

Seashore Paspalum Emerges As Contender In the Warm-Season Turfgrass Market

Abstract

Seashore paspalum is not a new grass, but in just the past few years, interest in this fine-bladed, salt-tolerant, warm-season turfgrass has grown exponentially. The latest "buzz" in the turfgrass industry as a result of savvy marketing of new varieties is an increased demand among the general public for environmentally-friendly products including turfgrass, and the success of the grass in some high-profile locations has added to seashore paspalum's newfound desirability.

By Stacie Zinn
International Marketing Director
Environmental Turf, Inc.
P.O. Box 12369
Fort Pierce, FL
Tel: 772/460-5575
www.environmentalturf.com

It is believed that seashore paspalum (*Paspalum vaginatum*) has been in existence for thousands of years and is indigenous to Asia, Africa and Europe. Some experts believe the grass first came to North America and the Caribbean Islands from Africa as bedding in the bottom of slave ships.

It was introduced to Australia from Africa in the 1930s for use in salt-affected areas of Australia as forage and soil stabilization. By the 1950s and '60s, seashore paspalum became popular in the land down under 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 U.S. 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 scheduling eventually led to disenchantment about its performance and its ultimate demise."

But in recent years all of that has changed.

Environmental Movement Creates Need

It's no secret that the environmental movement has become mainstream in the past decade. Environmentalists now wield great power in promoting environmentally-friendly consumer goods as well as influencing governmental policy. Turfgrass has become one of the products on the environmental "hit list" because of water use and nitrogen run-off issues associated with many turfgrass varieties.

A June 2002 study by John J. Haydu, Ph.D., and Alan W. Hodges, Ph.D., at the University of Florida indicated that "water use for landscape irrigation is a critical and growing issue."

The study surmised that "many golf course superintendents are aware of the increasing political pressure to reduce consumption and switch to alternative water sources, such as reclaimed water.



Rex Cunningham, farm manager for Emerald Island Turf, looks over a field of SeaDwarf Seashore Paspalum.

Here's an example of Aloha Seashore Paspalum in the field.





Here's a close-up and more distant view of Aloha Seashore Paspalum.

Mounting urban populations are placing unprecedented pressures on the natural resource base in many regions of the United States. At the same time, heightened environmental awareness by the public is focusing attention on heavy consumers of water..."

So much pressure, both from government agencies and from the general public, adds up to the need for turfgrass that uses less fertilizer, produces less run-off, uses less water for irrigation, and perhaps most importantly, can be irrigated with lesser quality reclaimed water. But not many turfgrass varieties can fit that bill.

Enter seashore paspalum.

Cultivars

There are several varieties of seashore paspalum. Below is a short list of some of the most current, popular cultivars:

- **SeaDwarf:** SeaDwarf Seashore Paspalum is the only dwarf cultivar of seashore paspalum. It has a fine texture and tolerates a wide variety of mowing heights, (about one-eighth to over three in.), which makes it ideal for tee-to-green applications on golf courses. It can also be used for high-end residential lawns and athletic fields.
- **Aloha:** Aloha Seashore Paspalum is a hearty variety of seashore paspalum with a rich, luxurious color. A slightly wider leaf blade than SeaDwarf, Aloha Seashore Paspalum makes for excellent home and commercial lawns, sports field applications and can be used wall-to-wall on golf courses where overly fast green speed is not a requirement. Aloha Seashore Paspalum offers a wide range of applications previously not seen in a seashore paspalum.
- **SeaWay:** SeaWay Seashore Paspalum is a fine textured warm-season halophytic turf for use on golf tees, fairways, athletic fields and lawns or other areas where a fine textured, close mown and high quality turf surface is desired. SeaWay is adapted to a wide salinity range tolerating maintenance exceeding 20,000 ppm irrigation water salinities with proper management and proper soil conditions.
- **SeaGreen:** SeaGreen Seashore Paspalum is a fine textured warm-season halophytic turf for use on golf tees, fairways, athletic fields and lawns or other areas where a fine textured, close mown and high quality turf surface is desired. SeaGreen is adapted to a wide salinity range and performs best with irrigation water salinities ranging from 7,500 to 15,000 ppm.
- **SeaIsle-1:** Sea Isle-1 was first introduced in Argentina. Sea Isle 1's texture is comparable to Tifway 419 hybrid Bermudagrass, and also boasts a high resistance to saline.
- **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 from Alden Pines Country Club in Bokeelia, Fl. Alden Pines is owned and operated by Stewart Bennett. SeaIsle 2000 can be used on golf greens and tees, especially in salt-challenged environments.
- **Salam:** Salam Seashore *Paspalum vaginatum* 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.
- **Durban CC:** Developed at Durban Country Club in South Africa, Durban CC is a fine textured seashore paspalum used for golf fairways, roughs and tees.

Benefits of Seashore Paspalum

In general, seashore paspalum is:

- Highly salt tolerant
- Can be irrigated with low quality recycled, reclaimed or brackish water
- Takes 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
- Faster sod farm production/grow-in than Bermudagrass, Zoysia or St. Augustine

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

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.

Duncan and Carrow, in their book, 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, at Alden Pines Country Club in Bokeelia, Fl. Bennett cultivated SeaDwarf for use on other golf courses, sports fields and residential lawns.

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. Why? Seashore paspalum, especially SeaDwarf Seashore Paspalum, creates a deep root system that holds in moisture.

Seashore paspalum resists wear and heals quickly from divot damage. Information from the University of Georgia claims that seashore paspalum's "wear and traffic tolerance is similar to Bermudagrass."

Seashore paspalum, in general, is more shade tolerant than Bermudagrass. "It's cultivar dependent," Bennett said. "It's not for a shady course, necessarily, but if you have a few palm trees, it's not a big deal. If you have a big oak tree, you shouldn't plant grass underneath in a heavy shaded area--any grass. Moderate shade is no problem. Heavy dense shade is a problem for any grass. 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."

Seashore paspalum, in general, also achieves a faster production on the sod farm and faster grow-in on a golf course than many other popular grasses.

Rex Cunningham, turfgrass sod farm manager for Emerald Island Turf, a licensed SeaDwarf and Aloha grower in Avon Park, FL, said he's experienced quick results in his fields. "SeaDwarf growing in the field can be grown to productive stage in 90 to 120 days, that's three to four months," Cunningham said. "Most Bermudas take a minimum of six to eight months. Floratams or St. Augustine grasses, all of them to my knowledge take 10 to 12 months. Most of the Zoysias that I've had any experience with are going to be 12 to 18 months."

For growers, seashore paspalum's fast production speeds are quite significant because the faster you can produce a product, the faster you can sell it and reap the financial rewards. "If you're a grower and you can grow grass to production in three to four months, then you're looking at producing that grass two to two-and-a-half times a year, instead of once," Cunningham said.

Although all seashore paspalums produce quickly in the field, some cultivars produce more quickly than others, Cunningham said. "Seadwarf, SeaGreen and Aloha are all in that category," Cunningham said. "SeaIsle 1 takes a little bit longer but not much. But for most Paspalums, yes, that is true. You will get a quick grow in."



Part of this SeaDwarf Seashore Paspalum field has been harvested.

Suggested Uses & Testimonials For Seashore Paspalum

Seashore paspalum has been used successfully on golf courses, athletic fields and home lawns.

The grass has been used successfully on such high profile properties as:

- Houston Astros Minute Maid Stadium (SeaIsle 1)
- Texas Rangers infield (SeaIsle 1)
- Alcanada Golf Club in Mallorca, Spain, (SeaDwarf tees and greens, Salam fairways and roughs)
- Serralles Hotel & Golf Resort, Puerto Rico (SeaDwarf)

Ed Miller is golf course superintendent at Quail Ridge Country Club in Boynton Beach, FL. He recently re-grassed a 25-year-old course with seashore paspalum using SeaDwarf on all 18 greens, plus a chipping green and a putting green. He has SeaIsle-1 on his fairways and tees, and the roughs are 419 Bermudagrass.

Miller said he had three main reasons for grassing with seashore paspalum. "One, no need to overseed. The greens keep their color even in cooler temperatures and you have the visual effect of the striping without overseeding," Miller said.

"Two, reclaimed water. The water is not that good. The sodium levels are around 600 to 800 ppm, which is perfect for the

Paspalum," he said.

"Third, we have eight greens that have partial sunlight because of large pine trees surrounding those areas. The members did not want to remove these trees. Those eight greens have out-performed the TifDwarf greens I had last year."

Miller has also experienced another benefit with the grass. "We support 35,000 rounds of golf per year, most of that coming from November to April. I have struggled with those south greens for five years because of the shade, water and traffic issues. Since we put in the SeaDwarf, this has been my best season."

Tim Daniel, golf course superintendent at Crown Colony Golf & Country Club in Fort Myers, FL, grassed his course about two years ago with SeaDwarf on his greens and SeaIsle 1 on fairways, tees and roughs.

"The overall visual look of the grass, there is no comparison," Daniel said. "I've been with it for two years now so I'm a little bit spoiled. If I go play a Bermuda golf



This view of a tee box at Hammock Bay Golf & Country Club near Marco Island, FL, shows how well SeaDwarf Seashore Paspalum stripes for golf and sports turf use.

course... the turfgrass is visually night and day. It looks better than Bermuda esthetically in density and consistency, I would say. I think Bermuda is a little intolerant to certain conditions. The Paspalum is a little bit more able to withstand diverse soil situations." Seashore paspalum also has residential applications.

Dr. Lee Berndt, professor and program coordinator of the golf course operations program at Edison College, has done research on seashore paspalum.

"The biggest market I see for seashore paspalum is home lawns where it's probably going to replace Floratam," Dr. Berndt said. "I think that it's a lot nicer grass than Floratam is, it's a lot more fine textured. I think that seashore paspalum will also tolerate city water probably better than Floratam does and I believe it would be less of a water user than Floratam would be. I think that there's probably a real market there for that."

Maintenance Practices

Once established, compared to Bermudagrass, seashore paspalum takes less water, tolerates lesser quality water and higher salts, and uses less fertilizer, especially nitrogen. In fact, if treated like Bermudagrass once established, seashore paspalum will react negatively.

During production and grow-in, seashore paspalum needs higher levels of nitrogen and water, (similar to Bermudagrass), and then should be weaned off to train it to be "lean and mean."

There is one note of caution, however. While seashore paspalum heals quickly (because of its rhizome growth nature) from divots, the grass reacts negatively to scalping. Frequent cuttings that take off no more than one-third of the leaf blade and low nitrogen levels to curb growth rate, are the best ways to avoid scalping.

New Research

Research on seashore paspalum continues. Among some projects underway right now, Dr. Berndt is conducting research at Edison College in Fort Myers, FL, on salinity tolerance of seashore paspalum, and Dr. J. Bryan Unruh at the University of Florida is beginning a project on comparing different cultivars of seashore paspalum.



(LEFT) At Hammock Bay Golf & Country Club near Marco Island, FL, all of the common areas and residential roadway medians, along with the 18-hole golf course, were grassed with SeaDwarf Seashore Paspalum. Notice how well SeaDwarf holds a crisp edge in a residential setting.



(RIGHT) This view of one of the holes on the back nine at Hammock Bay Golf & Country Club near Marco Island, FL, shows the tee boxes and fairway. The golf course was grassed wall-to-wall with SeaDwarf Seashore Paspalum.

Continuing Education

As with the introduction of any new product, industry and consumer education are key.

Environmental Turf currently has a schedule of seminars planned around Florida, (and later other southern states), to educate the industry on the benefits of seashore paspalum in general, and specifically SeaDwarf and Aloha. The seminars target industry professionals in the position to "spec" the grass for use--professionals such as landscape architects, golf course architects and golf course superintendents.

To help with questions on the care of seashore paspalum, Environmental Turf has produced a seashore paspalum maintenance care manual that is available free to the industry.

Environmental Turf is also actively recruiting new turfgrass sod producers to become certified licensed growers in the company's SeaDwarf and Aloha grower programs. For more information, contact Environmental Turf at Tel: 941/637-6007, or at www.environmentalturf.com Fort Pierce, FL.

