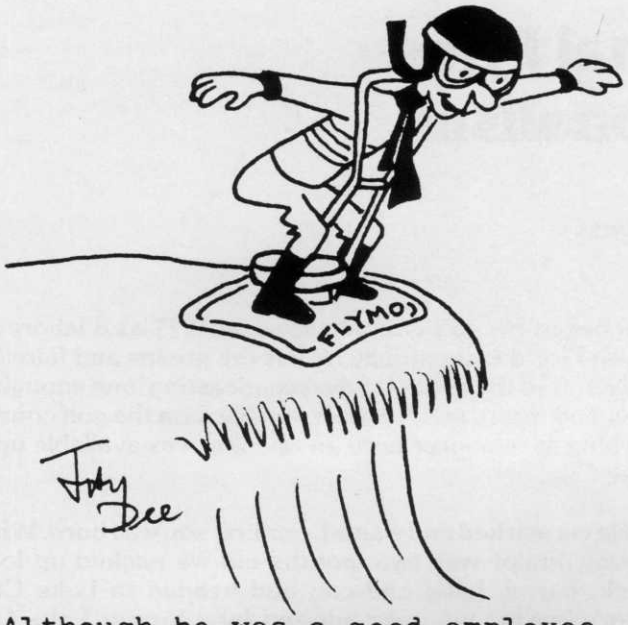

Although he was a good employee, Henshaw never really got the hang of Flymowing.

CREDIT: CENTRAL FLORIDA GCSA

Work with the Superintendent

Communication Important to Golf Course Care

The following is from a speech by William C. Campbell to the Golf Course Superintendents Association of America.

Communication is important in any endeavor, but it is crucial for golfers to develop a close relationship with their golf course superintendents.

Under the ideal situation, there would be a key person, and only one person, who would represent all golfers at a course and communicate with the superintendent. That key person should be respected by his fellow members and should be knowledgeable enough to understand what a superintendent may explain.

The key person ought to be honest in his dealings with the superintendent, meet frequently with the superintendent and be practical in his suggestions.

At a private club, the key person normally will be the Chairman of the Green Committee, but too often the Chairmanship changes hands every year. If the club has a Green Chairman who is really effective, really trusted and works well with the superintendent, the club ought to keep him in that position for as long as it can.

The same arrangement should also exist at public and daily-fee courses. It might even be more important at such courses.

A daily fee player is just as interested in the condition of the course as a country club player. But the daily fee player plays anywhere he wants. The owner of the course needs to work closely with the superintendent if he wants to attract business.

That should mean something other than just keeping the course cut back so it is conducive to moving a large number of golfers through each day. It should mean keeping the golf course in as good a condition as it can be, so players will enjoy it and come back.

It is important for a superintendent to encourage such a relationship. If the condition of a course goes bad, everyone suffers. That is when a club must have confidence in its superintendent. They will, if they know him and understand his situation.

On the other hand, if the course is in good shape, the superintendent wants to feel that his efforts are appreciated.

I'm not saying that a superintendent should be free from criticism. But any criticism has to be constructive and should come from a single source. It should come from that key person, the one who also provides the superintendent with a lot of support when he deserves it.

It also is important to open channels of communication to people outside his club. Consultants — such as those employed by the USGA Green Section — are good sources of support.

A superintendent should not have to go it alone. Green Section consultants are trained as experts and have a wealth of observations and experience to draw upon. They can supply objective opinions to any problems the superintendent might have.

The ideal situation would be one where all golfers are educated enough to appreciate the role of the golf course superintendent.

CREDIT: USGA NEWS

Tim's Personal Price of Professionalism

By: Cheryl Jones

Professionalism and the Superintendent . . . a topic from which massive amounts of articles could easily spring! As recent newcomers to this profession, I cannot write with any amount of expertise on the daily professional conduct and contacts of the golf course superintendent; however, I do know that the potential for this quality is present at birth in every human being, the upbringing nurtures it, and that education and experience polishes it. A prime example: the editor of this magazine; Dan Jones, Superintendent of Banyan Golf Club in West Palm Beach, who thru sheer hard work gained the experience and knowledge to get where he is today. I, as the wife of a graduate of the Lake City Community College Golf Course Management Program can attest that professionalism was indeed called upon during those college years. My husband Tim has just come thru those years with flying colors.

The well dressed, well spoken, intelligent managers of men who work miracles on the golf course greens all have their own style, but in common they share maturity, intellect and an intense desire to succeed and exceed current levels of success. They look to a future not measured by days, but by years of improvements which are accomplished though often invisible to the naked eye, but clear in the superintendent's mind.

All of you started somewhere, and I seriously doubt it was by walking into a country club and announcing, "I'd like to be your superintendent". Some began as laborers, working and sweating your way up the ladder. Some chose the degree route and put years and years of study into this profession. Some, like my husband, chose 3-year programs at schools such as Lake City Community College.

Tim began his golf course career in 1977 as a laborer in South Florida. Eventually he left the greens and fairways and entered the field of radio broadcasting long enough to meet and marry me. He was soon back on the golf course, working as a laborer until an opening was available up in Lake City.

While we worked and waited, our first son was born. When Timmy Junior was two months old we packed up lock, stock, barrel, baby and cat, and headed to Lake City. Before leaving we were advised by a former Lake City graduate, "If your marriage can survive school, it can survive ANYTHING." How many times those words gave us strength; if this was truly the worst, we would be able to manage anything life chose to throw in our path.

Our first year in Lake City wasn't too bad. We lived in a drafty trailer in the woods, heated solely by a kerosene heater. Tim would study at the kitchen table, leaving the heater in the living room for the baby and me. He not only had to re-develop study habits, he had to also keep his family together. With no second car and no nearby neighbors, Tim's daily trips to school became dreadful to me; he was just about my only life to the "outside world", and aside from fulltime classes and studying, he held two part-time jobs. He HAD to become a professional manager of his time to satisfy all of his responsibilities.

On-the-job training in Clearwater, Florida followed that first year, and that June brought news that our second child was on the way. Tim got 50 more gray hairs, perhaps cried in private at the prospect of another mouth to feed, and coped. This was truly trial by fire. Thru it all, Tim

(cont. on page 53)

(cont. from page 52)
maintained straight "A's".

The second year began much like the first year, with a few "bad weeds" who decided that they wanted an easier profession no longer in the class. Two weeks after school began that second year, our 15-month old son fell onto the kitchen floor in a Grand-Mal seizure. Tim was at school at the time. No phone. No car. No neighbors. It sure looked like God was looking the other way. This fateful day began a long string of serious illnesses for our baby, more seizures, more sleepless nights for both of us, with Tim facing tests in the morning. Halfway thru that second year Tim again pulled in straight "A's". Don't ask me when he studied, or how he managed to retain what he read at 4:00 a.m. With a sick baby and very pregnant wife on top of constant financial worries, it could be nothing else but "Professional Tenacity".

Our second son chose to be more than 3 weeks late in arriving. I went into labor on the first day of mid-term exam week. Daniel was born on the second day of exams . . . (the only thing that would keep Tim away from class) . . . and at 3:00 a.m. on the third exam day my husband rushed our 20-month-old son to the hospital with croup. Both of them got the flu. Between tending a sick toddler, a recovering wife, and being ill himself, my husband managed to study, make-up,and pass all his exams. The end of the second year brought straight "A's" again. Professionalism.

At graduation, my husband wore the gold sash of the PHI THETA KAPPA. Grade-wise he was either at or very near the top of is class. He did this thru professional management of the time, money, and energy. No one gave him the grades, he earned them, and paid for his efforts with very little sleep and at times at the expense of his own health. The three years at Lake City Community College afforded us very few luxuries. While other students had new cars, clothes and dorm housing provided by their parents, we clawed our way thru. Our parents did help us, and at crucial times. We are eternally grateful to them for the checks that came when the cupboard was quite literally bare. We are grateful to the aunt and uncle whose assistance covered the cost of antibiotics needed by our son. College was not easy, but my husband got the most for his money . . . education and knowledge. While others partied, he bathed babies while I quizzed him on test material. I would not know a mole cricket if it crawled into bed with me, but often they were on Tim's mind when he fell asleep. Professionalism.

Our marriage? Scarred. Tested. Strong. Our future? Thanks to my husband's tireless efforts, Bright. Secure. Hopeful. Some classmates who preferred beer to books did manage to graduate and enter the golf course industry. It will not take long to weed these out. You need more than passing grades to get by and succeed in this competitive industry. My husband is a survivor. My husband is a professional. ■

Editor's Note: Tim Jones has recently accepted the position of assistant to Jim Watkins, Golf Course Superintendent at Frenchman's Creek Golf Course in Jupiter, FL. Tim, Cheryl, Timmy Jr. and Daniel are also part of my family and I am very proud of what they have accomplished.

Fertility Requirements of Bermudagrass

Dr. Max A. Brown, Agronomist

What is the major problem limiting development of good turf? I'm asked this question quite often and I'm sure you are, too. Think about it for a second. Is it nematodes, weeds or diseases? Possibly, in your particular case it could be one of these.

But as you look at many golf courses over the state, or hundreds of golf courses over the country and around the world, we find that these are not the major problems. They are secondary problems of pest invasion. the major problem are the basics. The basic management principles of providing the grass with what it needs to grow and produced the desired turf.

The three basics of turf management are watering, fertilizing and mowing. Let's say those again: WATERING, FERTILIZING and MOWING. These are what you must provide for the grass so that it can grow an develop the desired turf.

You say, what about nematodes, weeds, diseases, etc.? I classify all of these in a category just after these basic three and call it Pest Control. This includes weed control, insect control, disease control, nematode control, and you could also include vandal control. These are all outside organisms which attack the turf. They are not involved in providing the physiological essentials to the plant system. In fact, good management of the three basics will minimize invasion by outside organisms and have an effect on need for pest control.

I don't mean to minimize the importance of pest control, because if your grass is being eaten up by worms, nematodes or disease, that's your biggest problem and, it must be corrected immediately.

Our concern for the next few minutes this morning is with one of the three basics, fertility requirements. In particular — fertility requirements of bermudagrass.

I'm not going to give you specific information on exactly what fertilizer is required in every particular case. We will first discuss BASIC PRINCIPLES upon which our fertility recommendations are based. Then I'll give a few specific personal ideas, and at the end we will discuss specific questions from the audience.

Some of the points to be discussed are the following:

1. Objectives of the fertilizer program.
2. How do we know *what* to fertilize with?
3. How do we know *how much* to apply?
4. How *often* do we apply?
5. What *materials* or *mixes* should we apply?
6. Special considerations.

OBJECTIVES

There are quite a few reasons why we fertilize our golf course turf and effects we want to get from our program, but listed below are some of the most important ones.

1. Color.
2. Uniform density of turf — day to day and month to month.
3. Traffic tolerance.
4. Disease tolerance.
5. Minimum thatch development.
6. Good putting quality.
7. Enable turf to withstand changes in weather — hot, cold, wet, dry, etc.

WHAT NUTRIENTS DOES THE GRASS PLANT NEED? How do we determine what fertilizer nutrients

How do we determine what fertilizer nutrients the grass plant needs? If we chemically analyze grass tissue up to

(cont. on page 55)

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36 elements may be found. Of these, 17 have been determined to be essential to the life functions of the plant.

Three of these are supplied by air and water (C,H,O). The rest enter the plant through the root system as salts in the soil solution.

Our soils are storehouse or a "Bank," if you will, for these nutrients. Just as some bank accounts contain more money than others some soils are better storehouses of nutrients than others.

The grass plant is continually drawing nutrients from the soil to supply its needs. And, just like your checking account at the bank, if you continue to draw on it without replacing, eventually you are going to run into trouble. You can't withdraw indefinitely without depositing.

Our soils in Florida are usually poor banks; poor storehoses for nutrients. many of the nutrients come into short supply before others and must be added as fertilizers. We determine which one or ones of the nutrient

elements is in short supply and limiting growth by a combination of the following techniques:

1. Plant response. (Deficiency symptoms, growth response.)
2. Soil analysis.
3. Plant analysis.

Turfgrasses are very intensively managed plants on golf courses. This fact combined with the low nutrient storage of our soils means that bermudagrasses in Florida require a lot of fertilizers.

HOW MUCH TO APPLY?

How do we determine how much of a given nutrient we should give a plant to produce optimum growth response — in accordance with our OBJECTIVES?

A combination of several approaches have been used and are being used by research workers and professional turf growers.

1. Trial and error additions of nutrients and note response.
2. Systematic, well designed experiments, designed statistically to give you optimum nutrients levels.
3. Analysis of grass tissue. See how much of each nutrient is removed by mowing and strive to replace it.

A study made several years ago by O. J. Noer, at the Memphis Country Club showed that the ratio of $N:P^2O^5:K^2O$ in putting green grass clippings was about 3:1:2. Another similar study in Florida produced a ratio of approximately 4:1:2.

From this data we see that a ratio approximating a 3:1:2 to 4:1:2 is present in putting green grass leaf tissue. So, regardless of how much total material is applied, we need to keep the soil nutrient storehouse provided with these nutrients in sufficient quantities to supply this ratios.

In many of our Florida soils, nutrient holding capacity is so small that we must apply these exact ratios of nutrients over the period of a season to break even.

As far as total amounts of nutrients required, the following ranges can be given (listed are pounds of nitrogen, but it should be noted that we are considering proportionate amounts of P^2O^5 and K^2O):

1. Greens: 12 to 26 pounds of nitrogen per thousand square feet per year.
2. Fairways: 4 to 12 pounds of nitrogen per thousand square feet per year.

To be more specific, it can be said that most greens should receive about 24 to 26 pounds and most fairways about 9 pounds of nitrogen per thousand square feet per year.

FREQUENCY OF APPLICATION

Closely coupled with rates of application is frequency of applications — how often to fertilize.

Much depends on the materials used. For example, light rates of soluble fertilizers are sometimes applied daily through the irrigation system. On the other hand, slowly available materials are sometimes used only once per month. The objective is to maintain uniform color growth rate, etc. from day to day.

The common practice with most of our fertilizer mate-

(cont. on page 56)

(cont. from page 55)
rials is to fertilize greens every 14 days and fairways 6 to 8 weeks.

WHAT MATERIALS TO APPLY

Any discussion of nitrogen fertilization must be accompanied by: thorough understanding of the nitrogen cycle in nature and micro biological transformations of nitrogen in the soil, as shown on slide No. 1

The various forms of nitrogen present in the soil are closely related and constantly changing, as indicated by the arrows on the slide.

These forms of soil nitrogen relate directly to the form of nitrogen listed on the fertilizer tag. Nitrate nitrogen in the soil is the main form taken up by the plant roots and is subject to leaching by heavy rains. Ammonium nitrogen is rapidly changed to nitrate in most soils, but as ammonium, is moderately resistant to leaching.

Water soluble organic nitrogen (WSON) is usually urea and for most practical purposes behaves similarly to ammonium nitrogen in the soil. Water insoluble organic nitrogen (WION) is considered to be relatively "slow release" nitrogen. Additions of this form as fertilizer are additions to the organic nitrogen pool of slide No. 1 To be taken up to the plant, organic nitrogen must be changed to ammonium, and further to nitrate.

Major inorganic nitrogen sources include ammonium nitrate, ammonium sulfate, ammonium phosphates, potassium nitrate, and calcium nitrate. organic nitrogen sources include activated sewage sludges processed tankage, other plant and animal residues, and various urea formaldehyde materials.

Phosphorus fertilizer materials include simple super phosphate concentrated super phosphate, mono ammonium phosphate, di ammonium phosphate, and ammonium poly phosphate. Super phosphate and ammonium poly phosphates are more effective than the ammoniated super phosphates in high pH soils.

Major potassium sources are potassium chloride, potassium sulfate, potassium carbonate, and potassium nitrate. Potassium is a very important nutrient and its importance overlooked. It is subject to heavy leaching losses in acid sandy soils of Florida. potassium nutrition plays a key role in turf disease resistance and cold hardiness.

This very briefly introduces some of the individual fertilizer *materials* we can use. We've also said something about *how often* to apply, *how much* to apply, and *what* to apply.

This might be a good time to look back at our *objectives* in fertilizing, and visualize, if you will, what you consider to be the perfect turf. This perfect turf is the objective of all our turf management efforts. For our purposes here, it is the objective of our fertilizer program.

There is more than one route to attain this objective. In other words there is more than one fertilizer program which will produce the perfect turf. variations in a program can be in rates, frequencies, pure materials, mixes, organics or inorganics.

My preference is to use complete fertilizer mixes which include some of the nitrogen as organics. Advantages of this approach are:

1. Minimize or eliminate danger of burn. No matter what the reason, the golfer finds no excuse for fertilizer burn.
2. Balanced nutrition with each feeding.
3. Combination of slowly available and rapidly available materials give good base density and color of turf without excessive growth flushes.
4. Good fertilizer condition, no caking.
5. Fewer materials to store and for laborers to keep straight.

Fertilizers used for greens should have small particle size but not dusty. It should be fairly low in total nitrogen so a uniform distribution of fertilizer can be attained.

Materials used in the summer should contain a higher proportion of organic nitrogen than that used in the winter. A higher proportion of nitrate must be used in the winter.

SPECIAL CONSIDERATIONS

Seasonal modifications in the fertilizer program include increasing nitrate in cool weather, increasing potash before coldsnaps, and light applications of urea, nitrate and potash to help grass overcome cold snaps.

For most practical purposes the same fertilizer materials applied as liquids or solids are equally effective. This leads us to the possibility of applying fertilizers through irrigation systems.

There are no agronomic drawbacks to this method of fertilizing. The rapid advances in sprinkler irrigation equipment and design and the increasingly difficult labor situation will make fertilizing with our automatic irrigation system quite commonplace in only a few years. ■

"As I grow older, I pay less attention to what men say. I just watch what they do."
– A. Carnegie

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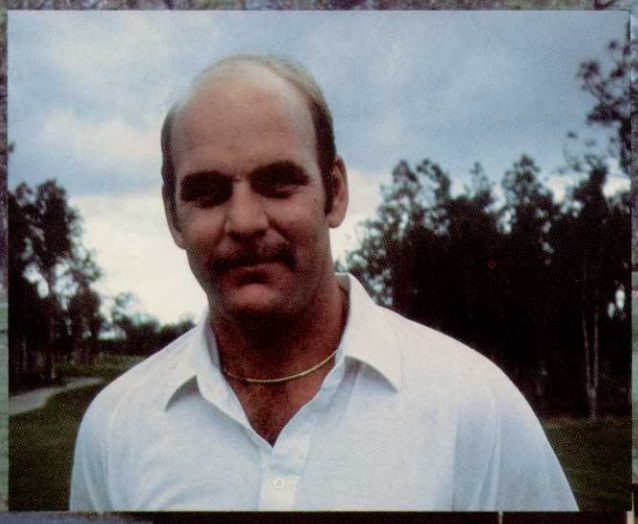

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The Ethics Question

by Mark Jarrell

Imagine, if you can, a day like this:

You've just gotten the crew out of the shop and off to work. The phone in your office rings. A close friend and fellow superintendent is on the line. Swearing you to secrecy, he begins telling you of another friend and superintendent who is about to lose his job, though he is totally unaware of any dissatisfaction with his job performance. You hang up, frustrated and upset, not knowing what you should do.

You head out to the golf course to clear your head. Your best operator pulls up on the greensmower and informs you he is leaving in two weeks. You ask him why and you are told that the superintendent at the Scurvydog Country Club has offered him 50¢ more an hour to work for him.

Flabbergasted, you finish your inspection tour of the course and head to the shop for a cup of coffee. The phone rings again. It is the manager of El Pollo Verde Country Club — someone you had met at a chapter meeting several months ago. He flatters you with compliments about your reputation in the golf business and asks if you would come over to his club and take a ride around the golf course with him; there are a few problems out there that his superintendent either cannot or will not take care of. You ask him if his superintendent knows that you have been asked to do this. He answers, "No, Bill has too much pride and wouldn't respond favorably to that suggestion". After a little more coaxing, you agree to drop by later that day to help them out.

No sooner do you hang up the phone than it rings again. This time the caller is Mr. Blueblood, the greens chairman of the ultra-exclusive Idlerich Golf and Country Club. He is calling to discuss the possibility of you leaving your present position to come to work for them.

You can hardly believe your ears! This is *THE JOB!* Big money. High profile house on the golf course. Everything! Somehow you remember to ask him if the present superintendent has been informed that he is to be terminated. He says "No, the committee feels it would be best if he didn't know until the day the new superintendent is to take over".

Now what do you do? This job would be a big step forward in your career, and the only way you are going to be allowed in the game is to play by their rules. You thank Mr. Blueblood for considering you and set up an interview for the following Tuesday.

The last two phone calls have just about made you forget the unpleasantness of the early morning. You put your feet up on the desk, lean back in your chair, feeling like a Turbo Sup, when the phone rings again. On the other end is your very best friend, another superintendent, who begins, "I don't know exactly how to tell you this, but I've just heard from a very reliable source that you are about to be fired".

Quite a morning. I'll bet you can't wait to see what the afternoon has in store for you.

The series of events described above contain several examples of the kinds of situations we find ourselves in which fall under the heading "Code of Ethics". In these examples, the superintendent depicted has clearly violated the Code, has had transgressions against him, and has operated in that gray area of technicality that is used to rationalize a particular response to a given situation.

Unfortunately for our profession, since there is no "legal" recourse against violators of the Code, members tend to act only in their own best interests in far too many cases. The inconsequential threat of censorship or revocation of membership in the Association and unlikeliness that a particular violation would ever be taken that far, contribute to our members' indifferent attitude about the Code. We too often pass these violations off as "the way of the business world" and impractical to try to do anything about.

(cont. on page 61)