

# Top-Quality Bermudagrass. Excellent Cold-Tolerance.



**To Order Your Certified TifSport Sod or Sprigs  
Contact One of These Licensed TifSport Growers**

**Pike Creek Turf, Inc.** Adel GA 800 232-7453 **Super Sod** Fort Valley GA 800 535-1320  
**South Florida Grassing** Hobe Sound FL 772 546-4191 **Super Sod** Orangeburg SC 800 255-0928  
**North Georgia Turf, Inc.** Whitesburg GA 800 273-8608

[www.tifsport.com](http://www.tifsport.com)



Wooden posts and barricades are also used to alter traffic patterns. Photo by Joel Jackson.

comments on who, how and what they do for traffic control on their courses.

### Traffic Control Questionnaire

**1. Q: Who takes care of the primary traffic control on your course?**

A. Taylor: The set-up person has the initial responsibility, but ultimately it falls onto the assistant superintendent to make sure it happens each day

A. Walker: The assistant superintendent and superintendent take care of adjusting traffic-control measures during their daily rounds.

A. Powell: I will make the initial set-up and my two crew members that change the cups and tee markers will maintain and rotate our stakes and ropes.

A. Pantaleo: I take care of the traffic control during my daily inspection of the course.



Sweeping curves in a cart path are very aesthetic looking but drivers cut them short and create worn turf and potholes. Photo by Joel Jackson.

**2. Q: How long does it take to take care of moving setting up traffic control measures per day?**

A: Taylor: Besides being part of the set-up man's rotation, on a given day we may have three rough units and two fairway units mowing. Each guy may spend an extra half hour moving things around.



Without traffic control golfers tend to all follow the same path to the fairway causing severe wear damage. Photo by Joel Jackson.

A. Walker: It takes two people around two hours per week.

A. Powell: We will spend two manhours per day during the winter season. We have no need for traffic control in the summer.

A. Pantaleo: Maybe two hours total and that's generally once a week.

**3. Q: What means of communications (pro shop, permanent course condition signage, special announcements or other tools) are used to aid traffic control?**

A. Taylor: We post signs on the first and tenth tees that read: "Cart Path Only", "90 Degrees", "Summer Rules", etc. We also post any special rules in a clear plastic sleeve on the golf carts.

A. Walker: The pro shop staff advises the guests the



To avoid future potholes many courses add pavement to the curves. Photo by Joel Jackson.

cart conditions at check-in and we use directional signs along the paths.

A. Powell: All of the above, but rope is the only really effective way to keep traffic where you want it. Golfers don't think about potential cart damage once they start playing.



Wear from foot traffic can also be a problem when access points to a green are limited. Photo by Joel Jackson.

A. Pantaleo: We paint a white line to direct them away from the green slopes and refresh it once a week.

**4. Q: What is your primary traffic-control device (barriers, posts, stake & rope, other)?**

A. Taylor: We also use moveable control devices along cart paths. Primarily we use rope stakes, green recycled plastic (of course) stakes with green and white rope. We also use movable (4x4) wooden barricades painted green. The metal spikes that hold them in place often bend on the shallow limestone rock in the soil. In addition, when we place two white balls on the edge of the fairway cut, the members know that they are to return to the path when they see these markers.

A. Walker: We rely on the directional signs and our



A cobblestone treatment is used to encourage carts to stay on the path at Heritage Palms. Photo by Joel Jackson.

course rangers to monitor the traffic flow.

A. Powell: Again all of the above. I have been using short 1-foot-tall stakes to guard cart path curves and turns.

A. Pantaleo: We use directional signs and white lines painted on the turf.



Many courses use permanent signs at the 1st and 10th tees to alert golfers to daily traffic rules and conditions. Photo by Joel Jackson.

**5. Q: Under what circumstances do you impose cart path only?**

A: Depending on the time of year, if we get a rain shower during the primary play season (winter and spring) and it is close to a major tournament, this will trigger "Cart Path Only" for a day or a few hours. Usually during the summer months after a 2- to 3-inch rain, it is a no-brainer.

A. Walker: Only after a really heavy rain; it isn't that often.

A. Powell: During tournaments that can't be

rescheduled. If it's that wet, we will close the course.

A. Pantaleo: Only if we have standing water visible in the fairways.

**6. Q: If you allow carts on turf but with limitations, do you ask them to stay in roughs or fairways? This is not a trick question.**

A. Taylor: Neither. It is 90 degree or cart paths and they don't follow the 90-degree rule. One of my standing jokes at Green Committee meetings is asking what their perception of where the 90 degrees is... to the cart path or the green?

A. Walker: We ask them to keep the carts in the roughs.

A. Powell: "Rough Only"

A. Pantaleo: When it's really wet we ask them to stay in the roughs.

**7. Q: Do you do extra aerification of high-traffic areas or are they on the same frequency as the rest of the turf (fairways, roughs, walk offs, etc)**

A. Taylor: Yes, during the season we will open them up with 3/4-inch tines and fill with sand and 6-2-0, usually in January and then again in early March.

We will also spike them and pitch fork them as needed.

A. Walker: Only during regular seasonal aerifications.

A. Powell: We aerate the cart path ends and drive-off areas once per month during the winter season.

A. Pantaleo: We do two extra aerifications per year in the high-traffic areas.

**Bonus: Let us know any unique way you manage high traffic areas — crumb rubber, ceramics, extra top dressing, how much extra aerification, with what? Wetting agents, pre-emergents, anything else?**

A. Taylor: Same as above we try to keep these areas loose and growing. We have one really large tournament in mid-March. Three weeks before it happens we go hog wild with rope stakes, traffic control etc. The days of the three-day event we take down all traffic control devices. After the event they go back out. I think it helps before and it certainly looks better during the event.

A. Walker: Sometimes in bad spots we'll dress it up with wood chips. The bottom line is we only have to do traffic control between Thanksgiving and Easter. The rest of the time the turf can keep up with the traffic stress.

A. Powell: No silver bullets. We just keep moving those ropes.

A. Pantaleo: We use solid tines to aerify the traffic areas to minimize any mess or clean up.

# There When You Need Us



## With Solutions That Work

Cleary's Solutions Programs combine proven products and new, cutting-edge chemistry along with the know-how and experience to help solve your turfgrass disease problems.

For more information about Cleary's **Solutions Programs** contact your local Cleary's Turfgrass Professional.



Count on Cleary

Read and follow all label directions. The Cleary logo, 3336, Spectro and Alude are trademarks of Cleary Chemical Corporation. Endorse is a trademark of Arvesta. Nutri-Grow Magnum is a trademark of Biagro Western Sales, Inc. Visalia, CA. ©2003 Cleary Chemical Corporation.

## Super Tip

# Beer, Bananas and a Bath: a Deadly Combination

By Darren Davis,

Often in the golf course management profession, when a unique or innovative idea is discovered, word travels fast. Brian Beckner, golf course superintendent at LaPlaya Golf Club in Naples, recently visited me for a little turf talk over lunch. While the topic was not the most appetizing, Beckner excitedly spun a tale of a massive bug slaughter occurring at The Old Collier Golf Club. The most interesting part of the story was that the control agent being used was not a traditional chemical or pesticide; rather it was a combination of beer, bananas, and soapy water!

Beckner's enthusiasm was replicated when I visited the source of the yarn, Todd Draffen, golf course superintendent at the Old Collier Golf Club. Draffen, a graduate of the four-year turf program at Ohio State University, has been employed at the Old Collier Golf Club for four years. He followed his current employer, Tim Hiers, when Hiers made the cross-town move from Colliers Reserve.

On a recent visit to Old Collier, Draffen provided me an education on the "beer, banana and bath" technique aimed at reducing the large population of the predominant flower beetle (*Euphoria sepulcralis*) at Old Collier. The problem is not the adult beetle but rather the grub it produces. While the grub is not harmful to the turfgrass, it burrows in the soil and the turf was being destroyed by armadillos and raccoons digging for them.

Dr. Eileen Buss at the University of Florida identified the flower beetle for Draffen and also gave him the Super Tip on how to reduce the population of the beetle on the property. Her tip was to construct a homemade trap that would capture the beetles when they were active in flight. The foundation of the trap is a one-gal-

lon plastic milk jug. Two of the upper sides of the container are removed to create 4-inch-square openings on two sides of the jug. A paper clip is then used to suspend an empty plastic yogurt cup in the upper half of the milk jug. Once put in use, the yogurt cup is filled with 3-4 ounces of beer and several slices of a very ripe banana. In the bottom of the milk jug, 2-3 inches of soapy water (a bath) is added.

The homemade trap is hung in a tree by rope and is placed in areas known to have a high grub count. When the adult beetles are in flight, which occurs almost year round in South Florida, they are attracted to the container by the sweet banana which they feed upon.

they are so drunk from the beer that they fall into the soapy water and die.

Draffen said he placed 11 traps on the course and, during periods of high adult activity, the traps are refreshed daily. He removed, on average, 300-400 beetles a day from each trap. The downside is that it takes him approximately an hour a day to refresh the traps in peak periods. Consequently, due to time constraints he does not have visions of the traps resulting in complete eradication of the beetle population, but he does see it as a valuable tool in his IPM toolbox to lower the overall numbers and thus reduce the foraging damage by predator animals.

While the Flower Beetle is the primary adult beetle found in the traps at Old Collier, other species of beetles and other insects are also found. When contacted, Dr. Buss concurred with this observation. In fact, she utilizes the beer, banana, bath technique to perform insect surveys when she needs to see what species are flying in a particular area. As to the



Catch and kill flying beetles in this homemade trap and you can eliminate damage from animals digging up your course looking for their hatching grubs in the turf. Photo by Darren Davis.

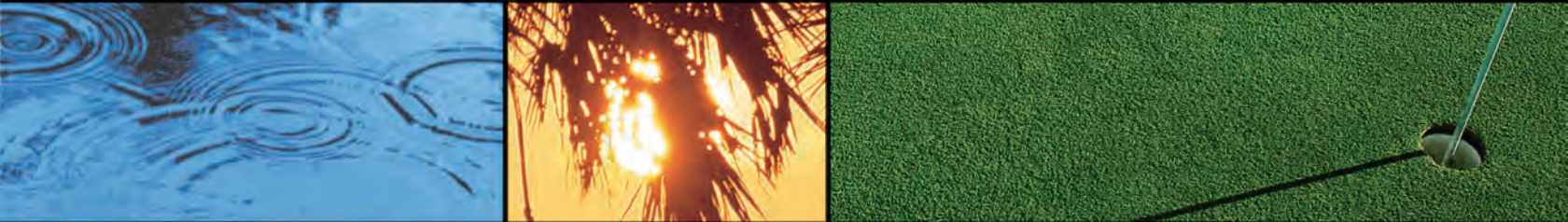
Simultaneously the beetles consume some of the beer in the same cup. When the beetles try to climb out of this tempting "cup of delicacies"

original source of the story, Brian Beckner, he continues to utilize this innovation on his golf course with very good success.

# THE OVERSEED PLAN –

"Using Tampa Bay Turf's Summer program helped us to maintain great greens through summer heat stress and unusual amounts of rain."

*Rick Wahl – Golf Course Superintendent  
Belleair Country Club*



## Looking for a Successful Season?

With Tampa Bay Turf's Overseed Program a healthy Bermudagrass turf can survive both the Winter period and the Spring transition in the best possible condition for a successful season.

- Properly prepare Bermuda for the seed to have soil contact
- Seed Dressing to maximize seeding germination in a short period of time
- Granular program for soil life, moisture retention and soil nutrient availability
- The first spray of the seeding to insure rooting and plant integrity
- Foliar Spray Program to feed the plant what it needs through the leaf and crown
- Soil Spray Program to supply soluble Calcium, Potassium, Magnesium and microbes into the soil for immediate availability to the plant

- "Foliary Supplying" N-P-K Ca, Mg, Fe, S and biostimulants for optimal fairway conditions
- Granular that "feeds" the soil and provides a wide range of available carbon to maximize microbial activity and provide proteins and carbohydrates
- Weekly/Monthly convenient schedule for your Spray Tech to follow
- Fertigation - supplying NPK for spoon feeding of greens, fairways and tees
- Ph and N control for buffering bicarbonates and sodium from irrigation water

**TAMPA BAY TURF**  
*The Turf Specialist*

7162 123rd Circle N. • Largo, FL 33773

**(800) 229-1981**

CALL YOUR TAMPA BAY TURF CONSULTANT ABOUT EXPERT SOIL ANALYSIS AND PERSONAL OBSERVATION

Tom Phillips  
**(561) 719-6265**

Carl Bronson  
**(727) 638-5858**

Jim Lawson  
**(239) 633-6398**

Frank Cook  
**(727) 235-3637**

Terry Brawley  
**(727) 638-3481**

## USGA update

# Summer Thunderstorms and Fall Preparations

By John Foy

While the Florida rainy season was a little late in getting started this year, typical afternoon thunderstorms began in late July and have continued into August. Each morning starts hot and humid with clouds building the rest of the day until intense storms let loose in the mid to late afternoon. Along with booming thunder and spectacular lightning strikes, periods of very intense rain often occur. Recently, one local golf course measured 4 inches of rain over a two-day period. If you do not have an early-morning tee time, there is a good chance that you will not finish before the lightning sirens sound and it is necessary to get off the course.

The thunderstorms have brought needed rain to replenish lakes and ponds throughout the state. Water levels had dropped extremely low due to below-average rainfall earlier in the year. At some courses along the lower east coast, self-imposed irrigation cutbacks and transfer pumping had been necessary to avoid running out of water completely.

During recent TAS visits, lake levels are back up to normal and, at most courses, major drainage problems are not being encountered. However, with continuation of the current pattern and the inevitable arrival of tropical waves or storms, saturated course conditions can quickly develop. The most modern and sophisticated irrigation system still cannot match rainfall with regards to uniform distribution and the turf growth response that follows a good downpour.

Even with afternoon thunderstorms

occurring on a regular basis, supplemental irrigation cannot be forgotten. With so much rainfall it is no longer possible to effectively manage soil moisture, and a decline in root-system development of putting greens is a common finding. A shallow root system is not able to absorb moisture just a couple of inches below the surface, and the turf has very limited drought tolerance. Thus, following several days of afternoon thunderstorms, the rapid onset of drought stress can occur and it is necessary to begin running irrigation again. This in turn can lead to golfers questioning a superintendent's competence because; "it has rained every day this week and there are wet spots in fairways, but there they go running water all over the place!"

We should not complain about the rain, however, because in Florida it seems as if we go from one extreme to another so quickly. Yet frequent thunderstorms also are starting to impact various aspects of routine course maintenance. During this time of the year, a large number of trees are hit by lightning strikes and are killed or severely damaged. Lightning also can play havoc with irrigation systems, especially the field satellite controllers and computers. Furthermore, keeping up routine mowing and accomplishing cultural management programs such as aeration can be a real challenge. Turfgrass growth-regulator treatments can really pay off with reduced scalping damage and clipping problems when it has not been possible to get out and mow fairways for several days.

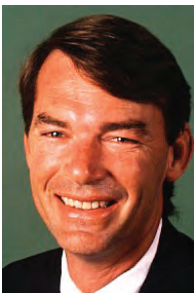
Increased weed pressure, especially rapid development of sedge and kylling infestations is another problem encountered during the rainy season. Access to local weather radar and closely monitoring thunderstorm development and movement is a big help when planning pesticide treatments. Pop-up storms still will occur, and the effectiveness of herbicide treatments is diminished if the material is washed off the leaf surface before it has had time to

adequately dry.

To golfers, afternoon thunderstorms can be an inconvenience. Golfers also incorrectly assume that frequent rain combined with constant hot and humid conditions is ideal for maintaining a healthy bermudagrass turf cover. While hot temperatures are needed to support sustained bermudagrass growth, periods of dense cloud cover have a significant negative impact. Compared to the early summer, daily solar radiation can be reduced by almost 50 percent during the late summer and fall as a result of cloud cover. This in turn reduces photosynthesis rates, and with low energy fixation, carbohydrate reserves become depleted. Unfortunately, at more golf courses there is constant pressure for fast putting speeds to be provided on a year-round basis. While maintaining extremely low heights of cut of 0.125 inch or less on a continuous basis and the resulting reduction in total leaf surface area, lack of sunlight is even more of a problem.

While rapid bermudagrass shoot growth is occurring, the turf is in a weakened condition from intense environmental stresses, and employment of a survival management philosophy is needed. Along with raising heights of cut, care needs to be exercised when conducting cultural management practices such as core aeration and verticutting. Coring replications in August and September are very important for maintaining good oxygen and moisture infiltration, promoting good root system health, and preparing for the fall and winter months. To minimize surface disruption and recovery issues using smaller (3/8 to 1/2 inch) diameter tines is advisable.

By August, a survival management philosophy also is in effect at many courses up north, but shortly after Labor Day, milder temperatures will prevail. However, in Florida, a change in the weather really will not happen until October or November and then we will be heading right into



John Foy

Is your Turf performing to its Maximum Potential?

AQUATROLS®

# Revolution™

Aquatrols is extremely proud to present Revolution, a patent-pending technology that extends turf's natural antioxidant activity and significantly increases stress tolerance by balancing air-to-water ratios in the soil.

**Maintains  
antioxidant  
activity  
under stress**

**Increases  
turf survival  
under extreme  
conditions**

**Increases  
photochemical  
efficiency**

**Stabilizes  
production of  
chlorophyll a  
& proline**

**Balances  
air-to-water  
ratios  
in the soil**

**Improves  
access to  
nutrients in  
the rootzone**

©2004 Aquatrols

AQUATROLS®

Phone (800) 257-7797 • [www.aquatrols.com](http://www.aquatrols.com)

Mark Cleveland (404) 395-7268

**So what are you waiting for? Join the Revolution!**



*Nematodes killing ryegrass overseeding and weakening the base bermudagrass.*

the winter play season. The weather can make it difficult to stay on schedule with course maintenance programs, but if basic and necessary practices are deferred or cancelled, problems will be experienced later in providing the level of conditioning desired through the winter golf season.

**Nematode News**

*Four hurricanes have struck Florida which have magnified John's comments about summer weather stress on turf. Meanwhile, nematodes are replacing molecrickets as the number one pest problem. In the last issue we reported on the work of Dr. Billy Crow as he examined some biological alternatives to Namacur, which is being phased out.*

*By May 31, 2005 golf courses located on vulnerable soils will not be able to use the product any longer. And all uses of the product will end by May*

*2007. Nematodes are a leading cause of weakened turf. See the following excerpt from July's Regional Update by Florida's other USGA Green Section agronomist, Todd Lowe.)*



Todd Lowe

“...Another common topic of concern on recent Turf Advisory Service visits includes nematodes. Nematodes are microscopic worms that begin feeding on turfgrass roots in the spring and continue to create problems throughout the summer and early fall months. Nematodes damage turfgrass roots, weakening the turf and making it prone to drought stress and poor nutrient uptake. At the recent University of Florida Gulf Coast Research Field Day, Dr. Billy Crow reported that nematodes are definitely a major pest on Florida golf courses as he sampled damaging infestation levels on 87 per-

cent of Florida golf courses.

“He also reported that after two years of product testing, the only nematicides that consistently suppress or reduce nematode damage in bermudagrass turf are Namacur (fenamiphos), Curfew (1, 3-dichloropropene) and an experimental mustard-based product. Namacur will soon be taken off the market, leaving Curfew as the only effective commercially available product...”

## Is Seashore Paspalum the Next Great Golf Course Grass?

*By Stacie Zinn*

The words “seashore paspalum” have been on the lips of many Florida golf course superintendents recently. Those words are usually followed by comments something like this:

“I just put it on my golf course.”

“I heard so-and-so just put it on his

golf course.”

“How do you take care of it?”

“What is it?”

“Huh?”

If you’ve been hearing or talking about seashore paspalum, you’ve probably heard a combination of all of the above.

To answer your questions, let’s start with the basics. Seashore paspalum, (*Paspalum vaginatum*), is a salt-tolerant, warm-season turfgrass. It requires up to 50 percent less water for irrigation than bermudagrass, and up to 75 percent less nitrogen for fertilization.

Seashore paspalum is believed to have come to the United States from Africa as bedding in the bottom of slave ships, but some schools of thought actually attribute seashore paspalum as a native of Asia.

It was introduced to Australia from Africa in the 1930s for use in salt-affected areas as forage and for soil stabilization. By the 1950s and 60s, seashore paspalum had become popular in Australia as a lawn grass and for bowling greens.

In the book, *Seashore Paspalum: The Environmental Turfgrass*, authors R.R. Duncan and R.N. Carrow outline the introduction of the grass as a commercial product into the United States from Australia in the 1960s for use on golf courses and home lawns. According to Duncan and Carrow, those early varieties, mostly Futurf and Adalayd, met with limited success because end users did not know how to properly maintain the grass:

“No additional breeding work was conducted on Adalayd after its initial introduction into the United States. Additionally, no management packages were developed for this grass and it was essentially handled like hybrid bermudagrass. The use of too much fertilizer and untimely irrigation



*WCI's new Hammock Bay Golf Course on Marco Island is grassed in SeaDwarf seashore paspalum from tee to green. Photo by Rich Redles.*





Lou Conzelmann, regional agronomist for WCI said that Paspalum was chosen initially for its tolerance to poor water quality, but it looks so good they're using it on three more new courses. Photo courtesy of WCI Communities.



Tim Daniel, golf course superintendent at the Crown Colony G. & C.C. likes the fact that he doesn't have to deal with overseeding and transition issues and he's using less water and fertilizer. Photo courtesy of Crown Colony G&CC.



Tim Daniel, superintendent at the Crown Colony G&CC in Fort Myers holds a plug of SeaDwarf from one of his greens, showing the deep root structure. Photo courtesy of Crown Colony G&CC.

scheduling eventually led to disenchantment about its performance and its ultimate demise.”

Though those early varieties were somewhat coarse in texture, the real downfall of Futurf and Adalayd was a failure on the part of those who introduced the grass to the United States to educate golf course superintendents and other end users how to properly care for it.

But that, as they say, is history.


### New Cultivars, Renewed Interest

Recently, new cultivars and customer demand for turfgrasses characterized as environmentally-friendly have propelled seashore paspalum back onto the mainstream golf market. Among the newer cultivars that are fine-bladed and bred for golf course use are:

• **SeaDwarf:** SeaDwarf is the only dwarf cultivar of seashore paspalum. It has a fine

texture and tolerates a wide variety of mowing heights, (1/8-inch to about 4-inches), which makes it ideal for tee-to-green and rough applications on golf courses. On a golf green, it demonstrates no grain and has documented green speeds at 10.5 on the stimpmeter and faster. It is often compared to bentgrass in look and texture.

• **Aloha:** Aloha is a hearty variety of seashore paspalum with a rich, luxurious color. It



**HOWARD FERTILIZER & CHEMICAL**

**FLORATINE PRODUCTS**

**SALES & SERVICE**

Bryan Riddle ..... 561-310-8482  
 Craig Perkins ..... 561-262-8794  
 Dave Price ..... 561-379-8403  
 Erik Thor ..... 954-383-5638  
 JB Branstrom ..... 561-723-7048

P.O. Box 7918 · Jupiter, FL 33468  
 Ph: 866-575-TURF(8873) · Fax: 561-575-2177



**DETHATCH • AERIFY • EXCELLENT SEED BED**

**WE CUT IT ALL!**

- Greens
- Fairways
- Tees
- Rough
- Approches
- Etc.

**HEAVY DUTY VERTI-CUT PROGRAM**  
**BENEFITS: A Beautiful Regeneration of Turf Through:**

- Less compacted Turf
- Drought tolerance and prevention of disease & fungus
- Better drainage
- Better absorption of water and fertilizer
- Creates deeper root structure
- A light aerification
- A level fairway – for player satisfaction
- Plus, clippings used for sprigging sparse growth areas

**Also Available...**  
**DEEP TINE AERATING (The Soil Reliever<sup>SM</sup>)**

1213 Piney Branch Circle • Valrico, FL 33694  
 Phone & Fax: (813) 707-9493  
 Mobile: (813) 246-2155

was developed here in the Sunshine State at the University of Florida. Aloha has a slightly wider leaf blade than SeaDwarf. It can be mowed from 1/8-inch to about 6 inches and can be used tee-to-green and in the rough on golf courses where overly fast green speed is not a requirement.

• **SeaGreen:** SeaGreen is a fine-textured, warm-season, halophytic cultivar of seashore paspalum for use on golf tees and fairways. It has a fine texture and is adapted to a wide salinity range.

• **SeaIsle1:** Sea Isle1 was introduced in Argentina. SeaIsle1's texture is comparable to Tifway 419 hybrid bermudagrass, and also boasts a high resistance to saline. SeaIsle1 is suitable for use on fairways, tees and roughs.

• **SeaIsle-2000:** SeaIsle-2000 was developed by plant geneticist Dr. R.R. Duncan at the University of Georgia's Griffin Experiment Station from a sample collected at Alden Pines Country Club in Bokeelia. Alden Pines is owned and operated by Stewart T. Bennett. SeaIsle2000 can be used on golf greens and tees, especially in salt-challenged environments.

• **Salam:** Salam seashore paspalum is a succulent, low-growing, warm-season turfgrass. Salam's leaf texture is similar to Tifway 419 hybrid bermudagrass, and under optimum management practices, the leaf texture becomes fine enough to be used as putting green turf.

### Attributes Of Seashore Paspalum

Attributes and tolerances of Seashore Paspalum vary by cultivar, but in general it is:

- Highly salt tolerant
- Can be irrigated with low-quality, recycled, reclaimed or brackish water
- Takes up to 50 percent less water to irrigate than bermudagrass
- Requires up to 75 percent less nitrogen than bermudagrass
- Requires up to 50 percent less fertilizer than bermudagrass
- Drought tolerant
- Fairly shade tolerant
- Resists wear and heals quickly
- No need to overseed

A report by Todd Lowe, agronomist for the USGA Green Section's Florida Region, indicates that seashore paspalum can tolerate a salt/salinity level of 34,500 ppm, which is well above the salt levels of most effluent water supplies.

The University of Florida's Laurie E. Trenholm, Ph.D., also reports that seashore paspalum has "excellent salt tolerance."

In their book, Duncan and Carrow reaffirm seashore paspalum's salt tolerance: "It is the

most salt-tolerant, warm-season turfgrass that is known with a salt tolerance of ocean-water levels."

Stewart T. Bennett, CGCS, is credited with discovering SeaDwarf Seashore Paspalum, the only dwarf seashore paspalum. Bennett cultivated SeaDwarf for use on golf courses, sports fields and residential lawns. SeaDwarf Seashore Paspalum is marketed by Environmental Turf.

Bennett said he has successfully irrigated SeaDwarf with water salinities up to 20,000 ppm in good quality soil, and on a regular basis irrigates the SeaDwarf on his course with water up to 13,000 ppm of salt without having to flush the soil for salt.

Seashore paspalum not only thrives under poor water quality conditions, but because of its excellent drought tolerance, seashore paspalum takes less water to irrigate than some other popular turfgrasses.

The USGA's Lowe reports that seashore paspalum requires 50 percent of the water needed to irrigate hybrid bermudagrass. Seashore paspalum, Lowe said, creates a deep root system that holds in moisture.

A 2004 study conducted on deficit irrigation at University of Florida by Joon H. Lee, Dr. Laurie Trenholm and Dr. J. B. Unruh, showed that, by its very nature, seashore paspalum will develop an extraordinarily strong and "deep root system" to seek out water at lower soil depths when overhead irrigation is decreased.

In general, seashore paspalum is more shade tolerant than bermudagrass.

"It's cultivar dependent. It's not for a shady course, necessarily, but if you have a few palm trees, it's not a big deal," Bennett said. "Paspalum has a good tolerance to low-level light intensities. If it gets four hours of really bright sun or 10 hours of cloudy weather, it's the same thing to paspalum."

Ed Miller, superintendent at Quail Ridge Country Club in Boynton Beach, said he's seen first-hand the shade tolerance of seashore paspalum since he renovated 18 of his 36 holes last year. His previous bermudagrass golf course with TifDwarf greens now has SeaDwarf greens, SeaIsle1 fairways and tees. He retained the 419 bermudagrass in his roughs.

"I have some greens out here that do not get full sunlight 'til 9, 10 o'clock in the morning and they've been doing well. I haven't seen any issues," Miller said. "The bermuda would just never last. It was horrible. Those areas died out, very thin."

Seashore paspalum also resists wear and heals quickly from divot damage.

Superintendent Tom Trammell of Hawks Nest Golf Club in Vero Beach recently conducted a

divot-repair test at his golf course. Trammell tested the amount of time it takes to repair similarly sized divots in SeaDwarf seashore paspalum and bermudagrass.

Trammell's results demonstrated that for a divot of the same size, diameter and depth, it took the bermudagrass 10 days to heal. It only took the SeaDwarf seashore paspalum five days to heal. Trammell surmised that the SeaDwarf's dual root system, utilizing both rhizomes and stolons, helped the SeaDwarf to heal twice as fast as the bermudagrass.

Research conducted by Dr. Trenholm, when she was a graduate student at the University of Georgia, yielded similar results.

"We found that for the paspalum on average, the wear tolerance across the species varied considerably depending on the texture of the grass. Across the board, you would get large differences. The coarse-leaf-blade types, the ones that might be more utilitarian types like Adalayd, had very poor wear tolerance," Dr. Trenholm said. "We find the finer the texture, the better the wear tolerance. So, your commercially available cultivars that I worked with, like SeaIsle1 and SeaIsle-2000 — and potentially SeaDwarf, though I didn't test it specifically — those had very good wear tolerance. We found that when we looked at those fine-leaf-bladed types, that their wear tolerance was as good as or better than TifWay bermudagrass."

Tim Daniel, golf course superintendent at Crown Colony Golf & Country Club in Fort Myers is now into his third year with SeaDwarf greens and SeaIsle1 fairways. Daniel said his grass stays green all winter and he does not overseed his golf course.

"It shines from the fall, winter and spring, which is our snowbird season. You don't have to overseed it," Daniel said, adding that this fact alone saves him time and money. "Because of the need not to have to overseed, there is a reduced cost."

He said he also doesn't have to worry about bothersome overseed transitioning.

"The reduced time involved in overseeding, the reduced playability of the course during the overseeding, you get no gaps there," Daniel said. "Most of our northern guests are used to playing on bentgrass and cool-season grasses and this turfgrass, paspalum, looks very similar and feels very similar to the northern grasses that they're used to playing."

### Big Developer Taps Seashore Paspalum

Perhaps what really brought Seashore Paspalum to the forefront of Florida golf industry "buzz" was when Florida-based mega-developer