

Heated Debate



Brian Ferrier keeps a folder of newspaper clippings on myriad issues, including global warming.

Continued from page 28

for such equipment. Fuel prices could rise dramatically to curb demand in an effort to lessen emissions. Fertilizer prices could increase if there's an increase in the natural gas prices used to manufacture it. (This could occur if more global warming-induced hurricanes damage natural gas processing facilities, which could cause a decrease in supply, according to research.)

And because predictions that more intense hurricanes could occur as a result of climate change, Riordan says insurance companies could raise premiums or even cancel them for golf courses located

in regions prone to such storms, such as thousands of courses located in Florida, Georgia, South Carolina, North Carolina and other coastal states.

Kevin Fletcher, executive director of Audubon International, says the government could regulate industries like the golf industry with carbon-use taxes to encourage less carbon dioxide emissions if it wants to reduce manmade greenhouse gases, although the current political climate in the United States would make that unlikely. Fletcher notes that Germany and other countries have implemented carbon tax policies to achieve eco-efficiency through penalization.

"Essentially, an environmental tax like this on a policy level tries to address environmental externalities or costs to the environment that aren't otherwise captured in productions costs," he says. "This is why voluntary efforts seem more favorable."

But because it's a smaller and more specialized industry, there's a chance the golf industry would be overlooked if the government decided to target business to reduce global warming, sources say. Lonn's guess is that government would go after the big guys. "Golf is small compared to other industries like transportation," he adds.

But even if government regulations caused by global warming spared golf courses, the phenomenon itself might not. Lonn says climate change could alter the distribution of rainfall, mean-

Continued on page 32

Temperature's Rising, As Are Good Days to Play Golf

If global warming is the real deal, a warm up in the weather could help increase golf rounds, which would benefit the entire industry financially.

WeatherBill, an online weather risk management service, published a study last year analyzing historical weather data to determine changes and trends in annual Golf Playable Days (GPD). The study concluded that U.S. GPD are increasing in 95 cities, primarily due to higher average temperatures.

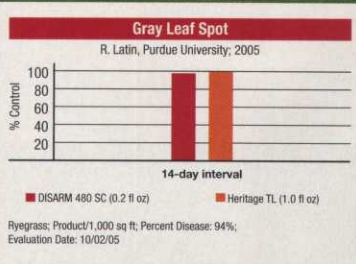
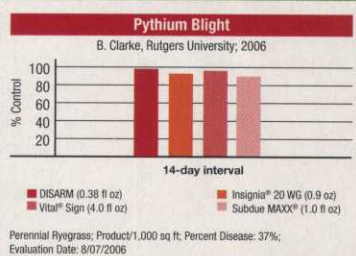
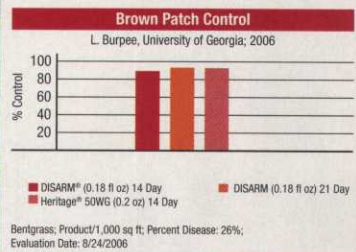
What Northern golfer living in Minnesota or Maine wouldn't want to play 18 holes in mid-January if the opportunity presented itself in the form of a sunny and 70-degree day?

— Larry Aylward

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Arysta LifeScience

Harmony In Growth

Continued from page 31

ing regions either receive heavy rain or no rain, which would greatly impact golf course maintenance from irrigation to pest control.

Lonn says that Minneapolis, where Toro

“We should be concerned about [global warming] because we are members of society. We should figure out how to use our education and influence to help society.”



— **DANA LONN**, THE TORO CO. DIRECTOR OF THE CENTER OF ADVANCED TURF TECHNOLOGY

is based, is a good example of this extreme. The city recorded record rains of 9.32 inches in August.

Such extreme weather situations could turn political for golf courses in areas where there is little rain and drought persists, Lonn explains. Because golf courses are often viewed as water wasters — albeit unfairly — their irrigation practices could be scrutinized even more in regions where water is scarce.

“There will be more and more of that kind of political pressure as the climate changes,” Lonn predicts.

Jim Husting, certified superintendent of Woodbridge (Calif.) Golf & Country Club, also believes global warming is changing the weather patterns. He has noticed areas in California and throughout the country that have endured prolonged drought or wet spells.

In the Pacific Northwest, Husting is concerned global warming will limit snowstorms,

leading to a snow-pack level shortage in the mountains. That means less melting snow in the spring and less water to fill reservoirs, which equates to less water for golf course irrigation.

“The golf courses that rely on freshwater delivery will be impacted the most,” Husting says. “The (golf courses) that don’t use reclaimed water are going to get hammered hard.”

Global warming could also alter a golf course’s pest management program. Extreme rainfall will undoubtedly have an effect but so will an increase in temperature, which could force Northern superintendents to battle a new array of weeds, diseases and insects on their greens, tees and fairways.

Dave Gardner, an associate professor of turfgrass science at The Ohio State University, made an eye-popping discovery on one of the university’s turfgrass plots about two years ago. He found that Dallis grass, a Southern weed, had invaded a section of bentgrass on the plot. The weed has sustained itself and spread since.

The text books say that Dallis grass should not survive farther north than Tennessee.

“We’re talking about an encroachment of about 500 miles,” Gardner says. “I have no idea how it got here.”

The problem is there are no EPA-labeled herbicides to control Dallis grass in Ohio. “The only herbicide capable of controlling it semi-well is MSMA, which the EPA decided not to reregister,” Gardner says.

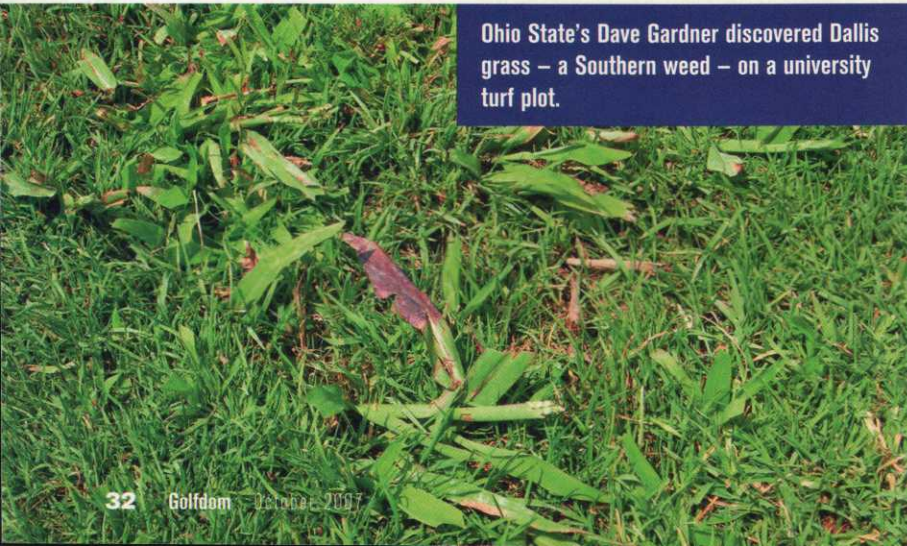
Dallis grass could cause Northern superintendents problems similar to those they endure by trying to rid their courses of crabgrass and goosegrass.

“But because they would have no selective herbicide option to control it after it emerges, they would have to pick it out by hand,” Gardner says, noting that he has seen Dallis grass withstand cutting heights down to one-half inch.

Gardner also discovered Johnson grass, another weed more frequently found in turfgrass in the southern United States, growing on the Ohio State campus. He says additional Southern-based weeds could migrate north and be difficult to control.

“I don’t want to sound like an alarmist, but

Ohio State's Dave Gardner discovered Dallis grass — a Southern weed — on a university turf plot.



this could pose a real problem,” Gardner says.

Other reports suggest global warming will cause an increase in insect population, which could affect a golf course’s insecticide program. Not only could Southern-based insects like fire ants migrate farther north (some reports they that’s already occurring), but insect species living in warmer areas could undergo more rapid population growth because they typically evolve faster in temperate climates.

While golf courses would feel the fallout from global warming, the question that begs to be asked is: Are golf courses contributors to global warming?

Lonn says the industry needs to study the role that golf courses play in global warming.

“A golf course is about growing plants, and plants are part of how you convert carbon dioxide back into oxygen,” he says. “We need to understand better the balance between growing plants on the golf course and the carbon cost of maintaining them.”

Joe McCleary, certified superintendent of Saddle Rock Golf Course in Centennial, Colo., says a carbon footprint study for golf courses could be initiated to find out where golf courses stand in relation to global warming. A carbon footprint is the total amount of carbon dioxide and other greenhouse gases emitted over a certain time period. Such a study also would provide courses with other detailed information, such as how much fertilizer they use and how much energy they expend.

“It becomes a tool to evaluate what happens on golf courses as far as the environment is concerned,” says McCleary, a member of the GCSAA environmental programs committee.

McCleary is confident a carbon footprint project would reveal how much of a cooling effect turf has on the environment and that golf courses aren’t a major threat to global warming.

“There are many more environmental benefits to golf courses than people realize,” he adds.

It makes sense for golf courses to have that information if environmental groups decide to single them out as contributors to global warming.

Scientists on the Cause of Climate Change

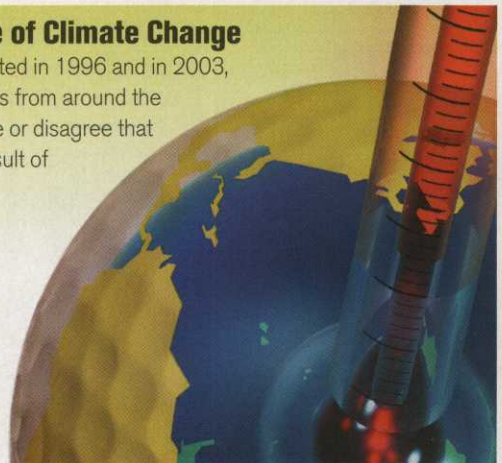
In two different surveys, conducted in 1996 and in 2003, more than 560 climate scientists from around the world were asked: Do you agree or disagree that climate change is mostly the result of man-made causes?

Agree: **55.8** percent

Disagree: **30** percent

Uncertain: **14.2** percent

Source: *Scientific Consensus on Global Warming/The Heartland Institute*



“People make wild assumptions about golf courses,” McCleary stresses. “So there’s nothing wrong with having information ready when its time to start talking about the benefits of golf.”

Tim Hiers, certified superintendent of the Old Collier Golf Club in Naples, Fla., dis-

Continued on page 48

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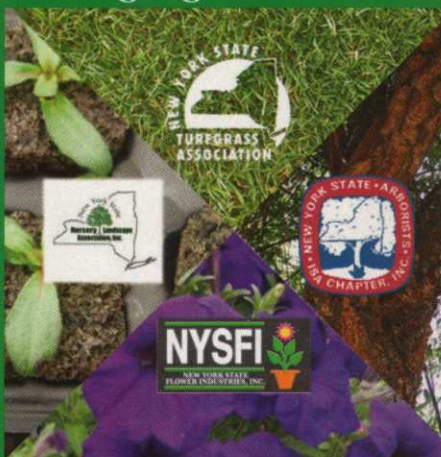
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