

Large desalination plants provide much of the 2 million gallons of water used every day at The Montgomerie.



Troon Golf's role in the Middle East:

The Montgomerie

The courses: The club has an 18-hole championship course and nine-hole par-3 course designed by Colin Montgomerie and Desmond Muirhead.

Location: Dubai, United Arab Emirates.

Status: Troon began managing the club in 2001, shortly after its completion.

Arabian Ranches Golf Course

The course: This 18-hole course was designed by Jack Nicklaus and Ian Baker Finch.

Location: Dubai, United Arab Emirates.

Status: Troon managed construction for this club, which opened in 2004 and is now operated by a local owner.

Doha Golf Club

The courses: Doha has an 18-hole championship course and 9-hole academy course.

Location: Doha, Qatar.

Status: Troon did some brief preparatory work on this project.

Troon is also working on planning and construction of the following courses and clubs:

The Palm, a 45-hole club, on a massive man-made island in Dubai, is scheduled to open its first course this year.

Dubai Sports City, with 18 holes, designed by Ernie Els, and a Butch Harmon Golf Academy and an Olympic-style Village, will open this year.

Sahara Golf Club, this 18-hole course, is located just outside Kuwait City, Kuwait, and will open this year.

Jumeirah Islands, located in Dubai, with 36 holes, is set to open this year.

Al Reem, this 18-hole course is located in Ras Al Khaimah in the United Arab Emirates and will open in 2006.

McIntyre says. "It had been fairly unhealthy and needed changes in water and fertilizers. It needed to be upgraded to what we expect a property to be like."

Troon prides itself on maintaining a worldwide reputation for outstanding playing conditions. In the case of The Montgomerie, the harsh summertime temperatures create tough challenges.

"It can get to the mid-120s in summer," McIntyre says. "As hot as it is, some people play in early morning or late afternoon because there is so little else to do. In summertime, golfers still play a couple thousand rounds a month."

As in the deserts of Arizona and tropics of Florida, the biggest months of play are December through March, but October and November are also popular, McIntyre says. When the summer

temperatures climb, golfers also play on a nine-hole par-3 course that has floodlights for the evening. The driving range is also lit in the evening.

Other non-Troon courses in the area do the same: Nad Al Sheeba in Dubai has a regulation 18-hole course completely floodlit for nighttime play.

The 18-hole championship course at The Montgomerie, McIntyre says, is the only all-green North American-style course in Dubai. It is well known for having what managers claim is the largest green in the world, 58,000 square feet, on the par-3 No. 13.

There are the typical tee boxes, fairways and greens, and then massive gardens run from the rough up to the homes, for which 7,000 sites are being

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An Oasis in the Middle East

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created on or near this course. The main housing development, which Emaar calls the "Beverly Hills of Dubai," is Emirates Hills.

"The course has been planted out so as not to appear as desert," McIntyre says. "It has a tropical desert look with succulent ground cover, bougainvillea and palms. It was one of the first residential courses in the Mideast, and they didn't want the homes to back up to the course. So out of your windows you see a massive wall of color and beyond that the fairways. There are actually 92 acres of gardens with millions of plantings."

The course is semi-private, and many of the members, homeowners and tourist golfers on the course come from England and Germany. "But there are people who come there from every continent," McIntyre says.

Players have come from Singapore, Korea, Malaysia, Russia, Kenya, Iran,

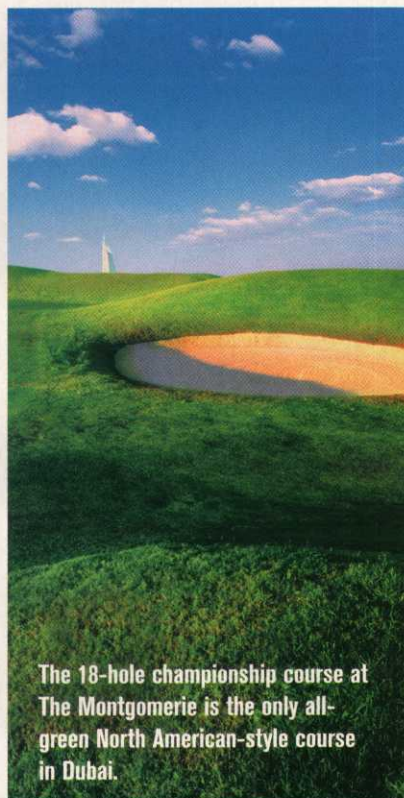
Switzerland and even the United States. Many have been guests at the eight resorts located within 15 minutes of The Montgomerie. The high-season green fee is about \$165.

The only real slowdown in play came in the months leading up to the Iraq war. "After the war started, everyone came back," McIntyre says.

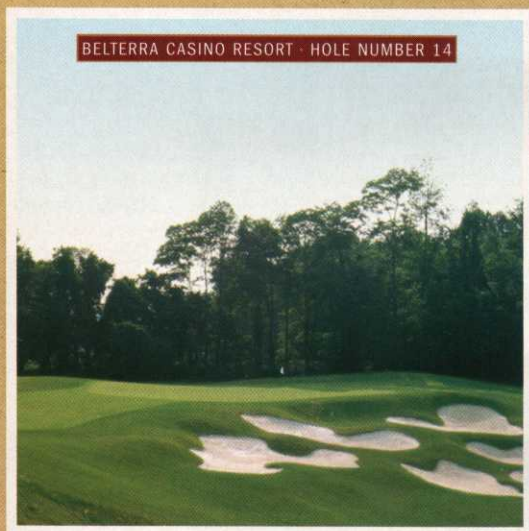
The membership base at the club is largely expatriates, many of them experts in banking and finance who work in the country and buy homes on the course. But local interest in golfing — among natives of Dubai — is on the increase.

There are 6,500 registered golfers in Dubai, McIntyre says, but only 11 natives of the United Arab Emirates are members of his club.

"Right now, it's a first-generation golfing community," McIntyre says. "In a generation or two, the local nationals will drive the game. The junior national team of the UAE is already one of the best." ■



The 18-hole championship course at The Montgomerie is the only all-green North American-style course in Dubai.



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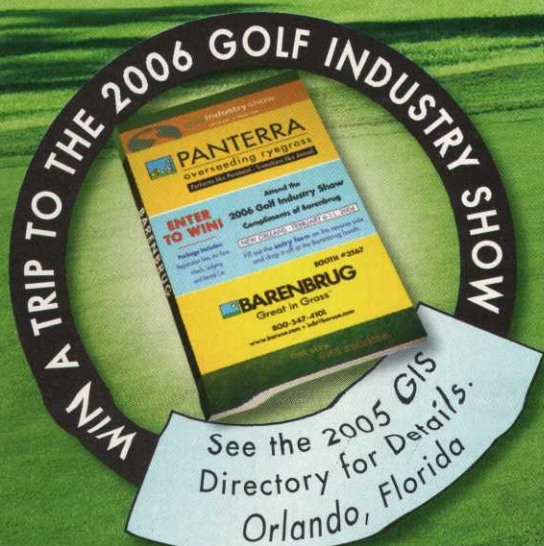
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Jon Winokur's recently published *Encyclopedia Neurotica* (St. Martins Press, \$23.95) highlights all of our worst fears, anxieties and other peculiar tendencies under one book cover. Winokur lists 19 phobias you've probably never heard of, defining them as intense, irrational and often disabling fears.

Some estimates claim that one in five Americans suffer from at least one phobia and that new phobias are identified constantly. A few of my favorites in the never-heard-of-category include:

Arachibutyrophobia: fear of peanut butter getting stuck to the roof of the mouth.

Metrophobia: fear of poetry (sign me up!).

Penteraphobia: fear of one's mother-in-law.

But Winokur left out an entire subset of phobias related to that most unusual species of human prone to intensely irrational and often disabling anxiety — the green chairman.

So, I called up my old pal Dr. Heimlich Penalbunker down at Orlando's Center for the Protection of Par. Penalbunker is still basking in the 2004 U.S. Open glory, where many of his par-protection theories were confirmed.

For years, the doctor has been quietly working to identify the various neurotic tendencies of green chairmen in hopes of furthering his cause to preserve and protect par's almighty sanctity.

Exclusive to *Golfdom*, he shared a few of the phobias that his team of scientists has identified. If your green chairman suffers from more than three of these phobias, Penalbunker recommends you book him on the first plane to Orlando. The list begins here:

NoAnswerCellphobia — Fear that if the superintendent does not answer his mobile phone on the first two rings, he is out defying committee recommendations.

Framingphobia — If every hole is not separated by a dense forest of non-native trees to make golfers on neighboring holes invisible, the subject fears that the greatness of one's home course will be undermined severely.

Hootiephobia — Intense fear that committee-driven course changes will not bring great attention and acclaim to the green chairman.

LockerAirVentphobia — Fear of fellow members slipping anonymous, threatening notes into the green chairman's locker.

Communicadophobia — Fear of communicat-

Fearsome Phobias & Green Chairmen

BY GEOFF SHACKELFORD



FOR YEARS,
DR. PENALBUNKER
HAS BEEN WORKING
TO IDENTIFY
THE NEUROTIC
TENDENCIES OF
GREEN CHAIRMEN

ing design alterations, maintenance days and other course-related news to fellow members via memos, bulletin board letters or on the club Web site.

UpwardSlopephobia — Fear that design changes to the course will raise the slope rating, offending better players (i.e. sandbaggers) whose handicaps will travel too well.

ReverseSlopephobia — Fear that design changes will lower the course slope rating, offending better players (i.e. sandbaggers) whose handicaps will not travel well.

FluorescentEnoughphobia — Fear that new white bunker sand will fail to join the Great Wall of China as the only man-made objects visible from outer space.

Contaminationphobia — Fear that new pearly-white sand will be contaminated by rocks, leaves or other dark substances, causing extreme fear that golfers will think said chairman is not doing his job.

Auburnphobia — Tendency to fear that any portion of a golf course that's not a deep shade of green (bunkers exempted . . . sometimes) displays signs of eminent and widespread turf disease.

19thHolephobia — Debilitating fear of having to buy lunch for fellow committee members or course staff. Often leads to inability to digest food properly.

Da'Hoodphobia — Fear of not mimicking what the competing course down the street is doing, no matter how ridiculous or expensive.

Parphobia — Fear that par will be broken under committee's watch during minitour events, club championship or senior mixed four-ball.

Zenphobia — Fear that the course requires absolutely no change whatsoever. Considered to be the most widespread, debilitating and acted upon phobia of all.

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TURFGRASS TRENDS

DISEASE MANAGEMENT

Resistant Cultivars Are Bermuda's Best Battle Vs. Spring Dead Spot

By Dennis Martin, Ned Tisserat, Charles Taliaferro, Nathan Walker and Mike Anderson

Spring dead spot (SDS) is one of the worst diseases a superintendent can face while growing bermudagrass in the transition zone.

SDS injury usually takes the form of circular dead areas that can range from a few inches to several feet in diameter. Patches can coalesce into even larger areas at times. While the fungi that cause SDS may be colonizing the plants in summer, fall or even winter,

The management of SDS involves the use of resistant cultivars, coupled with practices that expedite bermuda growth into damaged areas.

the injury symptoms occur during green-up in the April-May period. The disease is most common on mature bermudagrass stands that are 2 or more years old.

Survival of bermudagrass crowns and rhizomes within the infected patches is highly variable, ranging from nearly complete survival to no
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Arguably beautiful to a turf pathologist, these spring dead spot symptoms are ugly from both the golfer's and the superintendent's perspectives, and they reduce playing surface quality.

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In field tests, the outer two holes received inoculum while the center hole was used as a check to assess injury from removal of a plug late in the growing season.

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survival. Often winterkill and SDS interact to cause devastation. Besides being very unsightly, SDS patches are usually sunken, providing a less-than-optimal ball lie for golfers. As the season progresses, weeds often proliferate in the patches, further reducing the quality of the playing surface.

SDS is caused by at least three different species of fungi. *Ophiosphaerella korrae* is the most frequently isolated SDS pathogen in the southeastern United States (Iriarte et al. 2004; Wetzel, Skinner, and Tisserat, 1999) while *O. herpotricha* is the most abundant SDS pathogen in Kansas and Oklahoma (Tisserat et al., 1989; Wetzel, Skinner and Tisserat, 1999). *Ophiosphaerella narmari* has been isolated as a casual agent in California, Kansas, Oklahoma and North Carolina (Iriarte et al. 2004; Wetzel, Hulbert and Tisserat, 1999).

An integrated approach to managing SDS involves the 1.) selection and use of resistant cultivars, coupled with practices that 2.) expedite bermuda growth into damaged areas that 3.) reduce the severity of the disease in the future (Tisserat, 2004; Martin and Hudgins, 2002).

More specifically, the practices shown to reduce severity of the disease include combinations of aeration and vertical mowing performed twice each year to reduce soil compaction and thatch mass (Fry and Tisserat, 1997) as well as the use of acidifying fertilizers (Dernoeden et al, 1991) that may neutralize soil alkalinity. Surprisingly, while SDS has been connected with intense management practices, close mowing alone does not increase the sever-

ity of the disease (Martin et al, 2001).

Many practicing turfgrass managers consider any cultural practices that reduce winter-hardiness as initial "suspects" in further increasing severity of SDS until those practices are found "not guilty." This is because the actual mechanism of bermudagrass death with this disease is believed to be low-temperature kill on plant material that was pre-disposed by fungal infection. One such "suspect" practice is late-season nitrogen fertilization.

It is important to note that it has not been established through research that late-season fertilization of bermudagrass increases SDS severity. Furthermore, recent work at other universities has shown that late-season fertilization does not necessarily increase winterkill.

Overall, control of SDS with fungicides has been erratic from state to state and trial to trial. Tredway and Butler (2003) recently provided a review of their initial encouraging fungicidal results on fungicide choice, carrier rate and the importance of timing of applications in the late summer through fall. Biocontrol agents are currently under study by members of our team and control of SDS may be a possibility in the future (Anderson et al., 2003).

Although proper cultural techniques are critical to a successful SDS management program, use of resistant cultivars is arguably the foundation of a successful program in situations where managers can influence the cultivar being installed initially or through renovation. With this in mind, a substantial amount of screening for SDS resistance was conducted in the mid-continent during the 1990s, with work continuing today.

No less than 84 commercially available and experimental bermudagrasses have been screened thus far in trials at Oklahoma State University or Kansas State University. An additional 37 previously untested entries are currently under study at Stillwater, Okla.

Many of the grasses currently under study are NTEP bermudagrass entries. Others are grasses in the final stage of testing in our bermudagrass breeding and development effort. Standards are included in each trial, with these being some of the best and worst performers of the past. These studies have been partially funded through several grantors, including the United States Golf Association

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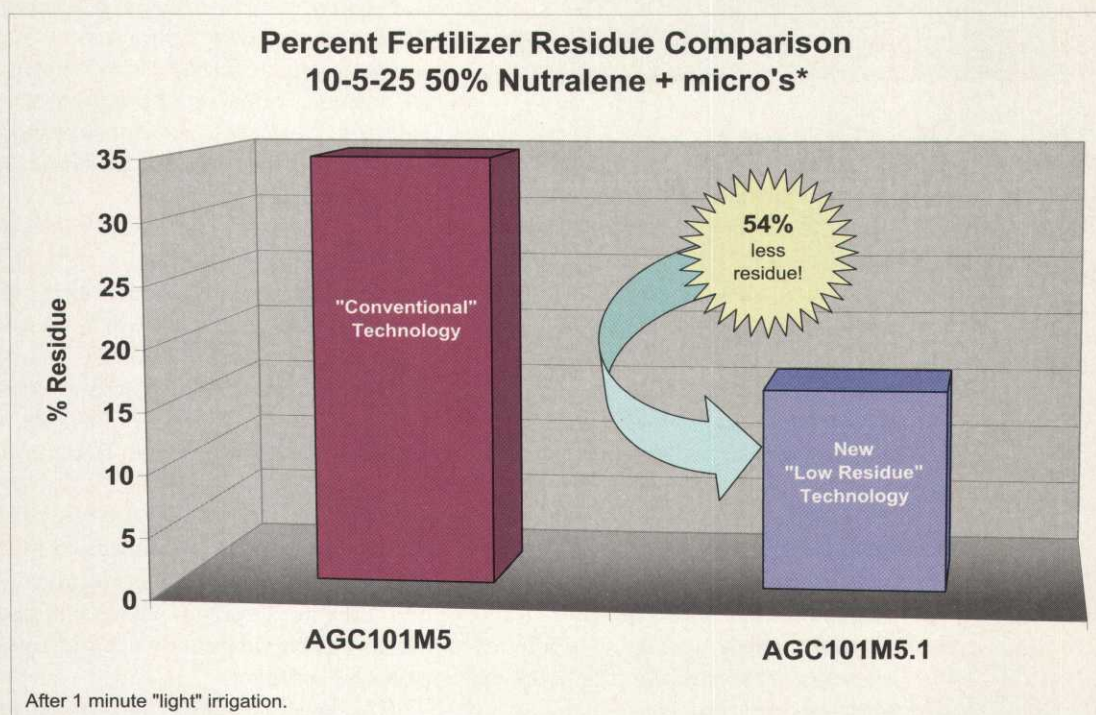
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These are typical dead spot symptoms in the spring, about 2.5 years after initial inoculation. Symptoms are assessed and can be used as relative indices of cultivar susceptibility.

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(USGA), National Turfgrass Evaluation Program (NTEP), the Kansas Turfgrass Foundation (KTF) and the Oklahoma Turfgrass Research Foundation (OTRF).

The method used to screen for SDS under field conditions was developed by Ned Tisserat and the late John Pair of Kansas State University. Minor modifications of the technique have occurred over the years. While efforts are underway to develop a more rapid screening technique by members of our team (Anderson et al. 2003), we still must rely on lengthy field testing.

Briefly, the screening technique involves growing the known causal agent of the disease on oat seed in the lab. In the fall, after cutting several shallow holes with a cup cutter, the colonized oat seed is inserted into the holes and the sod plugs are replaced. Inoculation sites are marked with small pieces of copper wire which can be located using a metal detector. Marking/mapping is necessary to distinguish between an infestation site and possible natural background SDS.

In the spring of subsequent years, the area of symptomatic turf is recorded. Select patches are used to determine if the fungus present is the one originally grown on oat seed. In some studies, the shoot survival within the affected areas is also monitored. The disease progresses over time. A minimum of two but preferably three or more years of symptoms are necessary before any confidence can be gained in bermudagrass cultivar response to an SDS pathogen.

Confidence in findings is further built by comparing findings from different studies con-

ducted with the same pathogen strain over time.

Currently, we use SDS patch area as an index of comparison for resistance. In examining NTEP reports, trade magazines and journals, the reader will find disease area, number of patches, shoot mortality within infected areas or even a 1-9 rating scale used as indices of relative resistance to the disease. Readers are always urged to check the legends or footnotes associated with any disease ratings so that it is clear as to whether "big numbers" mean "more resistant" or "less resistant" to the disease.

It is important to note that bermudagrasses that are termed to be "more resistant" are still susceptible to the disease. However, symptoms are less severe on these cultivars (either less disease area, fewer spots and/or better shoot survival within patches) than on those that are very susceptible.

Variety performance

Based on our research we feel that cultivars which are fairly susceptible to SDS caused by *O. herpotricha* include Arizona Common, Cheyenne, Jackpot, NuMex Sahara, Oasis, Poco Verde, Primavera, Princess 77, Sonesta, Tifton 10, Tifway 419, Tifgreen 328, Tropica, Vamont and Sunturf.

Long-term standards of good SDS resistance include the vegetatively propagated Midlawn, Midfield and Midiron. Yukon and Guymon are two of the most resistant seeded varieties, with Riviera also providing improved resistance over Arizona Common.

The newer vegetative cultivars Patriot and Tifsport show improved resistance over Tifway 419. Not all of the varieties mentioned above would provide ideal performance from teebox to fairway to rough, so consult your local turf specialist for specific input.

We are concerned that contamination of seeded varieties and shifts in genetic identity of these cultivars during seed production over time may mean that test results from earlier trials may not align with those from later trials. Readers are encouraged to use the most recent test results when seeded varieties are of concern.

Despite the seemingly large number of bermudagrass cultivars previously tested and currently under evaluation for SDS resistance, large information gaps in cultivar resistance exist.

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