

The superintendent and architect should discuss the maintenance capabilities, types of players and vision for the course at hand. Architects work within the maintenance guidelines and support superintendents with a thorough understanding of the maintenance implications of a design.

course's needs based on a few basic, but important factors:

- Available maintenance budget.
- Maintenance staff.
- Maintenance equipment.

The superintendent's input is essential. All aspects of design affect the maintenance of a golf course, and the superintendent can provide the course architect with vital information to make the project a success.

Bunkers

The number and shape or style of bunkers on the course can have a dramatic effect on maintenance. The architect will know from discussions with the superintendent if the maintenance budget will provide for the proper equipment and manpower required to adequately maintain the golf course.

Bunkers with intricate fingers and capes create a character, but require hard work to maintain them properly. This is fine — provided the budget allows for it.

More open-shaped bunkers with shallow faces are easier to maintain with riding equipment, and require significantly less work, but the aesthetic value is poor. Open shaped bunkers with deeper and steeper faces tend to add more drama to the course, but again, maintenance needs increase with the steeper slopes. The steeper slopes don't hold sand very well and must be repaired after heavy rains. On the upside, some of the newer maintenance equipment on the market today is excellent for maintaining steeper slopes.

Small pot bunkers can give a course

an interesting Scottish links character, but require hand raking and cutting, which the maintenance budget must account for.

Waste bunkers and waste areas provide contrast to manicured fairways, and in some cases can be low-maintenance areas. However, these waste areas can also be quite deceiving in terms of maintenance — erosion, stone picking, raking and trimming of negative vegetation can be labor-intensive maintenance items.

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Drainage is critical to bunker maintenance. Bunkers can deteriorate significantly if proper sub-drainage is not provided beneath the bunker floor. Not only is sub-drainage important, but surface drainage around the bunker is also critical. Surrounding surface area drainage must be directed away from or around the bunker. This minimizes washouts and subsoil erosion.

Tees

Tees may not always receive a great deal of attention from an aesthetic standpoint, but they require a great deal of attention from the maintenance staff. Playability is a critical design aspect for the architect, and the use of multiple tees at various yardages and angles to the line of play can dramatically affect playability for golfers of different abilities.

Tees are often the most difficult features to construct properly, because they must be as level as possible and drain properly at the same time. Generally, architects try to slope tees from front to back at a one-percent slope. The exception to this are tees built into hills that are sloped forward for better drainage and visibility of the target area.

Tees come in all shapes and sizes. The larger the surface area, the easier it is to evenly distribute wear on the tees. Tees usually vary from 7,500 sq. ft. to more than 10,000 sq. ft. If the architect uses multiple tees, it is imperative that the middle tees be sized larger than the front and back tees, as this is where the majority of play will occur.

Again, surface drainage on and around the tees is crucial to the health of the turf. This is especially true of hillside tees where surface drainage should be guided around the tees through diversion swales.

As with greens located in shaded locations, it is important to adequately clear around tee areas to provide proper sunlight exposure, and the superintendent should work with the architect to ensure this is provided for during construction.

On tees constructed on significant fill, the contractor should compact the fill properly and place it in small lifts.

But it is the responsibility of both the architect and the superintendent to inform and sometimes educate the owner on how design and maintenance affect each other, as well as the initial and future costs of the project.

Otherwise, settlement can occur, creating future drainage problems.

Fairways

Like tees, fairways can dramatically affect the playability of a course. Fairway width generally ranges from 30 to 50 yards, depending on the length of the hole and other considerations. Again, drainage is key to the fairway's maintenance needs. All areas of the fairway and rough should be sloped to provide appropriate drainage. On steeper fairways or on fairways with significant undulation, it is often important to capture surface water in smaller drainage areas with a catch-basin, and send it underground in a pipe to prevent erosion.

Fairway contours should flow smoothly and allow for easy mowing — eliminating areas where there is a danger of scalping high points, rutting on slopes that are too steep or spinning on turns that are too sharp. The architect and superintendent should discuss fairway acreage to determine requirements for equipment, fertilizer budgets and other maintenance expenses.

Cart Paths

Cart paths are important for controlling traffic and wear patterns on the golf

course, and this is where the superintendent should provide substantial input. Cart paths not only allow for movement of golfers, they also provide excellent transport routes for maintenance staff and equipment. Strategically placed cart paths will limit turf damage incurred from maintenance equipment. It is important that pathway access all high traffic areas, particularly around greens and tees.

Get Involved Early

Devising a course that maximizes beauty and playability while minimizing maintenance is never easy. Together, a golf course superintendent and architect will be able to draw upon their own experiences to help the project avoid pitfalls. Remember, the well-trained golf course architect has been through the process many times — and knowing the maintenance budget, amount of maintenance staff, available equipment and other important information allows the architect to design a course that meets the needs of the players and the superintendent.

The architect and superintendent need to work together to satisfy the owners needs. If owner wants a dramatic course, then the architect designs it and the superintendent maintains it. But it is the responsibility of both the architect and the superintendent to inform and sometimes educate the owner on how design and maintenance affect each other, as well as the initial and future costs of the project.

Bob Lohmann is President of the American Society of Golf Course Architects. The Society publishes a wealth of information about golf course design, including "Remodeling Your Golf course," which details how to incorporate maintenance needs into a remodeling master plan. To obtain a free copy of the brochure, send a self-addressed, business-size envelope to the American Society of Golf Course Architects, 221 N. LaSalle St., Chicago, IL 60601. Phone: 312-372-7090. Fax: 312-372-6160. Additional information can be found at the organization's web site at <http://www.golfdesign.org>.

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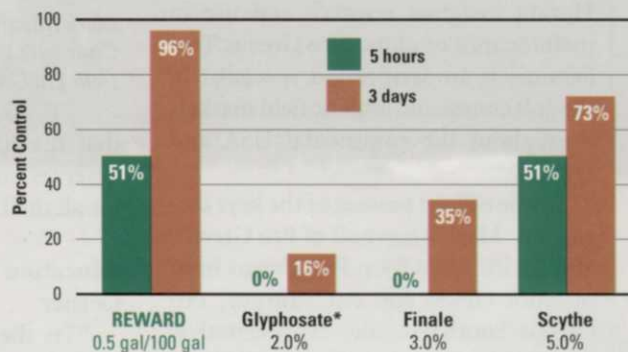


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Tidings from the TC

UF/IFAS-Industry Ties Keep Growing

Pro Greens Donates Deep Drill Aerification System to UF FLREC

BY JOHN CISAR, PH.D.

IFAS Turf Coordinator

Like the song in the Sesame Street video "Elmo Saves Christmas" (remember I have a 2-year old at home so I get to watch the video every night) It's Christmas Again in South Florida.

On Jan. 7, Santa and his helpers from Pro Greens Turf Services of Safety Harbor stopped by at the Ft. Lauderdale REC to deliver an FM-60 deep drill aerification machine for University of Florida turfgrass research and use in maintenance of plots. Pro Greens Turf Services is an aerification specialist in the golf course and athletic field markets throughout the continental USA and Hawaii.

At the official passing of the keys ceremony, Mark Atherholt of Pro Greens, along with Tim Olsey, Pro Greens head of work crews, and Pat Kearney, Pro Greens Southeast sales representative, presented me (on behalf of the University of Florida) with the FM-60. The value of the gift was approximated at \$35,000. This great gift will go a long way in helping us maintain turf and set up new directions for research.

As stated in their press release on the subject: Pro Greens makes this donation in the spirit of educating and assisting research efforts in the turfgrass industry and to honor all golf course superintendents and sports turf groundskeepers that devote their livelihood to "Keep America Playing."

This equipment donation is very much appreciated by the turfgrass team at the University of Florida. We have been blessed with a range of equipment donations over the past few years that have really had a significant positive impact on our plot work. It bears repeating



Mark Atherholt (left) of Pro Greens Turf Services presents IFAS Turf Coordinator, Dr. John Cisar with the keys to a totally refurbished FM-60 Deep Drill Aerifying Machine. Also on hand from Pro Greens are (l-r) Pat Kearney and Tim Olsey. Photo courtesy of Pro Greens.

that the turfgrass industry of Florida deserves our continual heartfelt thanks for all their help.

Education Events Right Around the Corner

"Tis the season" also for seminars, field days and workshops. The FTGA held its highly popular landscape management seminars throughout Florida in January. Held in locations throughout the state, seminars were jam-packed with Florida turf professionals. This year for the first time, the seminar series carried over to the panhandle and more than 140 attendees were in the auditorium.

On March 11, the 12th Annual South Florida Expo at the Ft. Lauderdale REC attracted turf breeders and developers of the new ultradwarfs to discuss adaptation to Florida conditions and address questions about the new grasses. Drs. Wayne Hanna and Al Dudeck, and representatives from Thomas Bros. Turf and Coastal Turf were on hand. Also, keynote speaker Dr. Will Hudson, entomologist at the University of Georgia,

provided an up-to-the minute report on the new uses of subsurface pesticide injection systems for turf and mole cricket control research. On March 18, Dr. Al Dudeck also hosted his annual Overseed Field Day in Gainesville.

Regarding upcoming events, on April 21, the Everglades chapter is hosting a turfgrass seminar in Ft. Myers. Contact Matt Taylor at 941-495-0073 for information. The 1999 USGA Regional Seminars are scheduled for April 26 in Orlando and April 28 in West Palm Beach. Contact John Foy at 561-546-2620. The tentative dates for the University of Florida Turfgrass Field Day is 23 and 24 June 1999. This year for the first time, the overall program field day will be held in Milton at the new UF turfgrass field plots. Contact Dr. Bryan Unruh at 850-983-2632 for further information on dates and directions.

Hellos and Goodbyes

Hot off the presses: I just received an email from Terril Nell that Laurie Trenholm has accepted the turfgrass research/extension position at the Univer-



Laurie Trenholm
(1995 file photo)

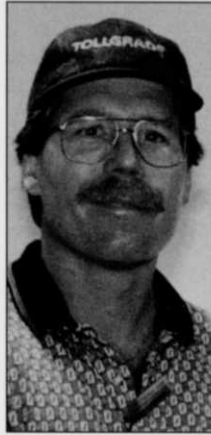
sity of Florida's Gainesville campus effective Aug. 1. Our sincere congratulations to Laurie.

Laurie received her B.S. at the University of Florida. She was an undergraduate student at the University's FLREC site.

Laurie received her M.S. degree from UF working with Dr. Al Dudeck, her major adviser, on FloraDwarf nutrition. She is completing her Ph.D. at the University of Georgia, working with major advisor Dr. Ronnie Duncan on new turf-type varieties of seashore *paspalum* grasses. Laurie was the first recipient of the Granville C. Horn Graduate Scholarship from the FTGA. Clearly, that prestigious scholarship is starting to bear fruit.

Drs. Robin Giblin-Davis, Monica Elliott, and Russell Nagata are on sabbatical leave in 1999. Robin just left for "down under" Australia, Monica is literally "chilling out" in Montana, and Russell is "surfing" for new grasses in Hawaii.

Marcus Prevatte, the long-time groundskeeper of the USGA green at the Ft. Lauderdale REC, announced that he would be leaving for an assistant superintendent's position at Indian Creek. Congratulations and best of luck to Marcus on his new career. Many thanks from everyone at the FLREC are



Marcus Prevatte
(1996 file photo)

extended to Marcus for his tireless commitment to the Otto Schmeisser/FGCSA Research Green and UF research in general.

Passing a milepost

This spring marks the first year anniversary of my appointment to the TC position. What a whirlwind year it has been. It's a great point in time to reflect on what has occurred during the past 12 months and look to where we are going.

One of the most difficult things to do objectively is evaluate day-to-day change from the inside. For example, looking in the mirror, to me, I always look the same and I just about always feel the same. Yet, if I look at a snapshot from one year ago or 10, wow, what a difference! The same thing holds with this job. I don't easily see the change from the inside and sometimes I get frustrated with the pace of change in my mind. But then once in a while it hits home just how much change has gone on.

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1999 Florida Plants of the Year - Part 3

Editors Note: Third in a three part series showing the Florida Nursery Growers 1999 selections of underutilized but proven Florida plant material.

Common Name: Cross Vine

Botanical Name: *Bignonia capreolata*

Hardiness: Zones 6 - 9

Mature Height X Spread: Climbs 30 feet

Classification: Vine

Landscape Use: Pergola, trellis

Characteristics: Flowers orange to orange red

New hybrids are expanding in this under-used vine whose main flowering comes in late spring with occasional flowers through the summer. Growth is rapid and it will cling to a rough surface or twine as it climbs to the top of its support. Moist, rich soils suit it best, but growth is good even under less-than-ideal conditions. As a native is well adapted to the vagaries of our climate. Cool weather brings a bronzing of the leaves, but they will remain on the plant in most years.



Common Name: Lake Tresca Ligustrum

Botanical Name: *Ligustrum japonicum* 'Lake Tresca'

Hardiness: Zones 7-10

Mature Height X Spread: 10' x 10'

Classification: Shrub

Landscape Use: Low hedges or a fine specimen plant

Characteristics: Very compact growth

A superior cultivar of the common landscape and hedging shrub, selected many years ago in a Florida nursery but only now becoming well known. Growth is compact and moderately slow, making a beautiful specimen when mature. Tight spires of fragrant, pale flowers are produced in spring and summer.



Common Name: Chartreuse Sweet Potato

Botanical Name: *Ipomoea batatas* 'Margarita'

Hardiness: Zones 9-11

Mature Height X Spread: Trailing, about 9" tall, vines 6 - 8' long

Classification: Groundcover or basket plant

Landscape Use: Groundcover in light shade

Characteristics: Chartreuse green leaves

An exciting leaf color when used among more ordinary plants. Particularly effective in mixed baskets with purple-leaved plants or those with deep blue flowers. Light shade is best to avoid leaf burn, but plants getting plenty of water can take high light levels and even full sun once they are accustomed to it.



During the past year I have been going to different golf course chapters to promote our program. Recently, I gave a talk at a local chapter meeting on the Florida Gulf coast. One of the superintendents told me he heard me give an overview of the program six months earlier and that he was impressed by the number of new things going on at UF and how things had changed since my previous speech about our program. That really caught my attention. Frankly, I was pleasantly surprised because that means people on the outside are interested in what's going on, they are communicating back to me, and people are observing the difference.

New in the Turf program

What are some of the great things going on? Here's a sample of four:

First, there are four new turf faculty positions at UF that are either being filled right now or will be advertised this spring 1999. Laurie Trenholm has accepted the offer to fill the turf position vacated when Bert McCarty left for Clemson University. The University is advertising for a turf entomologist for Ft. Lauderdale. In the near future we will be seeking a soil scientist (Everglades REC) with turf in the job description and a turf pathologist (Gainesville site). These positions fill gaps that have occurred either through attrition or anticipated retirements and expanded programs. These new positions will strengthen many of our program areas and ultimately enable us to provide better service.

Second, there will be more information from UF in readily accessible forms. Back by popular demand, we look forward to renewing our annual turf research and program report. This publication will contain a summary of all UF research projects, education efforts, and extension activities.

Terril Nell, the UF Environmental Horticulture Dept. chair, has been circulating a huge list of active projects by the UF turf team. Look for updates on those projects in the Annual Turf Report. In addition, extension specialists

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led by Bryan Unruh and additional turf research scientists are busy updating the Florida Turf Pest Control Guide and Best Management Practices for Florida Golf Courses book. The latter two guides should be available to the public by early spring.

Third, Field Days are off and running with the latest information and technology. This year the South Florida Expo brought together under one roof many of the developers of the new ultradwarf bermudagrasses to discuss management. Al Dudeck hosted his highly popular Overseed Field Day March 18. Jot down on your calendar June 25-26 for the IFAS Turfgrass Field Day. For the first time, the overall turf program field day will be held in Milton to help promote all the great things going on at our new panhandle location.

Fourth and maybe most important is the enhanced partnership between the Florida turfgrass industry and UF. Through your support, the ties between the turf industry and UF are getting stronger every day. A lot of the credit goes to those unsung heroes who are helping to keep the lines of communication open and who are forging more interaction. Two great examples are Don Benham, FTGA director for pub-

lic relations and Joel Jackson, FGCSA director of communications. Both Don and Joel are doing yeoman-like work keeping everyone up to date, acting as ambassadors of good will and advocates, and being good listeners. These two guys have really made life a lot easier for me. Thanks Don and Joel for everything you do.

We want to continue to improve our customer service and one of the best ways is through communication. Please keep inviting us to your chapter meetings and offering us the opportunity to speak about our work. Tell us what you think of our program, tell us what we need to be doing, and tell us how we can help. We appreciate your



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Florida Golf Alliance Course Owners Help Conduct Impact Survey

Jack Brennan, treasurer for the Florida Golf Alliance and head of Paladin Golf Marketing, reports that the Florida Chapter of the Golf Course Owners Association is taking an active role in helping to conduct the golf impact survey.

Mike Jamison, executive director of the FGCOA, will help coordinate the cover letter to course owners as a second round of surveys is being sent out to gather more information. Jamison is collecting the logos of all participating associations to go the letter to give more

credibility and appeal to the survey.

Since the surveys may contain sensitive financial information, they will be returned to the FGCOA office and Jamison will track the responses and delete course identification. He will also assign survey numbers and symbols as requested by Dr. Joe Cronin to fit into the survey matrix. This should provide course owners the comfort of knowing that the only association with access to their financial identity is their own association.

FGA board members will be given a list of courses to contact to alert golf course owners and officials to be on the lookout for the second survey and ask them to participate so the survey will be as accurate as possible and carry as much weight as possible when we discuss issues at local and state levels.

All Florida superintendents are urged to mention that this survey is taking place and to suggest his or her club participate to make it as meaningful as possible so we can establish credible lever-

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