Florida, I consulted with our national Golf Course Superintendents. Association by using our job referral service. For a small fee our headhunter service will let you know of positions opening all over the world. What else could you ask for but a world wide consulting service!) I told Denny that the first thing you have to do is contact your local superintendents chapter, in my case the North Florida Superintendents chapter. By consulting with my local chapter I had access to valuable information that I would need to set up and manage my golf course maintenance operations. Talking with my fellow superintendents via the telephone and chapter meetings I soon had information that only the local superintendents could help me with. This included staffing, discovering if there golf course personnel available in the area, what the average wage is for course personnel, if there are any golf course training centers in the area, etc. Also weather information such as the average amount of rain fall, what months are the hottest, if there is water allocation now or will be in the future. By consulting with your local professional superintendent that have used the services of and equipment distributors you will save suppliers, such as sand companies, irrigation, fertilizer many hours and steps in the wrong direction.

There is one organization with which I have consulted in the north Florida area that is invaluable. This is the extension service which is available in all the areas I have worked from Minnesota to Florida. Your local state agriculture extension service is invaluable in the agricultural service provided, they will have all the current laws and regulations that you will need to study to obtain your pesticides license. I have had to study and take examinations in Minnesota, Winsconsin, Illinois, Missouri and Florida, all of which were different, all of which I used the services of the agricultural extension service to help me. By consulting with the extension service you can obtain information concerning soil types in your area. You can also discover which grasses are dormant, what types of pests you will have the most problems with and of course, what type of controls are available and what type can not be used under the laws in your area. Each state has laws

that set and regulate the types of pesticides you can use in your turf program. Federal and state environmental agencies are continuously changing regulations by adding and changing existing laws. By contacting the extension service often you can stay on top of these changes. This will not only allow you to have the information needed for a proper pesticide program and records, you will also have the information needed to renew your license when the time comes. You will also have the piece of mind knowing that you have the knowledge to handle and use pesticides properly. Don't forget it is your responsibility to inform and instruct your crew on the safe use and handling of pesticides.

By consulting with the professional staff of the north Flordia extension service you can attend the continuing education classes offered for the turf industry. When I first obtained informaton from the service in another state I have worked in, the information pamphlets were excellent. Also the reference manuals, training films, and slides were very good as training aids. The Florida agricultural extension service not only has these training aids it also has entered the computer age along with Lake City Community College.

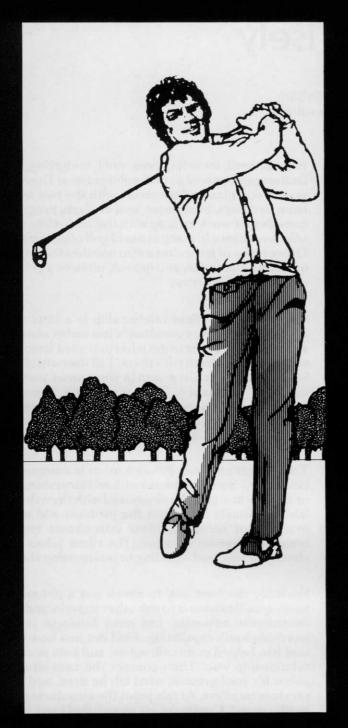
You can consult with the educators of the best golf coure training facilities in the United States and Canada and I believe as superintendents we are very fortunate to have such facilities to consult with in our own back yard.

With the joint computer programs that these organizations have started we can look forward to more and continuing technical information. Now that Mr. Jones at the extension service has had the forsight to bring the best in training aids to his facility. We can not only consult with Harold but we can also consult with his computer.

Computers are an excellent consulting tool. While in San Fransisco at the continuing educational classes I was attending. Dr. Short flashed the computer programs on the large screen in front of hundreds of professionals from all over the world. It made me proud to be part of the Florida association.

Now that Denny and I have arrived back to our respective courses, we have gained knowledge through consulting with the professionals and technical people of our association. By meeting and sharing our knowledge at our local meetings and on a daily basis we will all continue to grow as professionals through consulting with each other. "You have taught therefore I have learned."

We work at ground level...



so you can play on top!

The fact is, Central Florida Turf is working hard to provide you with superior workmanship in construction of new golf facilities, irrigation with all turf installations or renovation of existing golf courses ...

and all at a competitive price!

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For more information, call Dennis or Dan at (813) 452-2215 or (813) 452-1222.



Dennis Crews



Dan Winter

Central Florida Turf, Inc.

Specialists in Bermuda Grass
47 Lake Damon Dr., Avon Park, FL 33825
Telephone: (813) 452-2215

Using A Turf Consultant ... Wisely

By Lyn Griffith Soils Consultant

Growing grass is not easy. If it were, the golf industry wouldn't need to hire the trained, educated, dedicated professionals it currently employs. Instead, we would use lawn maintenance services (or even livestock) to groom fairways and roughs. For greens, we could simply set the rotary mower setting a little lower, and cut out a putting surface.

The fact is, of course, that grass is not easy to grow. The quality demands of the members at today's public and private courses make the job of golf course superintendent demanding indeed. The better courses are required to look top-notch all the time, regardless of weather, heavy play, mechanical problems, or inadequate course construction. Superintendents occasionally need outside help, and the turf consulting industry is there to provide the service.

Perhaps the first obstacle to overcome when hiring a consultant is to convince the membership committee or owners that outside help is justified. Why should a trained turf professional need assistance? Doctors get second opinions, lawyers consult with their associates, and businessmen bring in outside experts. Another pair of eyes, a different perspective, or some specialized expertise can be a great help in any complex, technical field. The best minds in every discipline utilize consultants, and paid advisors for hire exist in every industry. Using other peoples' brains and experience in order to do a better job is admirable and productive, not demeaning or defeatist.

Superintendents most often use consultants in a trouble shooting capacity. Serious turf problems can come up at anytime, and a rapid, accurate diagnosis of the problem is critical. Consultants can usually provide such help. Often help is brought in after initial efforts to treat the disorder have failed. Usually other superintendents are then called, and finally the paid expert. If the consultant can diagnose and advise correct treatment, he is usually worth his fee and then some. If not, he can be just another blind alley.

Other superintendents prefer to bring in outside advice every so often to monitor the course and help guide its progress. Often the expert is called simply to inform the superintendent of new ideas, products, or techniques. Such timely information can be valuable in tanglible as well as intangible ways.

Other times, consultants are seen on a frequent, regular basis to oversee and advise on many aspects of golf course

management, including personnel, budgeting, design and landscaping, as well as turf maintenance. The relationship is very complex and personal, with the two working as a team to design, implement, and evaluate programs. Some consultants work strictly with the turf, while others may offer assistance in many areas of golf course management. Other types of agriculture also use these services, including farms, nurseries, and groves, often to a greater extent than the turf industry.

The consultant-client relationship is a little different in each case, and the consultant's job varies somewhat with each client. In order to get what you want from consulting services, be up front with them. Tell the consultant what it is you want to achieve, and in what areas you would like technical assistance. That way, each knows what to expect from the other, and what the objectives are. At the same time, the consultant should inform the superintendent of the available ways in which he can help.

Turf consultants usually work for or in conjunction with a laboratory. Some problems with soil structure, chemistry, or disease just can't be diagnosed with the naked eye. The lab can usually figure out the problem and monitor the progress of recovery. Most consultants regularly use laboratory services, helping the client select what tests should be run, and assisting in interpreting the results.

Probably the best way to check out a potential consultant's qualifications is to ask other superintendents. Some consultants advertise, but most business is gained by word-of-mouth reputation. Find out just how the consultant has helped your colleagues, and how productive the relationship was. Then contact the consultant and ask about his background, what lab he uses, and the type of services he offers. At this point the structuring of fees can be discussed. Contracts are sometimes used, but we have found them to be generally unnecessary. They can protect both parties at times, but they can also be a hindrance.

A good, inexpensive way to try a consultant out is to call him in to trouble-shoot a problem you are having. From this, you can evaluate his knowledge, approach and effectiveness. If he solves or at least figures out the problem, then he can probably do the same for many of your other problems. This way, you can see just how it would go having an advisor around, and just how productive the arrangement might be.

■

Ransomes Introduces 54" RIDER

This new rider from Ransomes, Inc. can tackle the big jobs. A powerful 16HP Kohler gasoline engine with cast iron cylinder block for long term, dependable service. The 54" outfront floating cutter deck cuts the grass before it can be compacted and neatly accommodates undulating terrain with its front and rear rollers.

Single rear wheel steering provides excellent maneuverability. Adjustable high back seat is positioned forward of rear steering wheel for smooth operator ride.

Ideal for parks, parkways, municipal grounds, cemeteries, campuses and golf courses.







An Improved "Home-Made" Mole Cricket Bait

By Charles H. Peacock and Don E. Short

An improved formula of the malathion bait has been developed. It is the result of several years work by an IFAS graduate student, Dr. Rod Kepner.

The new bait has consistently proven to be as effective and in most field evaluations more effective than commercially prepared baits.

Formula and directions for mixing the bait in 50 lb. batches are as follows:

50 lbs. crumbalized laying mash (similar to Purina layena)

2 qts. 50-57% and malathion EC

3 pts. CRUDE cottonseed oil

6 lbs. table sugar



Thoroughly stir and dissolve sugar in 2 qts. hot water. Add cottonseed oil and malathion to sugar water.

Use a 2-3 gallon knapsack sprayer with nozzle tip removed to spay ingredients on laying mash while turning in cement mixer.

Put bait into laying mash bag lined with a plastic bag and store for 1-2 days before application.

Bait will absorb moisture during this time and application will be less difficult.

Calibrate a three-point-hitch cyclone fertilizer spreader to apply 12.5 to 15 lbs. bait/acre.

Cost of ingredients is approximately \$4.50/acre at the 12.5 lb. rate. Apply bait as late in the afternoon as possible.

Optimum time of year for application would be during July prior to the extensive damage that occurs in August, September and October.

The crude cottonseed oil must be obtained from an oil mill from the list below. There are no refining plants in Florida. It is hoped some agricultural supply companies in the state will be stocking the oil in the near future.

The following is a partial list of suppliers of crude cottonseed oil in the southeast:

> Hartsville Oil Mill PO Box 1925 Hartsville, SC 29550 803/332-3526 813/484-9416 (Branch Office) Mr. Dick Kopein

Albany Oil Mill PO Box 548 Albany, GA 31702 912/435-4501

Ninety Six Manufacturing PO Box 128 Ninety Six, SC 29666 803/543-2711

Southern oil Co. Division of ADM Mills PO Box 95 Montgomery, AL 36101 205/263-4747

Yazoo Valley Mills Locks Drawer 1320 Yazoo City, MS 38930 601/453-4312

For additional information contact Dr. Don Short, Dept. of Entomology-Nematology, IFAS, University of Florida, 904/392-1938.■



and present...



GROUNDSMASTER® 217-D AND GROUNDSMASTER® 220



These durable riding rotaries, powered by air cooled gasoline or water cooled diesel engines, mow with exceptional maneuverability, trim close like walk mowers with a choice of 52" or 62" cutting units, and produce maximum results in a variety of applications.

Toro engineering makes our Groundsmaster 217-D and Groundsmaster 220 deliver superior performance. And Toro durability keeps them that way longer.

DURABILITY FEATURES:

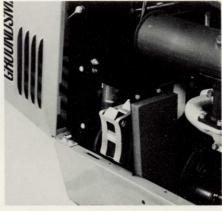
POWER TO SPARE FROM ENGINES PAINSTAKINGLY TESTED AND SELECTED BY TORO ENGINEERS to fit the machine and its applications:



Groundsmaster 217-D has a 17 hp, 46.6 cu. in., water cooled Mitsubishi diesel engine. To protect the engine, standard features include high temperature shut down and oil pressure warning light/buzzer.



EXTRA CAPACITY COOLING SYSTEM: Groundsmaster 217-D has an industrial type radiator with tube and fin construction; 7 fins per inch to reduce radiator plugging. 6 quart capacity.



ROOSA-MASTER WATER SEPARATOR is standard on diesel model. It removes 95% of the water inherent to diesel fuel, protects you from costly repairs and parts replacements.



Groundsmaster 220 is powered by a 20 hp, 47.7 cu. in., twin cylinder, air cooled Onan engine for strong, quiet performance. Features include:

- · High temp shut off
- · Low oil pressure shut down
- Crankcase oil cooler
- Remote oil filter



HEAVY DUTY DONALDSON AIR CLEANER is industrial type. Keeps your engine running longer by filtering out dirt and other contaminants before they can cause excessive wear. Allows dirt to be removed easily at the end of each day.



HYDROSTATIC DRIVE provides single pedal operation for forward/reverse speeds. Easy, smooth maneuverability with no clutch to wear out. Also, your operator gets superb speed control for all conditions. Infinitely variable speed up to 8.5 mph.

PERFORMANCE FEATURES:



RUGGED ROTARY BLADE SPINDLE to stand up to bombardment of rocks and other debris. Toro uses a cone rather than a cylinder housing, and splines rather than keys, to better absorb shock loads. Tapered bearing assembly used. All for greater durability.



P.T.O. DRIVE SHAFT more efficient than most hydraulic drives, with mechanical engagement for decks or accessories. Avoids belt misalignments and makes changing from one accessory to another a breeze.



OFFSET DECK OUT FRONT AND REAR WHEEL STEERING for

superior maneuverability. And the 52" and 62" decks are just right in size. Big enough to get the job done quickly and small enough to get into those tight spots. Both decks are offset 10¼ inches to give you one pass trimming around trees and obstacles. It's also ideal along curbs and beneath overhanging shrubs.



from 4 wide stance wheels plus low center of gravity. Front drive wheels and rear wheels are equipped with 4 ply rated tires. Both drive wheels have drum brakes controlled by individual pedals.



CUTTING HEIGHT ADJUSTS EASILY from 1 to 4 inches without tools. Simply pull four pins.

FLOATING DECK means more consistent cut, even over irregular terrain, because the cutting unit is suspended within a carrier frame. And, the entire deck raises hydraulically for fast, easy transport over obstructions like curbing.

COUNTERBALANCE SPRINGS provide adjustable deck floatation while improving front wheel traction.

operator station features adjustable, molded cushion seat, or deluxe suspension seat for a smooth ride all day long. Is inch steering wheel, hour meter and ammeter, all located for maximum comfort, convenience and efficiency. Safety interlock stops engine when operator leaves seat with PTO or traction pedal engaged.

Team your Groundsmaster 217-D or Groundsmaster 220 with any of these deck combinations.

GROUNDSMASTER® 217-D PRIME MOVER.

Shown with floating 62" deck. Driven by a 17 hp, 46.6 cu. in., water cooled Mitsubishi engine. Designed for mowing up to 3.4 acres/ hour. Ideal for mowing small to medium sized open areas, and for trimming in medium to large areas. Variable ground speed up to 8.5 mph. Hydrostatic drive for single pedal forward/ reverse. Four wide stance wheels with 4 ply rated tubeless tires. Front wheel traction drive. Rear wheel steering for greater maneuverability. Individual drum brakes for left and right traction wheels to allow for brake assist steering that makes possible trimming up to a 0" uncut circle. Operator controls designed for easy access and operation. Molded cushion seat or deluxe suspension seat offer operator comfort even on the toughest terrain. Remote mounted air cleaner standard. Tough commercial strength construction. PTO drive shaft for easy interchangeability of decks and accessories.



This three bladed, front mounted rotary unit offers full floatation in all directions, with rollers in front and back for reduced scalping. Ideally suited to cutting situations that involve hilly, uneven terrain. The Groundsmaster with floating 52" deck is capable of mowing up to 2.8 acres an hour at 5.5 mph. Deck offset $10^{1/4}$ " to the left for greater trimability. Capable of a 0" uncut circle with brake assist. Has a $51^{3/4}$ " width of cut. Can cut from a height of 1" to 4" in $\frac{1}{2}$ " increments and has simple adjustment without tools. 5" deep, 12 gauge stamped steel Wind-Tunnel® housing for easier cutting and clippings discharge even on wet grass.



GROUNDSMASTER 52" STANDARD DECK.

The Groundsmaster with 52" standard deck is capable of mowing up to 2.8 acres an hour at 5.5 mph. Unit has $51^{3}4''$ width of cut with the three blade front mounted rotary deck. Deck offset $10^{1}4''$ to the left. Can cut a 0" uncut circle with brake assist. Can be adjusted easily for a height of cut, from $3^{4}4''$ to 4'' in $1^{1}4''$ increments, without tools. Has 5" deep, 12 gauge stamped steel Wind-Tunnel® housing for easy cutting even on wet arass.



GROUNDSMASTER 52" FLOATING REAR DISCHARGE DECK.

Designed for controlled discharge of clippings to the rear center between wheels. Has full floatation design with front rollers to reduce scalping. Constructed from 12 gauge steel and is 3" deep. The 51¾" deck can mow up to 2.2 acres/hour at 4.5 mph. Three bladed front mounted rotary is offset 10¼" to left for close trimming around obstacles and under overhamgs. Adjusts from 1" to 4" in ½" increments without tools. Lifts hydraulically for transport.



GROUNDSMASTER 217-D and 220

62" floating cutting deck

52" floating cutting deck

52" standard cutting deck

52" floating rear discharge cutting deck



GROUNDSMASTER FLOATING 62" DECK.

Capable of mowing up to 3.4 acres an hour at 5.5 mph. Front mounted, three bladed, rotary deck has 61% width of cut. Deck is offset 101% to the left for greatly increased trimability. Capable of 0" uncut circle with brake assist. Deck easily adjusts without tools for a height of cut from 1" to 4" in 1%" increments. Rugged 5" deep, 12 gauge steel welded construction for greater durability even in tough mowing conditions.



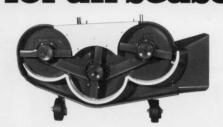
GROUNDSMASTER GRASS COLLECTING SYSTEM.

Designed to fit the Groundsmaster 52" floating deck, the Grass Collecting System allows on-the-unit bagging of grass clippings. Utilizes a separate 16" diameter blower attached to the deck's discharge port that virtually eliminates clogging. A

durable one-piece, high-density polypropylene chute directs the grass clippings back through a hinged hood mounted to the bag support system. A rear-mounted polyester bag for clippings is positioned inside the path of the cutter deck for easy maneuverability. Hinged hood on top of bag support opens easily for quick removal of grass bag. The grass collecting system comes standard with a polyester bag capable of holding 7 bushels of grass clippings. An optional dry condition polyester bag that will hold up to 10 bushels of clippings is also available.



These accessories make our Groundsmaster 217-D and Groundsmaster 220 professionals for all seasons.



gauge steel, the leaf mulcher mounts under side discharge decks allowing blades to vacuum and pulverize fallen leaves.



ROLL OVER PROTECTION SYSTEM. Certified roll over protection system (ROPS) for greater operator safety conforms to OSHA regulations, includes seat belt for greater safety.



SPARK ARRESTOR MUFFLER. Minimizes spark emissions.



PNEUMATIC WHEEL/TIRE ASSEMBLY provides cushioned cutting unit transport and smoother operation over uneven surfaces.



CAB WITH ROPS. Completely enclosed vinyl cab turns your Groundsmaster into an all-weather vehicle. Includes ROPS. Heater and light kit available.



V-PLOW. Rugged, 48" V-plow for snow has front skid and reversible/ replaceable scraper blades for low cost snow removal. Requires special mounting kit which includes tire chains.



SNOWTHROWER. Big 48" two stage snowthrower with adjustable side skids and discharge chute. Electric chute rotator comes standard. Driftbreaker auger and oversized second stage clears snow in a hurry and prevents clogging.



HIGH LIFT BLADES. Provides additional lift for improved appearance in wet or heavy grass.



WHEEL WEIGHTS/REAR WEIGHTS/TIRE CHAINS. Toro offers wheel weights and tire chains for better traction when using accessories. Rear weights will help counterbalance front mounted accessories for better operation.



ROTARY BROOM. Tough 48 inch rotary broom sweeps parking areas, paths and walkways, saves hand labor.



SEAT OPTIONS. Choose from high back, adjustable cushion seat or deluxe suspension seat for operator comfort.

PLUS, OUR MOST IMPORTANT ACCESSORY OF ALL. YOUR FULL SERVICE TORO DISTRIBUTOR.

When you need reliable maintenance and repair service, turn to your full service Toro distributor. He has highly trained people ready to serve you fast. A complete inventory of replacement parts. Plus other valuable services, like technical training for your operators. Whatever your needs in professional turf equipment, call your full service Toro distributor.

Groundsmaster Specifications

	GROUNDSMASTER 220 PRIME MOVER (MODEL NO. 30790)
ENGINE	Onan twin opposed cylinder, 4 cycle, air cooled, 20 hp @ 3600 rpm, electric start. 47.7 cu. in. (782 cc) displacement. Gear driven oil pump for full pressure lubrication, remote mounted replaceable oil filter, and remote mounted engine oil cooler. 2 quart (1.9 g) oil capacity. System also incorporates low oil pressure shut-off switch and high cylinder head temperature shut-off switch. Alloy aluminum connecting rods. Pearlitic iron cylinder liners cast into block. Mechanical flyball governor limits speed to 3200 rpm. Vacuum fuel pump. Heavy duty, remote mounted air cleaner. Extra large muffler for reduced noise level. Optional Spark Arrestor Muffler, part no. 46-2390.
ELECTRICAL FEATURES	12 volt, 42 plate, cold cranking 300 amperes at 0°F (-18°C), 50 minute reserve capacity at 80°F (27°C), maintenance free battery. 15 amp alternator with regulator/rectifier. Automotive type electrical system. Seat switch, PTO and traction interlock switches.
WEIGHT	825 lbs. (374 kg) prime mover.
FUEL CAPACITY	6.0 gallons (22.7 ♀) gasoline.
CONTROLS	Foot operated traction and brake pedals. Hand operated throttle, PTO, parking brake, implement lift, and ignition switch. Low oil pressure/high cylinder head temperature by-pass switch.
GAUGES	Hour meter, ammeter.
	GROUNDSMASTER 217-D PRIME MOVER (MODEL NO. 30793)
ENGINE	Mitsubishi, Model KE75-611G, water cooled, diesel engine. 17 hp @ 3000 rpm. 46.6 cu. in. (764 cc) displacement. Heavy duty remote mounted air cleaner. Electric (transistor type) fuel pump, 12 volt, mounted on frame with replaceable fuel filter. High water temperature by-pass switch. Roosa-master water separator. Optional Spark Arrestor Muffler, Part No. 56-2180.
RADIATOR	Rear mounted industrial radiator with tube and fin construction; 7 fins per inch. Approximately 6 quarts (5.7 \$\mathbb{Q}\$) capacity. Stamped bras top and bottom tanks.
ELECTRICAL FEATURES	12 volt, 54 plate, cold cranking 390 amperes at 0°F (-18°C), 70 minute reserve capacity at 80°F (27°C), maintenance free battery. 35 amp alternator with regulator/rectifier. Automotive type electrical system. Seat switch, PTO and traction interlock switches.
WEIGHT	1000 lbs. (454 kg) prime mover.
FUEL CAPACITY	6.0 gallons (22.7 ♣) diesel fuel.
CONTROLS	Foot operated traction and brake pedals. Hand operated throttle, PTO, parking brake, implement lift, glow plug switch and ignition switch.
GAUGES	Hour meter, ammeter, glow plug indicator, low oil pressure light and warning buzzer, and coolant temperature switch-gauge to preven overheating.
S	PECIFICATIONS COMMON TO GROUNDSMASTER 220 AND 217-D
TRACTION DRIVE	Sundstrand hydrostatic U-type Model 90-1239, Series 15 mounted on Dana Model GT20 axle 20.9:1 ratio. Single foot pedal control of forward/reverse ground speed. 25 micron filter mounted directly on transmission housing. Axle is used as reservoir for hydrostatic transmission. Lubrication, SAE 10W-30 Mobil oil, approx. 5 quarts (4.72 g) capacity.
GROUND SPEED/CLEARANCE	0-8.5 mph (0-13.7 km/hr) forward, 0-4 mph (0-6.4 km/hr) reverse. Ground clearance 6 inches (15.2 cm).
TIRES/WHEELS/PRESSURES	Two rear steering tires 15 x 6.00-6, tubeless 4-ply rating. Two front traction drive tires 20 x 8.00-10, tubeless 4-ply rating. Demountable rims. Recommended tire pressure 10-15 psi (69-103 kPa).
MAIN FRAME	All welded formed steel reinforced with square tubing.
BRAKES	Individual 7" x 1-3/4" (17.8 x 4.4 cm) drum type wheel brakes and parking brakes on front traction wheels. Dynamic braking through traction drive.
STEERING	Automotive steering gear assembly. 15" (38 cm) steering wheel.
IMPLEMENT DRIVE	1" (2.5 cm) diameter splined PTO shaft clutched by two "HA" torque team section tight-slack V-belt.
CERTIFICATION	Certified to meet ANSI specifications B71.4-1980 with 62" (157 cm) deck, ANSI B71.1b-1977 for all 52" (132 cm) decks, and applicable Federal and State OSHA regulations based thereon.

	52" FLOATING CUTTING UNIT (MODEL NO. 30555)	62" FLOATING CUTTING UNIT (MODEL NO. 30562)
TYPE	51-3/4" (131 cm) width of cut, three blade, front mounted rotary.	61-5/8" (157 cm) width of cut, three blade, front mounted rotary.
MOWING RATE	Mows up to 2.8 acres/hr (1.1 hectares/hr) at 5.5 mph (8.9 km/hr) depending on conditions.	Mows up to 3.4 acres/hr (1.4 hectares/hr) at 5.5 mph (8.9 km/hr) depending on conditions.
TRIMMING ABILITY	Deck offset 10.25" (26 cm) to the left from centerline; deck offset 10.75" (27 cm) to the left from outside of tire to trin side; 26" (66 cm) uncut circle left. 0" uncut circle with use of individual wheel brakes.	Deck offset 10.25" (26 cm) to the left from centerline; deck offset 16" (41 cm) from outside of wheel to left trim side; 18" (46 cm) uncut circle left; 0" uncut circle with use of individual wheel brakes.
HEIGHT OF CUT	1-4" (2.5-10 cm) adjustable in .5" (13 mm) increments by relocating four pins at each corner of cutting unit.	1-4" (2.5-10 cm) adjustable in .5" (13 mm) increments by relocating four pins at each corner of cutting unit.
CONSTRUCTION	12 gauge steel construction, 5" (13 cm) deep. Wind-Tunnel® housing.	12 gauge steel, 5" (13 cm) deep; welded construction.
CUTTER DRIVE	PTO driven gearbox with 1.26:1 spiral bevel gears. "AA" section belt drive to spindles. 1" (2.5 cm) diameter spindles mounted in two greaseable tapered roller bearings. Anti-scalp cup located on each blade.	PTO driven spiral bevel gearbox. "AA" section belt drive to all spindles. 1" (2.5 cm) greaseable spindles with two tapered roller bearings. Anti-scalp cup located on each blade.
BLADES	Three 18" (46 cm) long, 3/16" (4 cm) thick, heat-treated steel blades.	Three 21.5" (55 cm) long, 2.5" (6 cm) wide, 3/16" (5 mm) thick, heat-treated steel blades.
CARRIER FRAME SUSPENSION	Two 8" (20 cm) phenolic resin front wheels with greaseable roller bearings. Suspended off prime mover at rear. Two front and two rear antiscalp deck rollers. Counterbalanced by spring between cutting unit and prime mover providing better floatation of cutting unit and more traction on prime mover. Adjustable for H.O.C. and ground conditions.	Two 8" (20 cm) phenolic resin front wheels with greaseable roller bearings. Suspended off prime mover at rear. Front and rear anti-scalp rollers. Deck counterbalanced by spring between cutting unit and prime mover providing better floatation of cutting unit and more traction on prime mover.
LIFT	Twin hydraulic cylinders.	Twin hydraulic cylinders.
WEIGHT	200 lbs. (91 kg)	285 lbs. (129 kg)
CERTIFICATION	Certified to meet ANSI B71.1b-1977 Safety Specifications, and applicable Federal and State OSHA regulations based thereon.	Certified to meet ANSI specifications, B71.4-1980, and applicable Federal and State OSHA regulations based thereon.

	52" STANDARD CUTTING UNIT (MODEL NO. 30545)	52" FLOATING REAR DISCHARGE CUTTING UNIT (MODEL NO. 30568)
TYPE	51-3/4" (131 cm) width of cut, three blade, front mounted rotary.	51-3/4" (131 cm) width of cut, three blade, front mounted rotary.
MOWING RATE	Mows up to 2.8 acres/hr (1.1 hectares/hr) at 5.5 mph (8.8 km/hr) depending on conditions.	Mows up to 2.2 acres/hr (.9 hectares/hr) at 4.5 mph (7.2 km/hr) depending on conditions.
RIMMING ABILITY	Deck offset 10.25" (26 cm) to the left from centerline; deck offset 10.75" (27 cm) to the left from outside of tire to trim side; 26" (66 cm) uncut circle left. 0" uncut circle with use of individual wheel brakes.	Deck offset 10.25" (26 cm) to the left from centerline; deck offset 10.75" (27 cm) to the left from outside of tire to trin side; 26" (66 cm) uncut circle left. 0" uncut circle with use of individual wheel brakes.
HEIGHT OF CUT	OF CUT .75"-4" (2-10 cm), adjustable in .25" (6 mm) increments in front and 1" 1-4" (2.5-10 cm) adjustable in .5" (13 mm) increments by relo pins at each corner of cutting unit.	
CONSTRUCTION	12 gauge steel construction, 5" (13 cm) deep, Wind-Tunnel® housing.	12 gauge steel construction, 3" (7.6 cm) deep.
CUTTER DRIVE	PTO driven spiral bevel gearbox. "AA" section belt drive to all spindles75" (2 cm) greaseable spindles with two ball bearings.	PTO driven spiral bevel gearbox. "AA" section belt drive to all spindles. 1" (2.5 cm) greaseable spindles with two tapered roller bearings. Anti-scalp cup located on each blade.
BLADES	Three 18" (46 cm) long, 3/16" (5 mm) thick, heat-treated steel blades.	Three 18" (46 cm) long, 3/16" (5 mm) thick, heat-treated steel blades.
CARRIER FRAME SUSPENSION	Two 8" (20 cm) front wheels. Suspended off the prime mover at rear. Deck counterbalanced by spring between cutting unit and prime mover.	Two 8" (20 cm) phenolic resin front wheels with greaseable roller bearings. Suspended off prime mover at rear. Front and rear deck rollers. Deck counterbalanced by two springs between cutting unit and prime mover. 11 gauge high strength, low alloy channels provide strength and flexibility.
LIFT	Twin hydraulic cylinders.	Twin hydraulic cylinders.
WEIGHT	190 lbs. (86 kg)	200 lbs. (91 kg)
CERTIFICATION	Certified to meet ANSI B71.1b-1977 and applicable Federal and State	Certified to meet ANSI B71.1b-1977 Safety Specifications, and applicable

	IMPLEMENT AND ACCESSORY COMBINATIONS											
	30545 CUTTER	30555 CUTTER	30568 CUTTER	30562 CUTTER	30570 SNOWTHROWER	30750 V-PLOW	ROTARY	CAB W/ROPS	ROPS	30764 CUSHION SEAT	30786 DELUXE SEAT	SPARK ARRESTO MUFFLER
PRIME MOVER MODEL NO. 30790	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.
PRIME MOVER MODEL NO. 30793	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.
GRASS COLLECTING SYSTEM MODEL NO. 30557	_	Opt.	-	-		-	_	-	-	-	-	_
LEAF MULCHER MODEL NO. 30700	Opt.	Opt.	-			-	-	_	-	-	_	_
LEAF MULCHER MODEL NO. 30792			_	Opt.		-	_	-	-	-		_
V-PLOW MOUNTING KIT MODEL NO. 30755	-	-		-	100	Req.	_	-	-	-	-	=
SNOWTHROWER ADAPTER KIT MODEL NO. 30572	-	-	-	_	Req.		-	-	-	-	-	-
TIRE CHAINS PART NO. 28-5470		-	_		Opt.	Incl.	Opt.		-	-	_	-
WHEEL WEIGHTS MODEL NO. 30762	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	_	-	-	_	-
REAR WEIGHT KIT PART NO. 24-5780	Opt.	Opt.	Opt.	Req.	Req.	Opt.	Opt.	-	-	_	_	_
HIGH LIFT BLADE MODEL NO. 44-5480	Opt.	Opt.	Opt.	_	_	-	-	-	-	_	_	_
PNEUMATIC WHEEL & TIRE ASSEMBLY PART NO. 54-8820	Opt.	Opt.	Opt.	Opt.			_	_	-	-	=	
GRASS SHIELD KIT W/GROUNDSMASTER 220 MODEL NO. 30563	-	_	Req.	-	-	_	_			-	_	-

GRASS COLLECTING SYSTEM (MODEL NO. 30557) FOR 52" FLOATING CUTTING UNIT (MODEL NO. 30555)

CONSTRUCTION

Blower assembly housing is 16" (41 cm) diameter; three piece welded construction. The blower assembly attaches to the discharge port of Model No. 30555 cutting unit. Impeller speed is 1650 rpm max. @ 3300 rpm engine speed.

Chute is one piece, made of black, high density polypropylene material used to direct debris into bag.

Hinged hood, mounted to bag support assembly, is made of black high density polypropylene. Air exhausted through riveted metal screen in hood.

Rectangular bag support is welded to frame of steel tubing. Bottom pan is black high density polypropylene riveted to a welded tubular steel frame. The bag support assembly mounts to the right side of traction unit and supports a reuseable polyester grass bag or disposable

Plastic garbage bag.

Bumper of steel tubing is bolted to deck suspension frame to protect blower housing. Includes deck baffling and mounting bracket.

CAPACITY	Polyester bag 20" (51 cm) dia. x 46" (117 cm) high—approximately 7 bushels (247 ½). Optional dry condition polyester bag 24" (61 cm) dia. x 46" (117 cm) high—approx. 10 bushels (352 ½). Part No. 43-0980.
OPTIONAL ACCESSORIES	18" (46 cm) high lift blades for improved wet grass bagging. Part No. 44-5480. Elastic retaining cord allows use of 39 gallon (148 \$\mathbb{Q}\) plastic trash bags, Part No. 36-7770.
DIMENSIONS	(See table opposite).
WEIGHT	123 lbs. (56 kg) — grass collecting system only.
CERTIFICATION	Certified to meet ANSI B71.1b — 1977 and applicable Federal and State OSHA Regulations based thereon.
	V-PLOW (MODEL NO. 30750)
CONSTRUCTION	48" (122 cm) wide heavy gauge steel construction with front skid and reversible/replaceable scraper blades.
WEIGHT	185 lbs. (84 kg)
V-PLOV	V MOUNTING KIT (MODEL NO. 30755)
CONSTRUCTION	Consists of push arm attaching brackets and tire chains. Required for mounting V-Plow.
WEIGHT	50 lbs. (23 kg)
ACCESSORIES	Tire chains included (Part No. 28-5470.)
SNOWTHROW	'ER (MODEL NO. 30570; 30572 ADAPTER KIT)
TYPE	48" (122 cm) two stage with adjustable side skids and discharge chute.
WEIGHT	285 lbs. (129 kg)
ACCESSORIES	Two optional rear weight kits required (Part No. 24-5780)
	LEAF MULCHER

Optional attachment of 12 gauge steel with .5" (13 mm) diameter staggered holes. Mounts under side discharge deck, Model No. 30700 fits cutting unit Model No. 30555. Model No.

30792 fits cutting unit Mo	del No. 30562.				
	CAB WITH ROPS				
CONSTRUCTION	4 post ROPS all steel tubular frame construction with contrasting steel canopy. Includes seat belt, seat retention kit and perforated foam headliner. OPTIONAL Vinyl enclosure kit consists of reinforced heavy duty vinyl fabric with left side heavy gauge wire frame door. Enclosure kit includes tinted safety glass windshield, velcroe fastening kit, latching door handle, and floor mat.				
CERTIFICATION	Certified to meet OSHA standard 1928.51(b)(1).				
ELECTRICAL FEATURES	OPTIONAL Light kit includes front headlight, rear work light, and roof-mounted flashing amber beacon. OPTIONAL Single speed windshield wiper and defroster fan for cab installation.				
WEIGHT	4 post ROPS with canopy — 110 lbs. (50 kg); enclosure kit — 60 lbs. (27 kg).				

PNEUMATIC WHEEL & TIRE ASSEMBLY PART NO. 54-8820 (two required)

WHEEL/ Demountable two piece rim with open cage roller bearing and **HUB ASSEMBLY**

4-ply, $8.62\times2.80/2.50$ sawtooth tread tire with tube. 10-15 psi $(69-103\,\mathrm{kPa})$ recommended pressure. Two wheel/tire assemblies required per deck.

OVERALL SETUP DIMENSIONS AND WEIGHTS (APPROX.)

	LENGTH	WIDTH	HEIGHT	WEIGHT
TRACTION UNIT	79"	42"	50"	825 lbs.
#30790	(201 cm)	(107 cm)	(127 cm)	(374 kg)
W/52" CUTTING UNIT	99"	65"	50"	1,000 lbs.
#30545	(251 cm)	(165 cm)	(127 cm)	(454 kg)
W/52" CUTTING UNIT	101.5"	65"	50"	1,030 lbs.
#30555	(258 cm)	(165 cm)	(127 cm)	(467 kg)
W/52" CUTTING UNIT	101.5"	53.5"	50"	1,030 lbs.
#30568	(258 cm)	(136 cm)	(127 cm)	(467 kg)
W/62" CUTTING UNIT	106"	74"	50"	1,145 lbs.
#30562	(269 cm)	(188 cm)	(127 cm)	(519 kg)
W/GRASS	101.5"	68"	57"	1,160 lbs.
COLLECTING SYSTEM	(258 cm)	(173 cm)	(145 cm)	(526 kg)
W/SNOWTHROWER	106"	51"	50"	1,110 lbs.
	(269 cm)	(130 cm)	(127_cm)	(503 kg)
W/V-PLOW	103"	48"	50"	1,185 lbs.
	(262 cm)	(122 cm)	(127 cm)	(538 kg)
TRACTION UNIT #30793	79"	42"	50"	1,000 lbs.
	(201 cm)	(107 cm)	(127 cm)	(454 kg)
W/52" CUTTING UNIT	95"	65"	50"	960 lbs.
#30545	(241 cm)	(165 cm)	(127 cm)	(435 kg)
W/52" CUTTING UNIT	101.5"	65"	50"	1,200 lbs.
#30555	(258 cm)	(165 cm)	(127 cm)	(544 kg)
W/52" CUTTING UNIT	101.5"	53.5"	50"	1,200 lbs.
#30568	(258 cm)	(136 cm)	(127 cm)	(544 kg)
W/62" CUTTING UNIT #30562	106"	74"	50"	1,285 lbs.
	(269 cm)	(188 cm)	(127 cm)	(583 kg)
W/GRASS	101.5"	68"	57"	1,228 lbs.
COLLECTING SYSTEM	(258 cm)	(173 cm)	(145 cm)	(557 kg)
W/SNOWTHROWER	106"	51"	50"	1,285 lbs.
	(269 cm)	(130 cm)	(127 cm)	(583 kg)
W/V-PLOW	103"	48"	50"	1,185 lbs.
	(262 cm)	(122 cm)	(127 cm)	(538 kg)

DESCRIPTION	MODEL/ PART NO.	DESCRIPTION	MODEL/ PART NO.
CUSHION SEAT KIT	30764	TIRE CHAINS	//dee Williams
DELUXE SUSPENSION		20 lbs. (9 kg)	28-5470
SEAT KIT	30786	WHEEL WEIGHTS	
SPARK ARRESTOR MUFFLER MODEL NO. 30790	46-2390	(2) 25 lbs. = 50 lbs. (2) (11 kg) = (23 kg)	30762
MODEL NO. 30793	56-2180	REAR WEIGHT KIT	
HIGH LIFT BLADE (ONE BLADE)	44-5480	(2) 35 lbs. = 70 lbs. (2) (16 kg) = (32 kg)	24-5780

*Specifications and design subject to change without notice.

COMMERCIAL PRODUCTS



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New Preemergence Herbicides For Turf

By Tim R. Murphy Extension Agronomy Department Griffin, GA

Several herbicides have recently been granted registration and will be marketed in 1986 for the preemergence control of annual weedy grasses in established turfgrasses. The herbicides and manufacturers are:

XL 2G - Elanco Products Company

Surflan 75W and 4AS - Elanco Products Company

Prowl 60DG - American Cyanamid

Pre-M 60DG - Lesco

Southern Weedgrass Control 2.45G - Scotts

Turf Weedgrass Control 1.7G - Scotts

Weedgrass Control 60WDG - Scotts

Recommended application rates for these herbicides are shown in Table 1. These herbicides do not control emerged weedy grasses, and applications should be made at least two weeks prior to annual weedy grass seed germination.

XL 2G is a selective preemergence herbicide that controls large crabgrass, goosegrass, and other annual grasses in established bahiagrass, bermudagrass, centipedegrass, St. Augustinegrass, and zoysiagrass. This herbicide is a 2% granular formation and is a prepackaged mixture of benefin (1%) plus oryzalin (1%). Benefin is the active chemical ingredient in Balan 2.5G, which has been used for a number of years for annual grass control in established turf. Oryzalin is the active chemical ingredient in Surflan 75W and 4AS. Surflan is now labeled for the control of annual grases in established bermudagrass (excluding green), bahiagrass, centipedegrass, tall fescue, St. Augustinegrass, and zoysiagrass.

XL, Surflan, and the various formulations of pendimethalin are currently being evaluated at the Georgia Experiment Station (B. J. Johnson, personal communication). Only one year results are available; however, XL. Surflan, and pendimethalin provided excellent control of large crabgrass with a single application in late Febraury at recommended rates. Control of goosegrass was fair to good for XL and the various formulations of pendimethalin. A single application of Surflan was not as effective as XL or the pendimethalin formulations in controlling goosegrass. Continued evaluation with these herbicides will be conducted in 1986 at the Georgia Experiment Station.

Table 1. Recommended application rates for selected preemergence herbicides.

Herbicides	Formulation	Amount of formulated product/acre
XL	2G	100 to 150 lbs.
Surflan	75W	26.7 lbs.
Surflan	4AS	2.0 qts.
Prowl DG	60DG	4.5 lbs.
Pre-M	60DG	4.5 lbs.
Weedgrass Control	60WDG	5.0 lbs.
Southern Weedgrass Control	2.45G	113 lbs.
Turf Weedgrass Control	1.71G	88.5 lbs.

Nine Ways To Negotiate A Raise

Many people who have no trouble dealing with their superiors in most day-to-day situations find it very difficult to ask for a raise. If your fainthearted at negotiation time, consider these reccomendations to ease the process:

- Know your worth. Ask yourself how valuable you are to the course, how much would it cost to replace you, what have you done lately to help the organization.
- Pick your place. Get your boss outside of the office to listen to your request. Take him to lunch if possible.
- Detail your reasons. Tell your boss why you deserve a raise.
- Suggest an amount. You, not your boss, should propose the amount of your possible raise.
- Set your figures high. Ask for more than you expect to get. This leaves room for bargain.
- Compromise—but not to easily. Since you've started with a high figure, realize you probably won't get it. Let your boss make a counter-offer, and be ready to compromise.
- Rehearse. Don't go into negotiation cold. Be sure to be in top mental and physical condition when the actual talks begin.
- Get it in writing. If possible, get your boss to put it in writing—for both signatures—the raise he agrees to.
- Don't wait—ask. Don't wait around for the company to recognize your value and give you a raise. Ask for it. Your aggressiveness may pay off.

LANDSCAPERS EXPO 1986 Seminar And Trade Show

By Jeanne Minnock

There will be a unique Landscaping Trade Show and Seminar that wll be held in the Manatee Civic Center August 22-24, 1986.

Exhibits will comprise of Nursery stock, Plants, Trees, Fertilizers, Chemicals, Garden Supplies, Ornamental Products, Lawn Equipment, Skid Steer Loaders, Growers Supplies, Patio Stones, Potting soils, Top soils, Irrigation systems and other allied products too numerous to mention.

We are planning on conducting Workshop Sessions starting at 9:00 AM on Friday and Saturday, August 22 and 23rd. These sessions will be conducted by experts in the Landscaping field.

Manatee Civic Center is just north of Bradenton, actually on the border line on US 41/301 in Palmetto just a few miles south of Tampa. It is a new facility and has ample free parking areas; it's so clean and neat you will enjoy the total environment.

The Hours that the exhibits will be open are Friday and Saturday from 9:00 AM until 6:00 PM, Sunday 9:00 AM until 3:00 PM. There will be Free admission to the show, but registrations are required and badges must be worn by all attendees.

It is advisable to preregister for the Workshop Sessions, to enable us to plan for an appropriate size room. Free Coffee will be served at the sessions. More information is available from Merchandise World, Inc., P.O. Box 1374, Venice, FL. 34284- Telephone 813-485-5888. Just send in your name and mailing address to preregister. Plan to be present at 9:00 AM sharp.

Host hotel is Holiday Inn Riverfront, 100 Riverfront Drive, Bradenton, FL. 33505 (813) 747-3727. Special reduced rates are available until August 1, 1986. Be sure to mention Landscapers Expo 1986 for reduced rates. ■

1986 Poa Annua Classic

by Bob Shelvin

In 1986 Poa Annua Classic was held at the Naples Beach Hotel and Golf Club in Naples, FL, on May 18 & 19. As in the past the event was a big success.

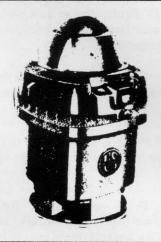
Our appreciation goes out to all who attended along with our desire to see them all again next year for an even bigger and better time.

Sunday night, May 18th was our fantastic luau set up on the grounds, along with the nights entertainment, Cary Lewis did his own version of "Along Came Sam" - start planning for next year Cary!

A crystal engraved paper weight was presented to Tom Burrows, President of The Florida Golf Course Superintendents Association, by David Moote, President of The Everglades Chapter of the GCSA. Also presented were crystal engraved plates to Dick Naccarato, Superintendent; Jim Duffy, Pro and Henry Watkins, Owner; all of The Naples Beach Club and Hotel, in appreciation for hosting the 1986 Poa Annua.

The golf tournament was held on Monday, May 19th. The winner, in with a 70 for low gross was Gary Smithers; low net division, Rick Kaiser. The Poa Annua Trophy went to The Everglades Chapter this year with thanks to Mark Tallmage, Rick Kaiser, Buddy Carmouche and Dan Hall Jr., with an over all score of 274. In the Calloway Division for suppliers and guests the winners were Dick Bessire, low gross and Butch Gill, low net.

Preceding the presentation of various forms of engraved crystal to all of the winners, was a golf clinic given by Patty Berg. As usual she captivated her audience with her informative, fun-filled exhibition. We would like to thank Patty Berg for her participation in our event. We would also like to thank the Sponsors for their donations and participation. Most of all we would like to thank Henry Watkins - Owner; Dick Naccarato - Superintendent and Jim Duffy - Pro, all of the Naples Beach Club & Hotel for being wonderful hosts. See you next year!!



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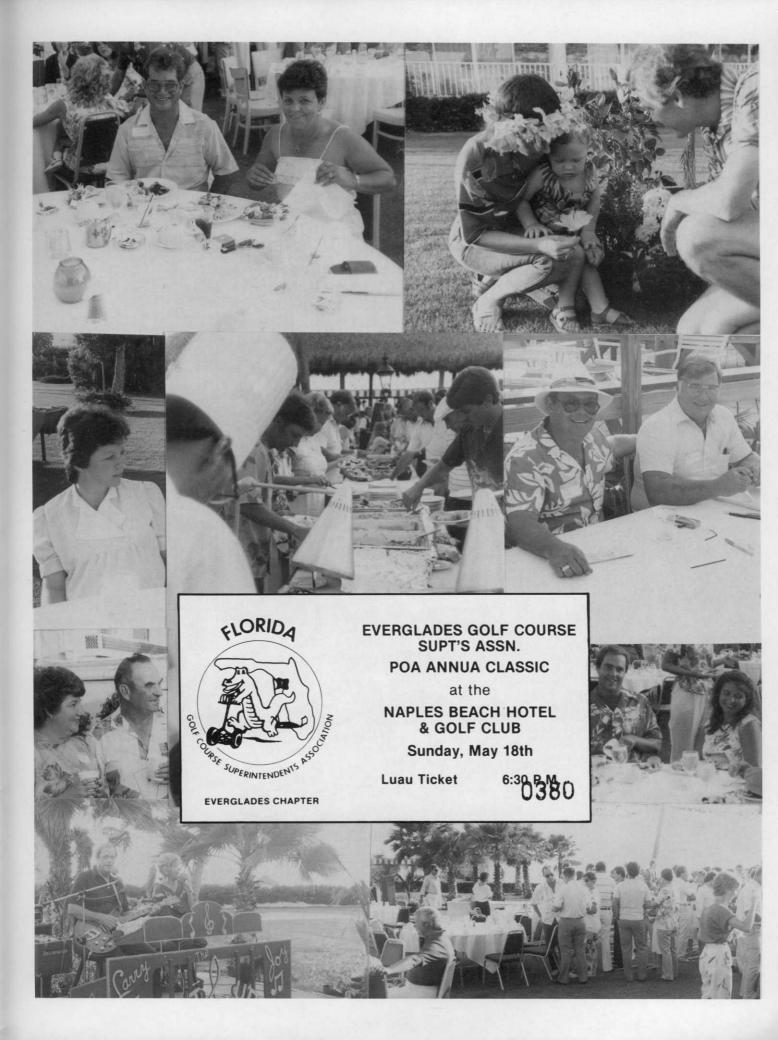
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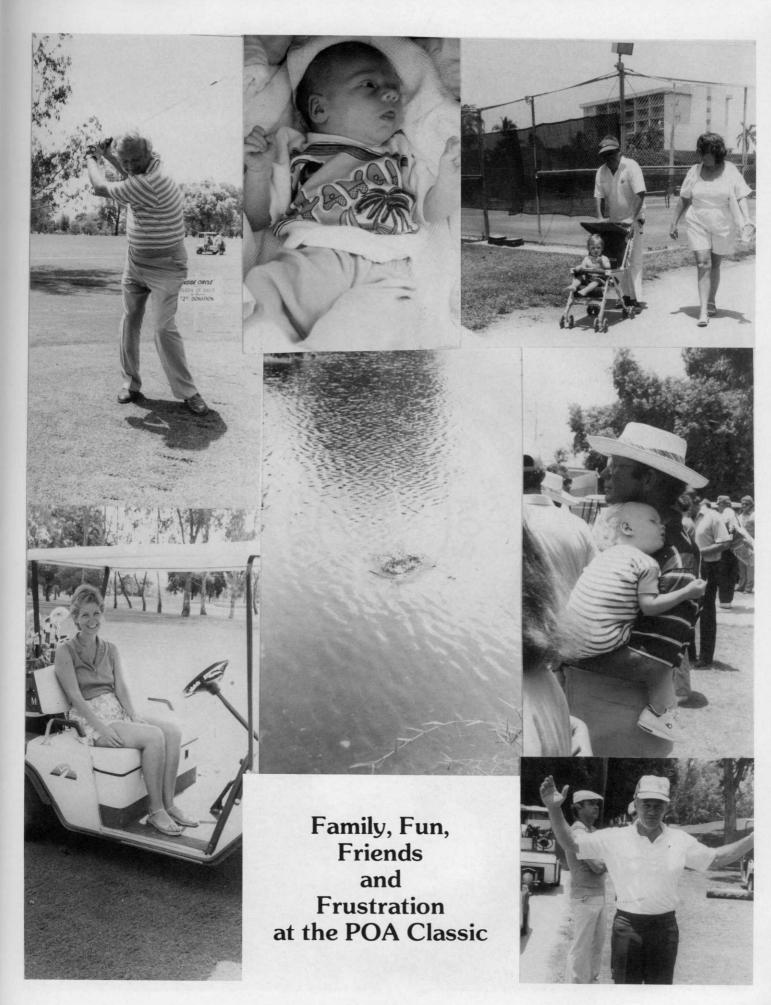


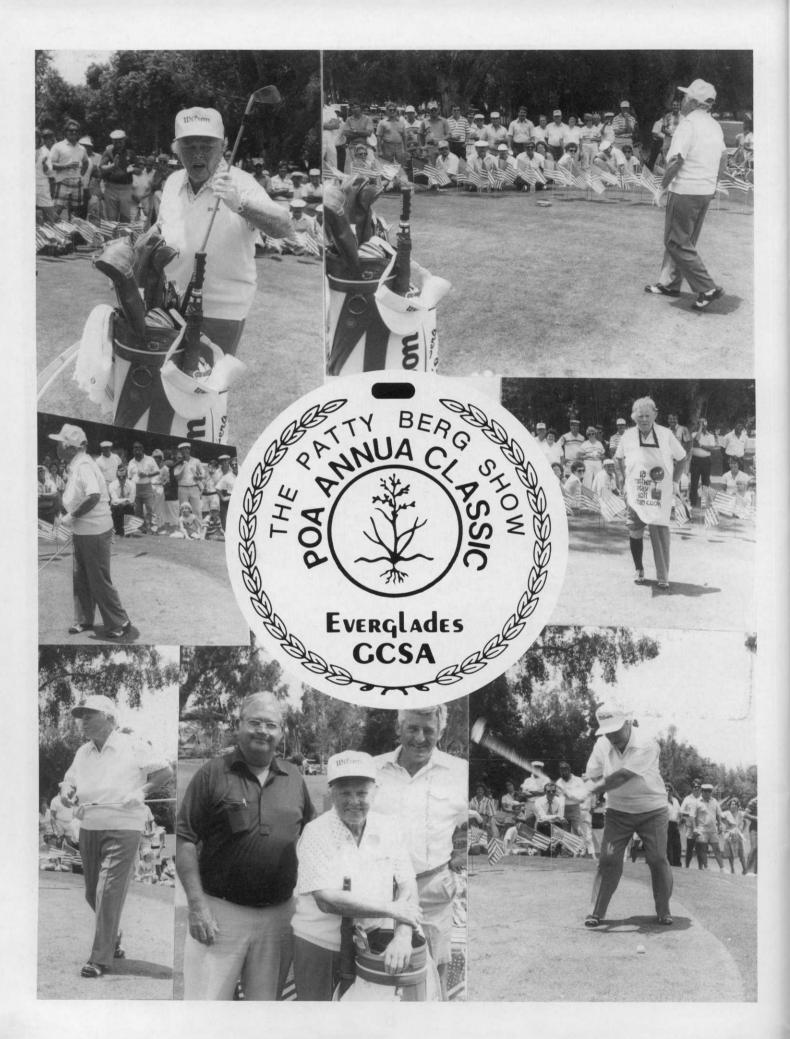


Trees can be used for many things!

For sitting on, for hiding behind, for playing under or around, or for just admiring their beauty on the Naples Beach Golf Course.







Tips From A Speechwriter

By Art Brown

MAKING THE MOST OF YOUR TIME IN FRONT OF AN AUDIENCE

For many years, I earned my living in Washington mostly as a speechwriter.

I must have been born timid, for it never appealed to me to stand up before a crowd and make a speech. But it always seemed easy and natural for me to provide ammunition for anyone I happened to know who wanted to make a speech to get elected to office or something.

After I got to writing speeches professionally, I read and studied great speeches-speeches that have lived-speeches, for example, by Abraham Lincoln, Patrick Henry, Daniel Webster, and Winston Churchill.

In time, I learned something about the feel of an effective speech.

And by working with experienced speakers, by talking with them, by learning from them what makes a speech go across, and by watching them in action, I learned something about how to deliver a speech.

Those are my qualifications for offering you a few tips on "How to Make the Most of Your Time Before an Audience".

ONLY ONE WAY TO JUDGE A SPEECH

You would like to produce a speech that will get a standing ovation from the audience, that will make headlines in the press, that will be printed in Vital Speeches, and that can be put out in booklet form. If it wins a Freedoms Foundation award, so much the better.

But, when you come right down to it, there is only one way for you to judge whether a speech you make is a good speech: It's a good speech when it accomplishes its purpose.

Just what is its purpoe? Why are you giving the speech?

What message do you want to present to your listeners? What do you want them to do about it?

What resistances are you going to be up against? How can you overcome those resistances?

What questions are you likely to be asked? How can you answer those questions briefly and convincingly?

The next thing for you to do is to learn as much as you possibly can about your audience, their organization, their interests, their problems, their needs.

When you address them you want to feel right at home with them; you want to see things from their point of view.

LOOK FOR GRIST FOR YOUR SPEECH

Now, the thing you have to do is to be on the continual lookout for grist for your speech. You not only need pertinent facts and figures, but you also need items that you can use to brighten up your talk, to support the points you make, and to give your speech added interest and a change of pace from time to time: illustrations, anecdotes, jokes, humorous lines, and suitable quotations.

When I was a student at the Medill School of Journalism at Northwestern University, an editorial writer on The Chicago Tribune, who was lecturing in class one day, told the students how he was always looking for items for possible use in his editorials. He told us his method for keeping those items together in one place where he could put his hand on a particular one when he needed it.

Instead of filing the items by subject, he kept them in a folder, with the most recent item on top. Whenever he added a new one, he took a moment to leaf through those

(continued on page 46)

WE HELP SOLVE PROBLEMS

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that were already there-and that refreshed his memory, so that he was able to find a particular item in a hurry when he wanted it.

That's a simple little technique which I have found to be practical, and I pass it on to you.

THINK HARD, DEEP, AND LONG

The really important thing, however, in preparing a speech is to think the subject through hard enough, deep enough, and long enough to make the whole thing jell in your mind and hold together.

Herbert Corey, who had been an overseas correspondent and who, when I knew him, was back in Washington writing magazine articles and working on a book told me that his secret of writing something was to gather the material on the subject, and then to put it in his mind and "cook it".

"Unless you've got a deadline to meet," he said, "don't start writing anything until it's ready to write itself".

Peter Cooper, the inventor, had somewhat the same idea. Among other things, he improved the process of steelmaking, built one of the earliest locomotives in this country, played an important part in the laying of the Atlantic cable, and founded The Cooper Union in New York City.

'EVENTUALLY THE ANSWER COMES'

Peter Cooper's working slogan was, "Eventually the answer comes."

I have that line typed out and pasted on the front of the typewriter.

It's comforting to know that when you are writing a speech or anything else, and when you use your head and think about the job at hand hard enough and long enough. "Eventually the answer comes."

Montaigne knew the truth of that. In his Essays, he says:

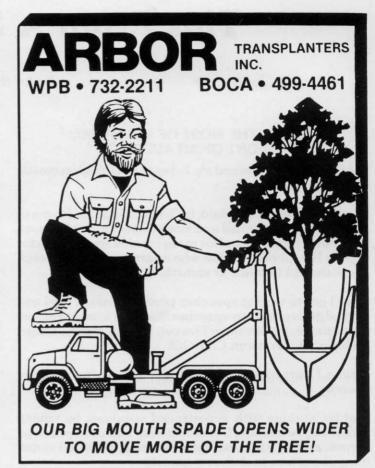
"I hear some making excuses for being unable to express themselves, and pretending to have their heads full of many fine things but, for want of eloquence, being unable to produce them; that is a sham....For my part, I hold, and Socrates makes it a rule, that whoever has in his mind a vivid and clear idea will express it. "The matter seen, the words freely follow."

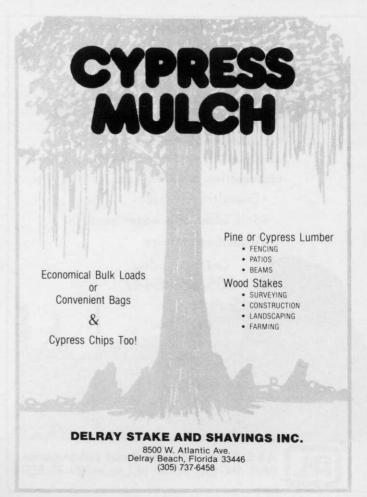
HOW TO PREPARE A GOOD SPEECH

These, then, are tips on how to prepare a good speech:

- 1. Know exactly what you want your speech to accomplish.
- 2. Learn as much as you can about your audience, so that you will be able to see things from the viewpoint of your listeners.
- 3. Know the questions your listeners are likely to ask, and know how to answer these questions convincingly.

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(continued from page 46)

- 4. Be continually on the lookout for grist for your speech.
- 5. Think the subject through hard, deep, and long, so that it organizes itself and holds together-a most important step.

TAKE PLENTY OF TIME TO REHEARSE

Now, after you have written your speech, and after you have edited it and polished it, take plenty of time to rehearse it.

Tape record your speech and play it back to yourself. Listen to how you emphasize certain words-verbs and nouns in particular-or how you fail to emphasize certain words that you should.

If there are any stumbling blocks for you in your speech, get rid of them.

Rehearse your speech until you almost know it by heart.

LOOK AT YOURSELF IN A MIRROR

Winston Churchill worked for 40 years to master the art of writing a speech — and to learn how to write a sentence that would have each phrase in its proper place so that the sentence would move directly ahead and not backtrack, and so that the sentence would say what it was meant to say and have the proper cadence and flavor.

Here is an example of a Churchill sentence-from his Dunkirk speech:

"Behind this armored and mechanized onslaught came a number of German divisions in lorries, and behind them again, there plodded — comparatively slowly — the dull brute mass of the ordinary German Army and German people, always so ready to be led to trampling down in other lands of liberties and comforts which they have never known in their own."

But Churchill did not depend entirely on his ability as a thinker and a writer. He depended also on his ability to speak before an audience. And throughout his whole career, he would never deliver a speech without first rehearsing it befor a mirror. He wanted to see himself in action

WHAT THOSE WHO SUCCEED SUGGEST

Here are some suggestions from successful speakers. You doubtless know all of these things already, but it doesn't do any harm to be reminded of them.

- 1. When you deliver a speech, be relaxed; the world is not coming to an end. Be yourself.
- 2. Strive for audience contact. That's what you're there for. Look right at individuals in the audience as you talk to them. Watch for their reaction.
- 3. Don't read your speech in a humdrum fashion. That's the worst thing in the world to do; it kills the speech. You are thouroughly familiar with the script. Use it only as a guide. Ad lib when you feel like it.
- 4. In your opening remarks, it's a good idea to start off by talking about yourself. Put your listeners in the picture right away by talking about them.

Instead of saying, "It's a great pleasure for me to be here on this occasion...", say something like this: "You people who are in this room here today perhaps know more about the subject that we will be discussing than any other group in America." Or, say whatever is appropriate and true, so long as you are talking about them and not about yourself.

5. As you go along, however, address your listeners as "we," rather than as "you." The reason for doing so is to avoid sounding preachy, to avoid giving them the impression that you are trying to tell them what they should or should not do.

You are not trying to force your ideas on them. You are simply letting them know that, after weighing all the facts in the case, you have come to certain conclusions about the situation — conclusions which you believe to be sound. Your job is to win your listeners over to your way of thinking-or to give them information that will be helpful to them in their thinking.

It is more effective for you to say, "It seems to me," or, "As I see it," than it is to give your listeners the impression that you think you know all the answers.

(continued on page 48)



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(continued from page 47)

6. A good way to launch the question-and-answer session is to say something like this:

"What one single question do you have in mind that you would like to have answered here today-what one question, if you could get the answer, would make you glad you came to this meeting?"

7. If you don't know the answer to a question, just say, "I don't know- but if you will see me after this meeting, I will get your address and then, after I get back home, I will try to get the answer for you and send it to you."

LET THEM KNOW YOU ARE GLAD

More than one successful speaker has told me that the best way to give a speech is to be fully prepared, and then when you are before the audience, to let them know by your whole manner and your whole being that it gives you a lift to be there.

When they know that you are really glad to be there, they are really glad to be there.

They listen with interest to what you have to say.

They get something out of it.

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They are influenced by it.

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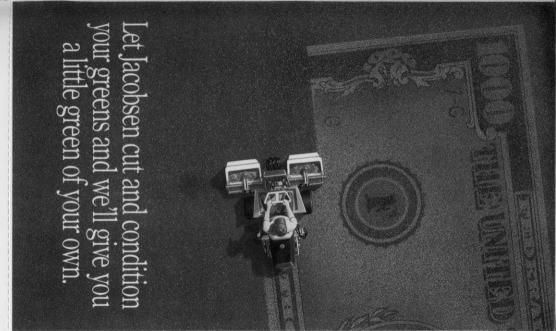
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Sulfur Use On Greens

By Dr. Norm Hummel, Cornell University

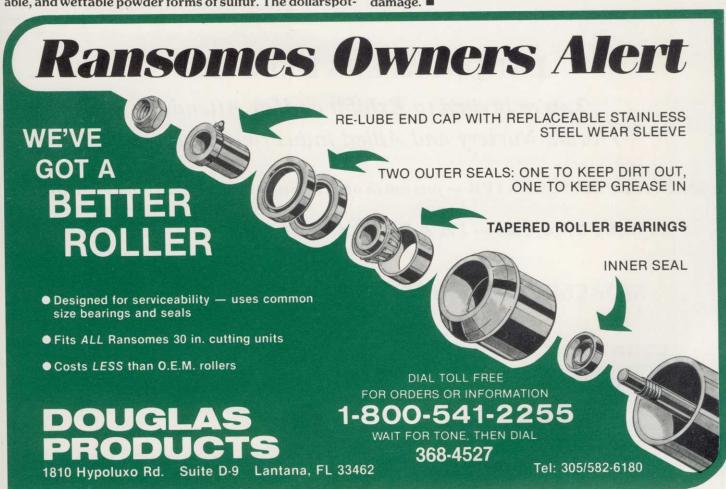
Soil reaction, or pH, is an important consideration in managing fine turfgrass areas. The pH is a measure of the hydrogen ion concentration in the soil solution. While most turfgrass species tolerate a wide range of soil pHs, optimum growing conditions exist in a pH range of 6.0 to 7.0. At excessively low pHs, the solubility of aluminum and manganese increase to a point where these elements can reach toxic levels in the soil. Excessive alkalinity, or very high pH, can result in deficiencies of several micronutrients.

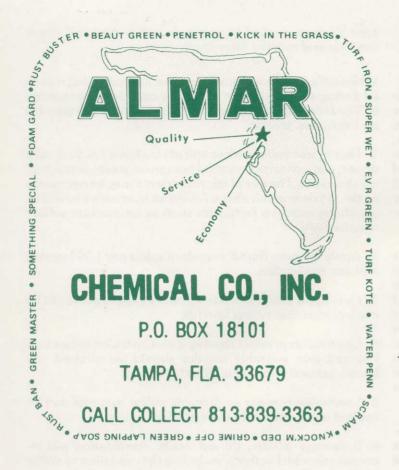
Throughout much of New York State, calcareous sands are used to topdress golf course greens. Managing the pH on greens topdressed with these sands has been a major concern of superintendents. Applications of elemental sulfur are frequently used on an annual or biannual basis to reduce the pH of greens to an optimum range. Sulfur is an effective acidifying amendment thanks to the action of Thiobacillus bacteria that live in the soil. The bacteria obtain their energy from sulfur by oxidizing it into the sulfate form. A by-product of this oxidation process are hydrogen ions that reduce soil pH.

Recently, isolated reports of damage from sulfur applications have surfaced. The symptoms have varied from what looks like an incurable infestion of dollarspot to a general discoloration. Damage has resulted from granular, flowable, and wettable powder forms of sulfur. The dollarspottype damage caused by granualr sulfur may not occur until several months after application.

While sulfur still remains a recommended acidifying material perhaps some caution should be exercised when using it. The following are suggested guidelines for using sulfur on bentgrass greens:

- 1. Do not use sulfur unless soil pH is above 7.5. Believe it or not, you can grow beautiful bentgrass greens on slightly alkaline soils. The use of micronutrients may be necessary as the pH rises much above 7.0. As an alternative to sulfur, acidifying nitrogen fertilizers such as ammonium sulfate may be used.
- 2. Apply no more than 2 pounds of sulfur per 1,000 square feet are application.
- 3. Only apply sulfur when temeratures are expected to be cool, preferrably spring and fall.
- 4. Use a sulfur product the way it was intended to be used. For example, wettable powder should be sprayed, not broadcast and watered in. *Read the label*.
- 5 A wettable powder or flowable sulfur material can be applied more uniformly than granular sulfur.
- 6. If damage occurs, do not aerify. Aerification will increase microbial activity, including the oxidation of sulfur by *Thiobacillus* bacteria. Aerification may actually increase damage.





pH and Pesticides

Many, if not most, currently used pesticides are rapidly decomposed, broken down or inactivated by alkaline conditions (high pH). Numerous pesticide labels bear warnings against mixture with alkaline materials such as lime. Alkaline can also accelerate the decomposition of many pesticides. The rapidity of the pesticide decomposition depends on the nature of the pesticide and the degree of alkalinity. Additionally, alkalinity is of little or no significance in the absence of water.

Certain pH adjusters can be used to reduce the alkalinity of spray water and they are frequently used to advantage. However, the problem can often be solved by applying a spray immediately after mixing and during conditions that favor rapid drying of the spray deposit. Incidentally, this is usually the best practice even in the absence of pH problems.

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"Weeping May Endure For A Night"

by Virgil Robinson Superintendent, Burning Tree Club

The rest of the quote for the title of this article is "but joy cometh in the morning." As many of you know, this is a direct quote from Psalms 30:5. I would like to apply this quotation to a subject that is close to my heart and very common to our profession, a subject that most superintendents never broach, that causes many sleepless nights and many bleeding ulcers. That subject: personal trials or afflictions or failures.

As bona fide members of the human race, as golf course superintendents, we are quite willing to talk about our personal triumphs, our accomplishments, our successes. But, what about the real building blocks (a seemingly paradoxical statement) of our character, of our personhoodour failures.

Because of an experience in 1977, a "failure" if you will, and to other personal trials that are even now upon me, I believe I qualify as a specialist, an authority on the subject of failure. I make that statement out of thankfulness and humility, not regret or boastfulness. By relating that experience and what I obliquely learned, I hope to show that probably more is gained through our failures than our successes. In looking back eight years removed from that "failure" I consider it one of the most valuable experiences of my life; at the time, I was asking, not demanding, why me, Lord?

1977, of course, was my first year at Burning Tree; I had reached a personal goal of mine, a tournament course or very fine private club, fully seven years before I could even dream of such a possibility. At a beautiful club, steeped in tradition, I was going to provide the first conditioned golf course on th East coast. After three successful years at Andrews AFB that seemed to be a reasonable goal at the time.

By August of that year the golf course-tee, greens and fairways--looked as if someone had done a poor job of spraying Round-up herbicide; the only thing consistently green were the leaves on the trees and they turned brown early that year. What happened? I still do not know. When things started going down in May or June, I certainly overreacted with certain management practices but not to the extent that the course was suffering.

If the turf was suffering, I was more so. My personal pride was being ripped out by the roots. For the first time in my life I realized I did not have control over my job situation or my personal destiny. That realization is both sobering and humbling. At the time and during those four months, I slept a maximum of two hours per night-the other 4-6hours were spent endlessly tossing and turning and worrying; I did not share any of what I was going through with anyone, not even Karen. By the end of the season I was a basket case, even though I managed to put on a good front. Within myself, I got consolation from the fact that I probably would never take my own life since I hadn't already.

For those of you who may go through a similar experience, for those of you who may be having problems, trials or afflictions not necessarily of your own making with green chairmen, committee chairmen, or members in general, for those of you who may be having personal problems, what did I learn from '77 that might possibly encourage you?

First of all, make certain your priorities are in line. What is most important to you? If you do not know what is most important, look to see where your time is spent; that is a pretty good barometer of your priorities. Do you pass up vacations with the family because the course would founder without you? Do you work seven days a week even though your wife would like you to visit relatives or go to church with her? Do you not participate in your children's activities because you have to work till 6 in the evening or on Saturday morning?

For me, I learned my prioities were totally out of kilter. Because of my total personhood, who I was as an individual was tied up in my job at that time. Because my course was going under, I was going under also, as an individual. Out of 1977 came a realignment of my priorities. For me, faith in my Creator and trusting in him became numero uno, my family second, and job, third; everything else fell below each of these. This does not mean that my job is unimportant to me, that I do not give 100% that I do not care; it does mean that it is in perspective to other areas of my life that I consider important. I believe that because of this I am even more valuable to my employer now.

Secondly, if you are having difficulties, open up to others and share your problems with them. As you do, it is amazing, absoulutely amazing, how many other people have had or are having similar problems. The more you open up and expose you inner being, your thoughts, your feeligs, your hopes, your dreams, your prayers to others, they in turn feel the freedom to open up to you. That ten ton weight of "bricks" or "baggage" suddenly becomes five tons when shared with another. That problem does not necessarily go away but it does become manageable; it is brought into prospective.

In the "summer of '77" I did not do this. I kept everything within. My pride would not allow me to share my problems; I was internally exploding. Death, truly, would have been a welcome relief.

Third and lastly, I feel that the "failure" eight years ago started me on the way to becoming a "people person". Not that I have arrived in this area of my life, far from it, but I'm on the road. It behooves each of us to take the time to listen, truly listen, to what another is saying. He may be asking or crying out for our help and yet we are not really hearing his need; he may need a kind word of encouragement, a helping hand, a thank you or a please. Are we really listening?

In summing up, I would say that personal trials, afflictions and failures throughout life are going to come our way. How we choose to handle them, what we learn from them goes a long way toward our own personal happiness, contentment, and well-being. "Weeping may endure for a night, but joy cometh in the morning".

Aerial Photography Aids Maintenance

by Patrick A. Lucas Jr. Innis Arden GC

Communication is of paramount importance to the golf course manager. The ability to communicate plans and programs to both superiors and staff many times present a challenge.

The ever-expanding world of visual aids via the use of aerial photography is a concept every Superintendent should be familiar with today. Communicating daily work plans for property covering several hundred acres to a dozen or more individuals will test the best golf course managers. Many superintendents are aware of horror stories when daily work orders were misunderstood by crew members: areas to be watered were not; areas not to be sprayed were; and in some extreme cases, wrong trees removed! Volumes could be written on this subject, some humorous; some not.

The communication challenge centers around taking ideas first conceived in our mind and which must then chronologically follow several steps to reach a point where they are finally translated into the finished product in the field. When I came to Innis Arden in 1977, we had an aerial photo of the course which, at that time, was three years old. I promptly placed it in a prominent location in the crew's quarters and began to use it in conjunction with the daily work orders. This helped in the orientation of staff members to the exact area in which they were to perform a particular task.

1983 brought many changes to Innis Arden due to the major renovation work completed under the direction of Jeff Cornish and Brian Silva. We realized that our existing aerial photo had heard of some courses outlining their irrigation system on the ground before having a new aerial photo flown. The idea sounded like a good one, and I began making plans to paint all sprinkler heads and outline all greens and fairways before having the new aerial photo taken.

Making the arrangements for a flyover under the proper conditions is easier said than done. In some ways, it is not unlike the space shots from Cape Canaveral which require a certain "launch window" or limited time frame in which the launch can proceed.

The flyover should take place at a time when the following conditions have been met:



- 1. The course is clean of fallen leaves and other debris.
- 2. There is no snow or ice cover.
- 3. Trees are in their dormant stage without leaves or buds which would impair visibility.
- 4. There are minimum shadows. Ideally, flyover should take place at high noon.
- 5. Clear weather conditions exist.
- There has been adequate lead time for proper painting of the course.

In mid-March of 1985, all plans were set in motion and Keystone Aerial Photo of Philadelphia photographed the course at a cost of \$550. The new aerial photo came out perfectly thanks to the careful preparation ground work done by Dave Kerr, then Assistant Superintendent and

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Mark Angerosa, our current Assistant. The scale used was one inch to eighty feet. All sprinkler heads were painted with six foot by six foot "x's" and all perimeters of greens and fairways were outlined with broken white lines prior to the flyover. Our local power company located the underground electric lines leading to our pump house and maintenance shop and these too, were painted.

In addition to the instantly improved orientation of crew members for daily work assignments, it was obvious that additional visual aids could be made and utilized in conjunction with the photo. The idea of designing different "overlays," incorporating various maintenance programs, proved to be invaluable. The photo was framed with wood raised somewhat higher than the actual cover glass itself. A dozen pieces of clear plexiglass were then purchased, each designed to fit precisely within the frame and over the photo. To date, the following "overlays" have been desiged and are in use at our Club:

Overlay for Tree Inventory and Maintenance Record

All major trees on the course are indentified on this overlay and its corresponding inventory record with a number and letter combination. The number identifies the hole on which the tree is located and the letter identifies the tree species. For example, the inventory record explains that tree "1A" on the overlay is White Oak on hole number one. It also records a complete history of all maintenance work and related costs relative to that tree. Overlay for Wilt Areas

All areas susceptible to wilt are colored red on this overlay. This helps in the training of new irrigation personnel.

Overlay for Crabgrass and Goosegrass Areas

Areas that have been problems in the past are highlighted on this overlay which helps in targeting next year's preemergence herbicide program.

Overlay for Wet and Soft Areas

Because an overly wet springtime at our sea level course can prove disastrous for maintenance equipment getting stuck, in a Wet/Soft Area overlay helps new staff members avoid problem areas of this kind.

Overlay for Weed Whip Work

All weed whip areas are on their own overlay allowing summer help to quickly identify areas to be cut prior to going out to their field assignments.

These are but a few programs which we have "maintenance mapped" through the use of overlays so far. I am sure there are many other programs which would be appropriate for "maintenance mapping" and I would appreciate hearing about any new ideas you may have.



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Computers - A Must!

Jim McLoughlin, Met GCSA Executive Director Guest Columnist

Few subjects today occupy the attention more of Golf Course Superintendents than that of computers and how they might fit into the world of golf course management. Speculation and rumor both encourage and confuse the most interested. Systems that have been recently marketed generally do not address the comprehensive needs of the golf course maintenance industry - and often lack quality control support.

The good news is that the help and answers everyone is looking for are not very far away. We can realistically expect solid products to surface within the market place in 1986. To be in a position to take full advantage of this coming opportunity, the Golf Course Superintendent should begin his preparations now.

The first realization that must be dealt with is that any number of hardware systems will get the job done. The key to the successful use of computer systems within the field of golf course maintenance is the quality of software programs developed specifically for this purpose.

The very real challenge of selecting one hardware system from many has been somewhat simplified within the golf industry of late. Many software writers and vendors are designating IBM hardware. For example: the USGA with its national handicap system; and Toro, Royal Coach and Rain Bird in the golf course irrigation area. Meaningful software now being considered for the golf course maintenance field will, in all probability, make a similar decision favoring IBM hardware. Theoretically, a club should find it difficult to justify the purchase of any hardware other than an integrated IBM system, or an IBM compatible system, for the reason that computer standardization is desirable within a club and the industry itself.

The American system of free enterprise, however, challenges this premise. Very sound and presently available software packages in the fields of accounting and data base management, for example, have been designed to be used with various hardware systems and are being marketed vigorously. It is not unlikely that a club could commit to a computer system for the clubhouse - without knowing that it does not readily accommodate golf course maintenance needs.

This circumstance would place the Golf Course Superintendent in the awkward position of having to justify a secondary computer system within the club for his purposes. More than likely, he would also be subject to some criticism for not alerting the club to the problem beforehand. Clearly, the Superintendent needs to become familiar with developing computer system options within the industry and to communicate this infomation to his clubin the very near future. It is essential that a club commit to a computer system only when it has firsthand knowledge of what specific software programs are available and which apply universally to both the clubhouse and golf course maintenance areas.

Further good news worth noting is the scope and depth with which computers will address needs of the Superintendent - beyond our best expectations. Following is a brief listing of the application areas where computer system will make the Golf Course Superintendent a more informed and better manager of people, equipment, natural resources, moneys and terrain: (1) word-processing for report writing and filing; (2) data base systems for storing, sorting and analyzing on-site information and data; (3) an informational network capability to share information and data with national data base operations; (4) labor hour management and analysis; (5) equipment inventory maintenance and depreciation scheduling; (6) a crossreference inventory generic versus brand name equipment parts and materials; (7) budget development, tracking and analysis; (8) chemical applications-computations, cost and effectiveness comparisions within a data base environment; (9) irrigation and pump systems management; (10) graphics; (11) publication & literature inventory listings and cross referencing; (12) diagnostic inquiries and research; and (13) landscape design.

It is difficult at this time to pinpoint the anticipated cost of the computer systems that would deliver the above capabilities. Preliminary studies, however, suggest the total cost of the hardware and software system would be recoverable within a year's time — before consideration is given to the many intangible benefits that will accrue to the Superintendent and his club from computer usage. Should appropriate hardware already be positioned within a club, these costs would be significantly less.

Finally, it is suggested that the Superintendent begin now to acquire "hands-on" experience with a computer. One sure way is to acquire access to a Personal Computer through the club, or personally, with relatively inexpensive word-processing, home accounting and data base software programs. Any reasonable effort to get some golf course and personal business done on the PC will afford the Superintendent and his family a comfortable way to become computer oriented and ready for more critical tasks - in the near future.

It is important that the Golf Course Superintendent begin to take the initiative with computers soon — as developing circumstances within the golf industry expand this opportunity and offer every chance for the turfgrass manager to excel. An entire industry is preparing to take a big step forward with computers. It is imperative that the Golf Course Superintendent be prepared to join in and contribute to this advance. The alternative is obvious. The Met GCSA is ready to help its members in this regard.

Reprinted from Tee to Green.





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GOLF TURF NEWS

IFAS Working For You

By Stephen D. Verkade

In southeastern Florida there is a unique opportunity for students to earn a Bachelor of Science degree in Ornamental Horticulture. A new program at the IFAS Fort Lauderdale Reserch and Education Center has been initiated which will enable students to earn this degree without the need to relocate to Gainesville. The program is cooperative, making use of many courses already available at local colleges and uiversities, in addition to the horticulture course taught by the Institute of Food and Agricultural Sciences.

Area community colleges traditionally offer both Associate of Arts and Associate of Science degrees in Ornamental Horticuture. Both Curricula are designed for completion in two years. The curriculum of an Associate of Science degree provides "hands-on" training in horticulture, while the curriculum of an Associate of Arts program provides limited horticultural training but is structured to accommodate additional academic study at a university leading to a Bachelor of Science Degree.

The additional academic training needed to obtain a Bachelor of Science degree can be earned in Fort Lauderdale at the IFAS facility, in cooperation with Florida Atlantic University and Florida International University. The goal of this program is to offer all of the courses necessary to complete the requirements for a Bachelor of Science degree in Ornamental Horticulture. In this program, course work taken at Florida Atlantic University and Florida International University includes chemistry, plant physiology, physics, biology, English, and mathematics. Technical courses required for a major in Ornamental Horticulture are taken at the Ft. Lauderdale Research and Education Center.

The Fort Lauderdale Research and Education Center is a part of the University of Florida System and has over 20 faculty members who work in the areas of turfgrass, ornamentals, plant diseases, urban pests, and aquatic weed management. The prerequisites and course content of courses offered at the Fort Lauderdale Research and Education Center are identical to those of courses offered on-campus at the University of Florida in Gainesville. Upon completion of the program, the B.S. degree is awarded by the University of Florida.

Courses in this program are also available to individuals who wish to enroll in selected courses, but are not interested in pursuing a degree. These courses may be taken either for credit, which means that the student is tested and graded on the material covered; or audited, which means that the student is provided with all of the same information and materials, but is not required to take exams and does not receive a grade. Courses audited provide the opportunity to learn, but do not accrue college credits toward a degree. Many key people within business organizations find that auditing courses periodically through this program is a convenient way to stay abreast of the latest developments within the industry, as well as to become aware of future trends.

Several agricultural courses are currently in the curriculum at the Fort Lauderdale Research and Education Center including Cultural Factors in Ornamental Plant Production, Environmental Factors in Ornamental Crop Production, Foliage and Nursery Production Laboratory, Plant Propagation and Laboratory, Turfgrass Culture, Special Projects in Horticulture, General Soils, and Principles of Entomology. Enrollment in these courses is strong, with a high number of students employed in the horticultural industry seeking to continue their education by working toward a Bachelor of Science degree With continued interest, additional courses will be added in the future.

Courses available in the fall 1986 semester include Environmental Factors in Ornamental Crop Production, Turfgrass Culture, General Soils, and Special Projects in Horticulture. For more information regarding the program of course availability, please contact:

Dr. Stephen Verkade, University of Florida - IFAS, Fort Lauderdale Research and Education Center, 3205 College Avenue Fort Lauderdale, Florida 33314, Phone Number: (305) 475-8990

Dr. Stephen Verkade is an Assistant Professor and coordinator of the B.S. degree program in ornamental horticulture at the Fort Lauderdale Research and Education Center, IFAS, University of Florida. His research focuses on the mycorrhizal interactions of horticultural crops.

Space Age Technology Benefits Turf Industry

By Sandra P. Carmouche

Imagine the savings in chemical expenditures if a pocket of mole crickets could be spotted before they overran a golf course. Suppose pythium could be found before its effects became visible. Consider the improvement in drainage that would be possible if the historical flow of water across a golf course was known.

Sound futuristic?

In fact, Jon Seid, of LaBelle, is currently working with golf course superintendents, using infra-red photography which is capable of producing the above results.

With a degree in Electrical Engineering, Seid has applied his knowledge in electronics to infra-red filming techniques. Photographing golf courses from a plane, he is able to determine conditions that affect turf at both surface and subsurface levels.

Seid's expertise lies not only in the specialized field of infra-red photography, but also in his ability to interpret the film he shoots.

In order to understand the difficulty of intrpretation, it is necessary to understand the basic principles of infra-red photography.

An ordinaary photography is a reflection of what the eye sees. Infra-red film is a picture of the reflection of infra-red rays, something which human vision is unable to detect.

In plants, the infra-red rays are reflected by the chlorophyll during the process of photosynthesis. As Seid explains, "Chlorophyll is the blood of the plant. When anything occurs in a plant, whether it is nematodes, a freeze, or a pathogen, the first thing affected is the chlorophyll. There will be a change in the reflectance and only experience can tell you what that change is and what's causing it. Seid's fascination with the field was acquired during the Korean War when he was attached to Strategic Reconnaissance in the Strategic Air Command as a flight crew member.

Since the war, he has worked extensively throughout the Midwest and California with many universities and state and federal agencies as a private business, photographing as much as 50,000 acres of farmland a week and diagnosing the diseases and infestations that affect agricultural crops.

More recently, he has worked with the Institute of Food and Agricultural Services, an extension of the University of Florida, in detecting citrus canker.

Seid's interest in golf courses came about when he was approached by Cary Lewis, Director of Golf Course Operations for the Vintage and Fiddlesticks in Fort Myers.

Lewis had been in LaBelle when he overheard a group of farmers talking about the photographs Seid had been taking of their crops. He questioned the farmers and was given Seid's name, whom he contacted for more information.

After speaking with Seid, Lewis had him fly over and film the Vintage and Fiddlesticks.

The results, according to Lewis, were impressive.

"It gave me a feeling of confidence," said Lewis, with regard to problem areas on the courses that he knew existed, but were hard to define to members.

He presented the film at a greens committee meeting and added, "It's an easy way to justify your chemical and fertilizer expenditures."

(continued on page 57)

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"Keeping Golf Courses Green"

(continued from page 56)

The photographs also picked up drainage problems, diseased pine trees, and bad sprinkler heads.

To date, Seid has also filmed Hole-in-the-Wall, Royal Poinciana, and Lely in Naples.

At Hole-in-the-Wall, he was able to help Buddy Carmouche, the superintendent, with drainage problems.

According to Carmouche, "I had an area where the drainage system was developed to be consistent with the slope of the land, but that wasn't working. This spot was always wet. Then John showed me that the water underground flowed in a direction opposite to the slope. So I redesigned the drainage in that area to be compatible with the underground water flow and that took care of the problem. In fact, a member told be this is the first time he's see that area dry in 30 years.

Clint Smallridge at royal Poinciana had a different problem. "This course is inundated with Brazilian Peppers. I needed a way to moniter them for removal...to get an idea of how many there were and which areas to attack."

In addition to pinpointing the Brazilian Peppers, Seid's photoraphs picked up underground rock formations and



The two dark spots, immediately forward and to the left of the tee at Fiddlesticks in Ft. Myers, are subsurface leaks in the irrigation line. Not detectable from the surface.



Dark streaks across the fairways at Hole-in-the-Wall in Naples, indicate underground lateral water flow and the direction of flow which was unknown at the time.

located spots where drainage was needed. "It saved me hundreds of hours," said Smallridge, who is also convinced that infra-red film is useful as a diagnostic aid in determining areas of turf that are under stress.

At Lely, Dan Hall is in the process of building two courses. "I wouldn't attempt to do this without infra-red," he says.

Because Hall contracts his services for maintenance and construction at Lely, cost-effectiveness is a top priorty. Guesswork is eliminated in designing the irrigation and drainage systems since the photographs locate underground rock formations and water flow.

Hall was aware of the benefits offered by infra-red photography because he had seen it work in World War II. At that time, he was in the Marine Corps and helped to build a golf course on Paris Island. Because the golf course was being built on swampland, infra-red was used to distinguish salt water areas from fresh water areas.

Seid acknowledges that his services, "don't eliminate the superintendent from going out and doing his job. It allows him to utilize his time more effectively." He adds, "The whole success of this program is based on a cross-feed of

(continued on page 58)



The two trees adjacent to the right of the green at Royal Poinciana in Naples, in the lower right corner, shows stress to the trees which could not be detected at the time.



Showing the identification and relative health of serveral species of trees at Lely in Naples.

(continued from page 57)

information. The superintendent has to take the time to sit down and talk with me about the film."

It is also important to note here that, although Seid is able to pick out areas of turf that are under stress, he cannot at this point, determine its specific cause.

The reason for this is simple. Seid has only recently begun working with golf courses and is not wholly familiar with the pattern that diseases and infestations make.

For example, Seid states, "I can spot nematodes in tomatoes. But nematodes look different in grass than they do in tomatoes, and they look different in citrus. In fact, the patterns will change from here to Orlando because the soils are different.

He is convinced, though, and so are many of the area superintendents, that very soon he'll be able to diagnose nematodes and mole crickets from a photograph. "Once I see what these things look like on film, then I'll know what to look for in the future. There's no question in my mind that I can, for instance, find a spot of pythium."

Even more exciting is Seid's hope of being able to prognosticate diseases and infestations. "I want to emphasize that this has not been documented," says Seid, "but it has been my experience that over 95% of the time, where we find insects or the movement of pathogens, they were prefaced by a former stress. For that reason, we can forecast which area will be attacked."

Since he must have a series of photographs before he can determine what changes are taking place in the turf, Seid has decided, after speaking with superintendents, that four photographing sessions per year would be the ideal.

"If you know the time of year that nematodes are going to come in and I have a history to go by, then I can predict where those rascals are going to show. I've done it in agriculture."

With the ever-increasing costs of chemicals and fertilizers, the financial savings for golf courses could be enormous. Less time and effort would be needed while the quality of turf would be improved.

The possibilities are limitless and, many superintendents believe, services like John Seid's are the wave of the future.

"A man is always stronger while he is making a reputation than after it is made."

— Josh Billings





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BONITA BAY CLUB:

Black Makes It Green

By Sandra P. Carmouche

"Love what you do!" This, according to golf course superintendent Mark Black, is the most essential ingredient for success.

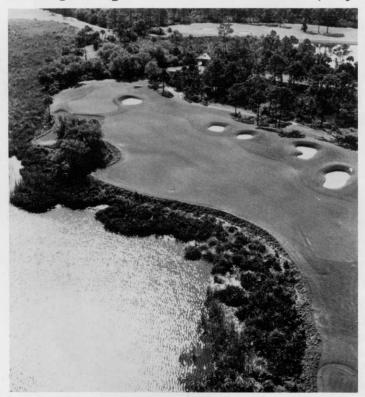
The simple philosophy has paid off for Black, who began his third year as a golf course superintendent in February of this year.

Bonita Bay, the 18-hole championship golf course that he maintains, was ranked 19th in the annual "Florida's 50 Best" by Florida Golfweek magazine. This is exceptionally noteworthy because the course was less than one year old.

Since it received the highest ranking among first-year courses in 1985, Bonita Bay's golf course architect, Art Hills, was awarded "Architect of the Year" by Florida Golfweek.

These are impressive achievements for a superintendent who discovered the profession "completely by accident".

"My original intention was to go to the University of Florida and get a degree in Ornamental Horticulture," says



Golf course architect, Arthur Hills, was recently honored by Florida Golfweek magazine as "Architect of the Year." Hills received this award in recognition of his design of the championship 18-hole golf course at Bonita Bay Club, ranked 19th in the magazine's selection of "Florida's 50 Best." An aerial view of the 13th hole is shown.



Photo of Mark Black: Black's enthusiasm for his work is reflected by the outstanding condition of the course.

Black, a native of Lake Wales, Florida. "I had five years experience in the nursery business which led me in that direction."

"In 1975 I moved to Orlando," he continued. "I was looking for work when I drove past a sign that said Arnold Palmer's Bay Hill Club. I didn't think they needed any help, but I turned around, went in and got a job with the golf course maintenance staff. And I just fell in love with it."

A year later, Black went on to receive his Associate of Science degree from Lake City Community College where he majored in Golf Course Operations. In 1980 he landed his first position as assistant superintendent for Dan Hall at Imperial Golf Club in Naples.

"I was very fortunate, being so new in the business, to get a job with Dan," he remarked. "He is a very knowledgeable man."

Black spent four years at Imperial before accepting his present position at Bonita Bay.

"It's very ironic. At one time I entertained thoughts of moving back to Lake Wales. This piece of property (Bonita Bay) reminds me very much of that area."

Located in Bonita Springs, midway between Naples and Fort Myers along U.S. 41, the Bonita Bay community encompasses a unique variety of topographical features. Pine ridges, reminiscent of those found in north and central Florida, give way to marshlands and soughs as the property slopes from 13 to two feet above sea level.

Three separate bodies of water border the project; Spring (continued on page 61)

(continued from page 60)

Creek to the north, the Imperial River on the south, and Estero Bay to the west.

The community was years in the planning stage before ground was broken and every effort was made to protect the natural environment. Even homeowners are required to retain 50% of their lawns in native vegetation.

As a result of the special emphasis placed on preserving the natural environment throughout the 2400-acre development, the Bonita Bay Water management System was one of 14 projects in the nation to be nominated for the Outstanding Civil Engineering Achievement Award in 1986, sponsored by the American Society of Civil Engineers. Bonita Bay Water Management System was developed by the engineering, surveying, and planning firm of Wilson, Miller, Barton, Soll and Peek, Inc.

For the golf course, which was built by Wadsworth, the protective measures meant an irrigation system that covers primarily turfgrass areas. Drainage was designed to follow the historical flow of water into a slough, which has been left undisturbed. Telephone poles, used as a foundation for the wooden cart path that bridges the slough, were carried in by hand to prevent any unnecessary destruction of the natural habitat.

Although the environmental safeguards implemented at Bonita Bay required extensive planning and tremendous effort, the results are gratifying.

Golfers who play the course are treated to a panoramic

view that only nature could construct. A large marsh and a sea of cattails seperate and define the 11th and 16th holes. To th left of number six fairway, a willow island is surrounded by a man-made lake. Fairway berms create an aesthetic, multilevel playing surface throughout the course.

For Black, building the course was, "the most exciting period of my life.

"We have good turf and I believe this is due to the fact that we worked so hard duirng construction to eliminate many of the problems you find on some existing golf courses."

But being a new superintendent isn't always easy and Black admits, "sometimes it's hard to know when to stick to your guns."

During construction, the percolation tests on the greens came back at eight inches per hour. Everyone was ready to grass. But due to the excessive amount of rainfall in Florida, which demands faster draining greens, Black refused to give in to pressure and waited until test results showed a percolation rate of just over 12 inches per hour.

With construction complete land the course open for play, Black says his objective now, "is to be tournament ready everyday."

This goal has obviously been accomplished. The quality of turf is clearly outstanding.

Black attributes this to several factors. "For one thing, I (continued on page 62)





View of hole number two. Undisturbed marshes create an aura of natural beauty at Bonita Bay.

(continued from page 61)

use as little water as possible. I feel bermudagrass tends to like it on the dry side."

He also gives credit to his excellent staff and, in particular, his assistant, Randy Godfrey, and his equipment technician, Herb Carlson. "The key to success in management," Black feels, "is to surround yourself with good people."

Although he makes the decisions concerning cultural practices. Black leaves the direction of his staff to Godfrey. In this way, the crew answers to only one person.



Slash pines are among the variety of native vegetation found at Bonita Bay. Shown here is hole number three.

Black also believes that by explaining the purpose of cultural practices to his crew, he gets better performances from them. He insists on details, for instance, the "black line," as he calls it, that denotes the perimeters of the greens, fairways, and tees. "It's like an exclamation point, it says something."

And the excellent condition of Bonita Bay says something about Black's enthusiasm for his work. "In this business, you've got everything; administration, management, agronomy...I have yet to get up in the morning and not want to come to work." ■

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Role of the Golf Course Consultant

By MAX A. BROWN, Ph.D.

Editor's Note: Because this issue is on consultants, I am re-running this article from the January 1979 South Florida Green. There is much to be gained from Max Brown's vast experience and I am sure our young superintendents will profit from reading this article.



Dr. Max A. Brown

This article presents to you what I feel to be the present and future role of the golf course consultant. These thoughts are based on my experience as a consulting agronomist in all parts of this country and around the world for the past fourteen years.

An effective "cop-out" for me would be to present one

An effective "cop-out" for me would be to present one picture to you — a group of golf course superintendents and another picture to golf course owners, managers and greens committee members. I won't do that; what I say here is my objective appraisal that I would tell to golf course superintendents, owners, managers and greens committee members alike.

DEFINITIONS

Let's begin our discussion by defining a few terms so that we all are talking about the same things: First of all:

1) Consultant: one who gives professional advice or services,

2) Consult: a) to ask advice or opinion, b) to deliberate together: confer. Therefore, a golf course consultant is one who is asked to give advice or opinion on golf course maintenance. Also, he must deliberate together or confer with a person. This person should be the golf course superintendent; too often it is with the golf course owner or manager, at the exclusion of the superintendent.

Many times I have been called upon by people other than the golf course superintendent to review a maintenance program. It is obvious that their purpose is to call in a hatchet-man to side against the superintendent. I don't do it. It works out better if management requests the superintendent to seek the help or guidance to solve the problem. If requested by the superintendent much more good can be done, simply through the cooperation which will result.

THE SUPERINTENDENT

What makes a good superintendent? How do you judge and say this guy is a better superintendent than the other guy? Simply by the day-in, day-out condition and playability of his golf course, for the money spent. He can only be judged by the quality of his product in view of the resources available to him. He may be stuck with a "dog" of a golf course and no amount of money or skill can make it look good — but he is still judged by it.

If we study this man that we judge to be a good superintendent, we invariably find him to have the three following qualities:

1) Well organized.

(continued on page 65)

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P.O. Box 1912 Tifton, GA 31794 Ga.-Grown & Certified Sprigs & Sod 2) Technically, well founded in a) turf requirements,

b) equipment, c) irrigation, etc.

3) Dedicated man, continually studying and learning. He is a man who openly admits he doesn't know all the answers. He remembers the old definition of an educated man as one who doesn't necessarily know all the answers but knows where to find them.

The better superintendents, in this game of musical chairs we see around us, seek to improve themselves professionally and financially by taking better jobs as they come along. We have seen in recent years that many of the highest paying jobs, with the highest maintenance budgets, are with golf complexes with two, three, four or more golf courses.

The man in charge of operations like this finds it necessary to hire people to work for him who are in actual fact the superintendents on the individual golf courses. He no longer has the time to study each blade of grass on a daily basis. He finds himself conferring with his superintendents, giving advice and opinion. He finds himself to be almost a (shudder) consultant.

CONSULTANTS

A good superintendent has many sources of information at his disposal. With a legal problem he can call his lawyer, a medical problem his doctor, a financial problem his banker or accountant. For technical information on his golf course he can consult text books, or periodicals. He can ask a respected superintendent, call the county agent, one of the state turf extension men, or a USGA Green Section agronomist. Irrigation equipment manufacturers strongly recommend using a qualified irrigation consultant for irrigation problems. A professional golf course consultant is simply another source of information. Used properly, all of these sources of information are good forms of insurance against a small problem becoming a major calamity.

All of the above listed sources of information are technically consultants. Some you pay for by tax funds, others you pay for by private funds.

The important factor is that you know your sources of information and use them to your best advantages.

The role of the private golf course consultant has varied over the years in this country. In Florida, with its tremendous number of golf courses, the need for technical information has been particularly acute. Florida has had one of the strongest turf research and extension programs of any of the states and it's had a wealth of the best superintendents and best conditioned golf courses in the country. But the demand for perfection has been greater in Florida than in any other region of the country.

Private golf course consultants have come and gone over the years in Florida. Often, they have created bad impressions with the industry. We could blame several things for this: personality reasons, spreading too thin, too little knowledge, and various and sundry poor approaches to the business. But we cannot deny that a tremendous demand for turf consultants has existed, and the demand in the industry is obviously increasing.

What does an individual need, or what should you ex-

pect in a turf consultant?

1) Must be independent with no binding ties or axes to

grind.

2) Must keep constantly abreast of latest technical information (pest control), equipment, managements, irrigation, etc. a) read literature, b) attend meetings and conferences c) visit courses and superintendents over a wide area.

3) Must know golf, and the relationship of turf to the game. (Grain, moving heights, footing, body, etc.)

4) Must be aware of maintenance practices and requirements of all types of golf courses over as broad an area as possible. Athough conditions are different we can sometimes benefit by procedures used in Maine or California. Innovations are made by individual superintendents all around the world and he must be aware of

5) Must be able to work recommendations into the maintenance program, not simply make the recommendations. Anyone can tell a man what chemicals to use to control weeds in a green, in a lake or around trees, but how can he work it into the program if the crew is short

and equipment is old?

TRENDS OF GOLF TURF INDUSTRY

1) Greater demand for perfection. Very little tolerance of imperfection.

2) Better men are increasingly becoming responsible for multiple golf course complexes, and for more than one

independent course.

3) Top superintendents are increasingly budgeting funds each year for obtaining emergency help when and if necessary, and for a periodic review of their total operation. The funds are considered an investment in better golf turf and insurance against major problems. The greatest problem is finding the man or organization who is qualified, whose judgment you can trust and respect. If a problem arises it is better for the superintendent to solve it himself than to have management go outside for help. When management goes outside for help it seldom works. Complete acceptance and cooperation is reqired between the superintendent and the consultant or the time and money is wasted.

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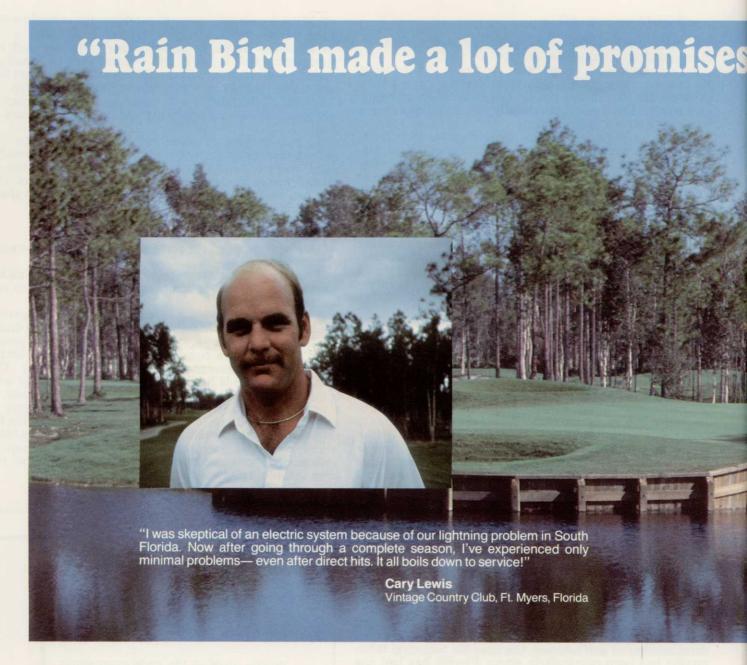
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Guest Editorial

By James E. McLoughlin

Editor's Note: Because of recent superintendent job changes in Florida, we feel that the following editorial reprinted from the April 1986 issue of the Tee to Green is very apropos to our situation.

COMMUNICATIONS ARE THE KEY TO JOB SECURITY

Over 20 golf course superintendents positions opened and were filled through this past Fall and Winter within the Greater New York Metropolitan area. About a third of these moves were precipitated by employing clubs; the balance represent the "domino affect" as superintendents replaced each other from job to job.

A careful examination of the situations were a superintendent's employment has been terminated by a club (not only this year, but for recent years as well) presents a relatively consistent pattern, an insight and the opportunity for a valuable lesson to be learned. Virtually, in every case the primary factor why the job was lost was due to a breakdown communications and not because the superintendent was not capable of executing on the job.

Clubs and their Green Committee do not expect perfection from a golf course superintendent. They readily accept the variables of nature and the margin for human error. When faced with problems that will always arise from time to time, however both the club and golf course superintendent fail to communicate adequately, or frequently enough about situations at hand. As a result, misunderstandings build on one another, educational opportunities are not taken advantage of and pressure situations do not get diffused - with the overall result that the golf course superintendent becomes vulnerable when he need not be.

Clearly, a different scenario can be orchestrated and should be, with every golf course superintendent taking the initiative at his own club to do so — regardless of his level of performance. The fundamental concept here is twofold: (1) an accurate job description should be written for the position of golf course superintendent that would be reviewed periodically; and (2) the club Green Committee and the golf course superintendent should meet annually, presumably in the Fall of the year, for a balanced review of performance based on the stated job description. Positives would be recognized and acknowledged; questions stated and addressed; and problems identified for immediate attention and review the following year. meeting results should become part of the permanent club record, with a written copy of the "minutes" of such meetings being given to the golf course superintendent — for his file and review with trusted counselors.

An interesting variation on the above would be for both the club and the golf course superintendent to evaluate management performance on the golf course simulataneously via two identical check lists — then compare results. A meaningful exchange will always evolve from this approach.

It might take some courage to seek out annual meetings of this kind, but the results will justify the effort every time. By inviting a constructive annual evaluation and balance exchange — the golf course superintendent created educational opportunities that will abound, presents himself as a secure manager and identifies problems that can only become dangerous when left unattended. (JMcL.)

Reprinted from Tee to Green.

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