



Crew members at the Olde Florida Golf Club use video tapes

Photo by Darren Davis

tor reading the owner's manual.

The videos provide a thorough method of training that is both visual and audible.

How many times have you given instructions for a task to an employee and have the individual give you a blank stare and a head shake assuring you he understands, and then find out later he had no clue of what you were talking about?

Or how many times have you taken the time and sincere effort to go in to the field to train an employee on a job and spend a good amount of time explaining the correct method for accomplishing the task, only to realize that afternoon you forgot one major point! What if that major point was watching out for hydraulic leaks and you now have dead strips on all your back nine greens?

These are some of the reasons that I use VHS video tapes religiously to train and educate employees. The use of video allows me to thoroughly educate an employee first in the office, and then go through a hands-on demonstration in the field.

I have found that a good video ensures that vital points are not missed in the training process. Before any of my employees get on a piece of large equipment, a triplex, or a walking greens or tee mower, they first sit down and view the video on the assigned task and take a written test to confirm they understood the training completely.

When using video tapes, I have found it helpful to have written material in front of the employee, such as a workbook, to accompany the video. This workbook would give an employee or supervisor a space to make notes on course policies or any changes.

After the employees view the video tape, they are then asked to complete a short written examination. After this exam is graded, and I am confident the employee learned the material, their signature is required on a sign off sheet that is stored in our files.

Employees can only perform their job to your standards if they fully understand what is expected of them. A well-trained employee is able to do their job effectively and will feel rewarded by a job well done.

If employees are not thoroughly trained and told what is expected of them, the job that they perform will most likely be unacceptable. An employee who continually performs unacceptable work will probably be continually disciplined and will never feel a sense of accomplishment. The employee's morale then goes down, decreasing productivity. No training method will ever be foolproof, but I have found videos to be a valuable tool in the training process.

Darren Davis
Olde Florida GC.
Everglades Chapter

The Point System Monitors Attendance

The human resource issue has become a time-consuming process for any industry. Whether a company is large or small, the liability to administer all employment issues in a consistent manner according to the law is an absolute must.

Having over 400 employees necessitates us to have a Human Resource Department. They assist all of our managers in the following areas: hiring, orientation, benefits, policies and procedures, training and progressive discipline. Their primary concern is that all of the areas just mentioned are administered in a consistent manner. Consistency plays a huge role in not only treating all employees the same, but also setting the precedence when legal issues take place.

One of our biggest problems in the past has been attendance. The resort has adopted a point program to deal with this problem. The following is a brief overview of our policy:

The late/absent program is to record tardiness and absences. Points are assigned for each tardy or absence from scheduled work time according to the following schedule.

| Tardiness: | Points |
|---|---------------|
| Employee notified supervisor in advance | 0.5 |
| Did not notify supervisor in advance | 1 |
| Tardiness exceeds more than 1 hour after scheduled shift | 1.5 |
| Absence: | Points |
| Reported to work but left early (excludes emergencies) | 1 |
| Notified supervisor of absence 1 hour prior to scheduled shift | 2 |
| Failed to notify supervisor of absence 1 hour prior to scheduled shift | 2.5 |
| Failed to call or report for work at all, or called in to notify supervisor of tardiness and then fails to report to work | 6 |
| 2. 5-4 points within a 12-month period: | |
| Oral warning | |
| 4. 5-6 points within a 12-month period: | |
| Written warning | |
| 6. 5-8 points within a 12-month period: | |
| Suspension one day without pay | |

and final warning

Two suspensions within six months and the employee is fired. One complete month with perfect attendance results in one point subtracted from total points accumulated.

If an employee has sick time available, then no points will be assessed. Employees accrue .92 hours per week for a total of 48 hours per year. Employees do not receive sick pay during their probation period of 6 months and thus receive points during this time.

The bottom line is that if you don't have a problem with tardiness or absenteeism, you will not need a point program like the one at Grand Cypress.

Tom Alex

Grand Cypress G.C.

Central Florida Chapter

Team Building to Improve Employee Involvement

We are working on developing improved employee involvement as a team member in a professional environment.

Staff members are on a job-rotating program so that all staff members are knowledgeable in all areas of operations. Staff supervisors participate in the rotating program to supplement employee training.

There is a monthly staff meeting to keep employees informed. It is a roundtable discussion and everyone is encouraged to offer their views, problems, and solutions.

Employees are eligible for an "Employee of the Month" award given by the club. Also, for the golf operations department, there is a tardiness incentive program designed to reduce tardiness in the mornings and equipment down time.

We take the positive approach in training the staff, compliment the jobs well done, and supply as much educational and safety information as possible.

Tom Trammell, CGCS

MetroWest C.C.

Central Florida Chapter

Junior's on Deck— Training the Assistant

Most everyone involved in the game of golf now appreciates the work scope of a golf course superintendent. True, "Greenskeepers" just mowed grass, but as the business evolved more into a science, the yearning desire to just sit on a tractor and mow grass has long faded away like a memory. Nowadays, the work scope of a superintendent has become so managerial, even the assistant seldom "gets to just mow grass," and that is the point of this article:

Let's evaluate the work scope of an assistant golf course superintendent.

Most assistants are technically trained, college educated and striving ultimately to move upward and become a superintendent themselves.

There are very few career assistants. There is nothing wrong with being a career assistant. The industry should not frown upon this career niche. Yet, most assistants graduating from college are pursuing an ultimate superintendent's position.

By default, we are viewing the assistant's position as being relatively short term. Now, let's view this situation from the superintendent's perspective. We have already agreed the superintendent's daily work scope is intense. Now, couple that with the training of an assistant and the inevitable departure of that assistant. One can quickly see a managerial inefficiency that should frustrate upper management or owner of the organization.

In the last 10 years, I've had the pleasure and pride to be associated with three assistants that have ultimately moved onward to become very competent superintendents. The only drawback is — yes, I have lost three very competent assistants! Do I have the time to be a post-graduate training school — no!

I have, however, developed over the past few years, an in-house Junior/Senior Assistant training program that has proved to be management efficient, and cost effective yet rewarding to the recipient — the assistants.

Management will first ask: "Why do you have two assistants for just an 18 hole golf course?"

Let us now analyze the difference between the Junior Assistant and the Senior Assistant.

The Junior Assistant must be patient and possess all the true qualities to ultimately become a superintendent. The key word here is "patient." If they are not patient and their respective colleges instilled into them that they will or should become a superintendent within a year of graduation, then my system simply will not work for them.

So far, I have found Junior Assistants that are patient, and truly respect the total work scope of a superintendent and they want to take it gradually. In the long run, they will be exposed to so many issues that a university does not address.

Give me three to four years and I can equal their formal training with something that one can never put a price tag on — and that is on-the-job field-training."

The Junior Assistant will sit in the cat bird's seat watching everything the Senior Assistant does — good or bad. The Senior Assistant is responsible for the training of the Junior Assistant.

Obviously the superintendent is there to instruct both.

However, when Junior makes a mistake, Senior must bear some of the responsibility for the error — much like the rest of the world, it all flows down hill.

By the time people have worked through this program, they have just about seen it all: agronomics, budgets, staff management, peer pressure, and most importantly — politics. Generally, the formal training of college only addresses the first issue, agronomics, and it is already assumed that you understand the science of horticulture to get to these job opportunities.

Can you start to see how much the world has to offer and how a company can profit by having a Junior Assistant on the payroll? The employee will obviously be loyal and be far more effective than "just a regular worker on the staff."

Junior Assistants will participate in the applications of all pesticides, cultural renovation projects, and generally par-



Photo by Mike Bailey

Matt Quinn, senior assistant at Boca Rio CC, left, explains elevation details of the construction of a new ladies' tee to junior assistant Steve Jacaruso. Crew member Pierre Duuelsaint is in background.

ticipate as a key worker on the staff that involves more than just the simple task of "mowing grass." This person, however, must not consider themselves too good to hop on a mower and mow grass, when no one else is there and the job must still get done.

I have designed a work schedule where the Junior Assistant manages on Saturdays with the belief (and the hope) that little has gone wrong from just Friday afternoon and the Senior Assistant manages on Sunday so that if disease or whatever is developing, the more qualified individual of the two manages the latter day where the problems could be more severe.

Now mind you, Junior has on occasion overlooked an issue on Saturday that Senior will detect on Sunday, and let me tell you, Senior will show Junior their

mistakes, because ultimately Senior should not have allowed Junior to even allow the mistake to occur in the first place.

This style of management allows the Senior to be responsible for people in a key way. If the Junior Assistant is not working out, it will fall upon the Senior to figure out a way to make it work...or else.

Probably Senior is not trying hard enough to cooperate and put the effort out to make it happen, because we will not accept the excuse that "Junior just is not working out and I think we need to find a replacement."

This type of platoon management also creates a stronger management team during three-day holiday weekends and when the management staff goes on vacation. I am actually sitting by the pool at

Grand Cypress as I write this article with complete confidence that my assistant duo is competently managing the operation with virtually no problems.

Nothing should occur to overwhelm them, primarily because Senior has been on the payroll for nearly three years. He worked his way up the ladder from the Junior Assistant position just three months ago, yet I feel completely confident with his new Senior's position.

Recognizing the scarcity of new superintendent's positions that an assistant might actually be hired for, Senior appreciates the need to be fully competent before going out into the real world. Of course, I correct their youthful mistakes. They are only human. Once these issues become clearly recognizable, these common mistakes should not happen. When they ultimately become a superintendent these mistakes could be severe enough to actually jeopardize their first head superintendent position.

Therefore, an appreciation of the correct way to perform their job becomes priceless. It does not necessarily indicate my way is right or wrong but more so that they recognize their mistake for something that should have perhaps not occurred (mistake) or something that they now look back upon and realize they could have done it better.

The more involved both become, the more both respect they have for their jobs. The Junior begins to feel the pressure of "actually being in charge" and greatly respects what senior does and how he conduct himself. When Senior moves onward, Junior will now have more

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responsibility and he “better do it right” because he had enough time to watch from the catbird’s seat.

When it’s time for the change, you can usually view the obvious. Senior becomes complacent, everything seems too easy and “I can do it all!” Not really. I’m exaggerating. If I wait that long for their respective personalities to surface, I’ve waited too long to start pursuing a head position for Senior.

That is a key here. The superintendent must know that individual well enough to know when it’s time for him to move on.

Sometimes, jobs are simply not available and they must be patient. It’s even good to watch them pursue some opportunities on their own and feel the aggravation of the real world. As good as they might think they are, they might not be that marketable. After a few rejections, they might appreciate what management is trying to do to help with professional contacts.

When everything works out and Senior lands that new job, the individual has tremendous pride. The crew is usually complimentary and supportive of their career move. Junior then moves up to a new position, and the crew respects the process. The management switch is not a major ordeal.

All too often, the assistant superintendent’s departure can be a major blow to the department. With this concept, no one strikes out. Everyone hits a home run, and everyone comes out a winner.

Mike Bailey

Boca Rio G.C.

Palm Beach Chapter

Employee of the Month, Year Program

Last December, the Board of Governors of Boca Woods Country Club approved and initiated a program called “Employee of the Month” and “Employee of the Year” award for our full-time hourly employees.

Each month an employee is chosen as

“Employee of the Month.” He/she is nominated by their department head. Four employees are nominated each month from the four major departments in our club. The Personnel Committee reviews the recommendations of the department heads and selects the monthly winners of this award.

The department head makes their recommendations based on the employee’s attendance record, appearance, attitude, work ethic, initiative, safety awareness and record.

The award to the employee for being chosen “Employee of the Month” will be a special parking space and badge denoting the award. He/she will also receive remuneration in the amount of \$50 and a picture in the *Focus*, (Boca Woods’ monthly news letter), with the department head. When the award is given out, the crew puts the winner on a chair and he then gives a short speech which is then followed by major applause.

Each December, one employee will be chosen from the pool of monthly winners to be “Employee of the Year.” The award to the employee selected “Employee of the Year” will be a special parking space and badge denoting the award, and a remuneration in the amount of \$250.

Since the awards’ inception last January, it has really made a positive difference in attitude with the crew. They look forward each month to the new winner, hoping they will be the one.

John Gallagher

Boca Woods C.C.

Palm Beach Chapter

Managing Your Most Important Asset

Have you ever been asked, “What is the most difficult or challenging part of your job?” What would your answer be? Getting rid of those pesky mole crickets! The thin turf on No. 8 green caused by those pretty oak trees 20 yards from the green! The nematodes on the front nine fairways! Keeping up-to-date and in compliance with all the governmental regulations?

These are all great answers, but I firmly believe that managing people is the most challenging aspect of our profession or any profession. I have been a golf course superintendent for 17 years. If you compare managing the staff now versus 17 years ago, the job has gotten more complex with lawsuits resulting from wrongful terminations, harassment and discrimination charges, ADA regulations, and even from *not* hiring someone!

No matter how large your budget, how much new equipment you have, or how great the course design, if you don’t have a properly trained and motivated staff, you will have a difficult time getting the course in top playing condition. Once you have a properly trained staff, you have conquered the biggest challenge in managing the course. How can this be accomplished?

I don’t know of any secret formulas or techniques. Usually, some common sense can be very helpful. I try to use the golden rule: “Do unto others as you have them do unto you.” This practice has helped me tremendously in managing staffs at three different country clubs.

Building a good staff can be broken down into the following areas: Hiring, training, motivation and morale, and discipline.

1) **Hiring:** The hiring process is probably the most important step because if you get the right person for the job, the other areas of staff management should be easier. When needing to hire new staff, I have found the best source for applicants comes from your present staff.

They usually know someone who is looking for a job. They will usually give you prospects they want to work with and meet your criteria. Other methods include newspaper ads, employment services and walk-in applicants.

No matter how you get your applicants, it is imperative that you do a good job in the interview process. By asking the right questions, you can narrow down the list of prospects. Then by using your judgment based on the interview results you can make a more intelligent final decision.

Drug testing and background checks are also becoming integral parts of the hiring process. They can help weed out

potential problems and get better people on board. The bottom line on hiring is to develop and use good interviewing and screening techniques to help find the right people for the job.

2) **Training.** Training the new employee is probably the next most important process. The amount of training required will depend on the type of work and the person's prior experience in similar jobs. It is wise to have written job descriptions for each job your staff performs. This gives the new employee a visible description of what each job entails. It is then up to you or a designated trainer to instruct the new employee on how to perform the job to the department's expectations. Be sure to explain all safety, right-to-know, hazard communication, and any other programs that are in effect for your staff.

3) **Motivation/morale.** Once you get the right person hired and trained, you must be able to motivate him and maintain good employee morale. This is probably the hardest thing to do because what works for one person may not work for another. It is important to find out what makes each employee tick so you can coach them to perform to the best of their abilities.

One of the best morale boosters is to praise your staff members for good work both orally and in writing. Cook-outs, parties, and golf outings at other clubs in your area are also morale boosters.

You can do a simple survey of other clubs to compare wages and benefits. It is a good idea to promote from within whenever possible. Internal promotions encourage employees by rewarding good

One of the best morale boosters is to praise your staff members for good work both orally and in writing. Cook-outs, parties, and golf outings at other clubs in your area are also morale boosters.

work, and giving everyone an incentive to progress and accomplish more.

You must administer progressive and consistent discipline to all staff members. Inconsistent discipline can cause severe morale problems. Sometimes, just being willing to listen to your staff can work wonders with your staff.

According to many surveys, one of the most common complaint among workers is that nobody listens to them! We just completed an employee survey at our company. We got some very interesting answers. Some were predictable and some were surprising!

4) **Discipline.** Sooner or later you will have to discipline someone on your staff. Good discipline requires the right punishment, criticism, and guidance that will help prevent future mistakes and infractions. Proper reprimanding tips include:

◆ Reprimand an individual in private, never in front of others.

◆ Never reprimand when tempers are high. You might say something you may later regret.

◆ Listen to the employee's point of view. There are always two sides to everything.

◆ Try to end on a high note with encouragement.

◆ Document all reprimands. In labor disputes, the burden of proof is on the employer!

I have touched on a few items that I consider to be the keys to sound staff management. As you manage your golf course, don't forget to have a some "preventative maintenance" programs for your staff just like you do for the turf and the equipment.

As I said, "People are your most important asset!"

Hal Richburg, CGCS

Heathrow CC

Central Florida Chapter

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What does it mean?

Low Input Sustainable Turfgrass Management

The challenge is to keep producing high quality playing surfaces using less resources

BY GARY GRIGG, CGCS

Golf course management is an ever-changing, evolving process. The process is driven by a variety of factors that seem to change from time to time. As times change, new technologies are developed to adapt to the new management concepts.

Today the new concepts of golf course management are being driven by a number of forces. Two of these forces are our dwindling resources and our need to be environmentally responsible. At the same time there is a higher demand for quality playing surfaces than ever before.

The idea that "less is better" is receiving a lot of attention these days from the green industry in general and many golf course superintendents. However, the demand for quality is not going to go down and may even go higher. The challenge is to keep producing high quality playing surfaces using less resources.

The major driving force behind pollution and environmental topics is government regulations and public perception. Public relations alone is an important reason to emphasize pollution prevention.

We are all familiar with the term IPM, Integrated Pest Management, or Intelligent Plant Management, if you prefer. I heard of a term used in agriculture called LISA. It stands for, Low Input Sustainable Agriculture. What is the difference? IPM has come to mean in general the growing of turfgrass by proper care and culture to prevent pest and disease problems. The dictionary defines the verb sustain as, "to keep going." I define sustain for our purpose as to "keep going without excess." The characteristics of low input sustainable management provides simultaneous environmental protection. Let's take a look at some of those characteristics.

Plant Selection

Low input management begins with proper plant selection. Select those species or cultivars that can be maintained with the least amount of water, fertilizer and pesticides.

Resist the temptation to grow cool-season grasses in a hot climate and warm-season grasses in a cool-season climate. Do a lot of research on the best adapted turfgrass in your area.

Low Input works when you have a healthy plant that is not under stress. The healthier the plant is the better it will withstand invasion by all types of parasitic organisms.

Plant breeders continue to work towards producing new and better varieties that are more drought tolerant, use less water, use less nitrogen and are more salt tolerant and better adapted to utilizing waste water.

One of the most notable success stories are the new buffalograss varieties developed by Dr. Milton Engelke of Texas A & M and Dr. Terry Rirdon of the University of Nebraska.

Improvements of zoysiagrass by several researchers using selective breeding have made this species much more desirable. It shows great promise in reducing nitrogen use and seems to be salt tolerant and thus can be used with effluent water in areas where potable water is restricted.

As the need for more and more low input varieties arises, we are bound to see more work by scientists in the area of finding alternative species that require low input to produce an acceptable turf.

Kilpatrick Turf Equipment

Kilpatrick Turf Equipment is the new full service distributor of Jacobsen products for South Florida. The Kilpatrick Family has been active in the golf course industry as the owner of Boynton Pump & Irrigation Supply, The Rain Bird golf distributor for South Florida. Kilpatrick Turf Equipment will be locally owned and operated and will be part of one of the largest Golf and Turf distribution companies in the country. We are committed to providing you with the highest level of service and support.

Kilpatrick Turf Equipment has assembled the best turfgrass team in South Florida! Headed by Garry Callahan as Vice President & General Manager, we have an excellent customer service, support and sales team. In addition, Tim Kilpatrick will be active in the operations of Kilpatrick Turf Equipment.

Kilpatrick Turf Equipment will have an East Coast and West Coast Facility to better service your equipment needs. We're going to establish the first Service Guarantee in the industry. We're committed to providing you with competitive pricing on new equipment; the highest level of support from our factory trained mechanics; and the highest service level in the industry...guaranteed!

We would welcome the opportunity to work with you on your equipment needs.

Buffalograss, sheep fescue, tall fescue, colonial bentgrass, redtop, kentucky bluegrass, hard fescue and zoysia

Dr. Ken Diesburg of Southern Illinois University is working with a committee to take on the task of identifying functional turf for low input situations. He is looking at providing acceptable uniformity for low-management course roughs, right-of-way acreage and parks and recreation.

His work is to look at buffalograss, sheep fescue, tall fescue, colonial bentgrass, redtop, kentucky bluegrass, hard fescue and zoysia and assess their requirements for establishment and maintenance.

These types of alternative grasses are a long way from replacing the quality turf that is required to provide fine playing conditions. While waiting for these grasses to be improved we must still work at producing our current high quality turfgrasses with less input.

Water use

Use only enough water to sustain the health and vigor of the turf. Over-watering leads to many problems with nutrient uptake, fungus diseases and shallow rooting. Too much water can block or reduce the soil atmosphere. This will cause the aerobic biological system to become unbalanced in relationship with the anaerobic system. To refrain from over watering will encourage good soil structure and a healthy aerobic system. Treated sewage, or effluent water should be used whenever possible. Golf courses have been found to be a good treatment site for effluent water.

Soil Organic Matter

John Doyle, turfgrass specialist of the

Ringer Corporation, in his excellent article "Soil Amendments and Biological Control" *Golf Course Management* March, 1991 makes several excellent statements. Among them: "Changes in disease severity can be distinctly followed as soil types change from sandy to clay loam." He states that increase in organic matter decreases disease occurrence. He concludes the article: "There are materials now available that can be effectively incorporated into a management program that can reduce fungicide application frequency or enhance the effectiveness of existing fungicide programs."

It is clear from last year's turf show and from the number of organic salesmen that are calling on me that there is plenty to choose from in companies selling humus and humic acid materials. Many claims are being made. Only you can evaluate them in your program. Keep an open mind.

Soil requirements

Keep the soil pH near neutral as some nutrients will not uptake under alkaline conditions and others will not uptake under acidic conditions. Work on your soil structure with many aerations. Compacted soil demonstrates the following:

- * Reduced water penetration
- * Reduced water holding capacity
- * Reduced root growth
- * Low Oxygen levels
- * Reduced nutrient uptake
- * Increased chemical build-up
- * Reduced fertilizer efficiency
- * Loss of organic matter

Compacted or wet soils are low in oxygen and produce anaerobic systems.

Anaerobic systems do not break the lignin in the soil to humus. Anaerobic systems produce harmful chemicals to the soil and plant environment, among those chemicals are butanol, methanol, formaldehyde, cyanide and acetic acid. Anaerobic systems encourage soil borne diseases and soil pests.

A productive soil that has not been compacted nor waterlogged produces aerobic micro-organisms that make nutrients available to the turfgrass. Therefore, the plants can be sustained without the presence of large quantities of fertilizer, which can be expensive and may wind up in the environment.

Nutritional needs

Low Input Management calls for both soil testing and plant tissue analysis.

Not always do the ratios of nutrients in the soil tests correspond to the ratio in the tissue analysis. Soils are tested for available nutrients. The only way to tell for sure if it is available to your turf under your particular set of circumstances is to tissue test.

For example: Soil tests may show an adequate phosphate level in the soil test but the tissue test may show inadequate phosphate level in the tissue. The low test could be due to wet soils or soil low in pH.

Excessive nitrogen in the tissue can affect the uptake of potassium, sulfur, magnesium and calcium. Often these nutrients can become more available simply by reducing the nitrogen level in the tissue. You cannot tell the nitrogen level of the tissue from a soil test.

Low Input Management calls for the

application of only those nutrients that the tests show are needed. For example, if your tissue test showed you deficient in potassium, then potassium only needs to be applied to the turf. Don't use a full mixed analysis fertilizer to cure a single nutrient problem.

With the advent of Near Infrared reflected light tissue testing machines coupled with a computer, a superintendent can do his own tissue testing in his own shop, or he can select a good laboratory to do his work on a regular basis.

Recently more and more foliar for-

popular in the southwest desert regions in the winter. In the winter when golf is in peak season, growth can be limited by the cool night temperatures. The cool nights limit the uptake of nutrients from the soil and foliars are very efficient. In Florida, many superintendents also inject foliars through the irrigation system.

We need more research on turfgrass to correlate tissue levels and concentration of nutrients with plant health. Is it possible to correct turfgrass disease by certain nutritional concentration? Consider this:

.40% Mg and .40%S. Ellsworth states the calcium is the hardest one to get to those levels but combined with proper potassium is the essential one in increasing resistance to disease. He also finds that silica, although not an essential element, increases the strength and rigidity of plant cells, tends to reduce wilt during the initial stages of drought and increases resistance to some diseases.

All it takes to get started on the path to using less is to look at your program to see where you can begin to cut back. It may be pesticides, water or fertilizer. It

Alternative grasses are a long way from replacing the quality turf that is required to provide fine playing conditions

mulations of nutrients are showing up at our trade shows and in media advertising. Foliar sprays have a rightful place with Low Input Management. Not only can all plants absorb nutrients through the roots, but also through the foliage.

Foliars can produce quick, visible results and can increase the effectiveness of fertilizer applications to the soil, reducing total amounts of fertilizer applied.

Years ago Dr. H. B. Tukey of Michigan State University tested foliar applications of nutrients. In an attempt to evaluate the relative efficiency of foliar applications of nutrients and soil applications using radio-isotopes as tracers in the nutrients.

He concluded: "When we apply material to the leaves in soluble forms, as much as 95% of what is applied may be used by the plant. If we apply similar amounts to the soil, we find only about 10% of it used by the plants."

Foliar nutrients have a place in turfgrass management. It seems to be very

* Black-heart in celery is prevented by calcium sprays.

* Rosette of peaches is prevented by foliar zinc solutions.

* Foliar application of Urea improves fruit set of apples.

* Magnesium sprays help with fruit development in tomatoes.

* We know that potassium can aid in disease resistance in many species of plants.

* Silica sprays are used by rice farmers in the south to prevent lodging.

Dr. Robert Ellsworth of Bio Humanetics Corp. in Chandler, Ariz. has been experimenting with varying ratios of all nutrients in plant tissue. He finds the grasses healthiest when he achieves the ratio of 10N-1P-8K-3Ca-1Mg-1S with all the minors present at their optimum levels in parts per million.

If you find from tissue testing that you like your greens at 4%N, then your analysis should show .40%P 3.2%K 1.2%Ca

may be all three.

See how far you can go without reducing your desired quality. Soil and tissue tests are the maps to show you how to get started. Cut your water use a little at a time to find the minimum you need to produce the quality you desire.

Look at finding ways to sample pest populations and pick a level that is the maximum threshold you can live with. Consider getting off preventive programs and on to knowledge-based curative programs. You will find economical benefits as well as environmental rewards.

I am convinced that reduced usage of nearly everything we apply to our turf will be widely used in the decade before us. That means improved efficiency in every aspect. It also means that new researchers with fresh ideas will come forward to meet the challenge. That challenge is to keep producing the expected flawless golf courses — using less.



Photo by Joel Jackson

Mowing trials at the IFAS Research Station in Bartow indicated that Ecoturf performed best mowed at 1.5 inches every four weeks.

How does dark emerald green foliage

BY JOEL JACKSON, CGCS

That's right! Peanut turfgrass! I know it sounds weird. If you're looking for a low-growing ground cover for open areas, steep slopes, canal banks, tee slopes, and other hard-to-manage out-of-play areas, I have a plant for you!

How does dark emerald green foliage with bright yellow flowers sound? Want more flowers for a special occasion? Mow it a couple of weeks before the event.

Irrigation? None required, but it wouldn't mind a drink during a drought just like any living thing!

Fertilizer? How about a couple of pounds of SulPoMag around May. Nitrogen? It makes its own. It is a legume.

Pesticides? Maybe a little Fusilade for grass encroachment if necessary. Others? Well, it seems

that since 1936, when it was brought to Florida from Brazil, no insect, disease or nematode has taken a liking to it!

So, what are the drawbacks? Well, right now, you can't buy it commercially. It is slow to establish from sprigs, but it can be sodded!

Cold tolerance? According to the Polk County agronomists that have been working with the peanut for many years, it reacts similar to Tifway 419, so it is not an evergreen if it gets really cold! However, it is a survivor! It develops a tremendous rhizome system which makes it great for erosion control.

It isn't perfect. Nothing is! But, it bears watching as potential lawn cover requiring low management inputs as discussed in Gary Grigg's article elsewhere in this magazine.

On Aug. 18, the Polk County Extension Office

Found a peanut! Found A peanut!