

# Success Story



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## **CROASDAILE COUNTRY CLUB DURHAM, NORTH CAROLINA**

**Superintendent: Charles Sheffield**

**Experience: 6 years**

**Crew Members: 12**

**Course Length: 7,068 yards**

**Greens: Bentgrass**

**Fairways: Bermudagrass**

**Roughs: Bermudagrass**

***“This disease is different than anything else we’ve seen here. It has become the plague.”***



**Insignia®**

F U N G I C I D E

## **Insignia® Fungicide Gets to the Root of Southeast’s Unknown Pythium Disease**

Some might consider superintendent Charles Sheffield lucky. Only one disease significantly disturbs the turf on his pristine 7,068-yard golf course at Croasdaile Country Club in Durham, N.C. However, any superintendent or pathologist living in the Southeast knows that the unknown root disease of creeping bentgrass on golf course putting greens – often referred to as *Pythium volutum* – and luck mix about as easily as oil and water.

*Pythium volutum* has never been implicated as a turfgrass pathogen, but has been previously isolated in turf roots in North Carolina (1994) and Maryland (1999). Since 2002, the unknown disease has been observed attacking putting greens at 40 to 50 golf courses in the southeastern United States and is limited to newly constructed greens less than eight years old. Bentgrass is most susceptible to infection and, if left untreated, in a matter of weeks the pathogen can cause serious decline with the ability to wipe out entire greens. Unlike the more common warm-season Pythium root rot, where infection is visible quickly, this unknown disease does not show symptoms. When the weather becomes warmer and the turf becomes stressed from high heat, continued close mowings, low fertility schedules and droughty weather patterns, the disease manifests itself with brown blotch-like or blighted irregular patches of turfgrass.

The symptoms observed at Croasdaile Country Club and other Southeastern golf courses are consistent with a disease called Pythium root dysfunction, initially described in 1985 by C.F. Hodges of Iowa State University. Two Pythium species, *P. aristosporum* and *P. arrhenomenes*, were implicated as the cause of the turf problem in Iowa. Preliminary research by North Carolina State University plant pathologist, Dr. Lane Tredway,

indicates that a different species, *Pythium volutum*, is responsible for the recent breakouts in North and South Carolina and Virginia. Attempts to treat the disease through cultural controls, such as syringing greens to keep them moist, raising mower blade heights and increasing fertility, have aided turfgrass recovery but have not hindered the pathogen's damage. Fungicides that effectively treat Pythium blight on bentgrass have not stopped the turfgrass decline.

"This disease is different than anything else we've seen here," said Sheffield. "It has become the plague."

Croasdaile's membership of 340 golfers playing 20,000 to 25,000 rounds each year on the par-72, 18-hole championship course demands the highest quality playing surface possible. Originally built in 1977, the course endured heavy renovations in 2001, including the installation of a new set of greens. It re-opened the summer of 2002, Sheffield's first year as Croasdaile's superintendent.

Sheffield first noticed patches of discoloration ranging from the size of a golf ball to a steering wheel in early March 2002, when the course re-opened after construction. The spring heat brought out the discolored patches on the nubs, slopes and greens of the course – high traffic areas where the turf was more susceptible to stress and drying out.

At that time, Croasdaile's turfgrass program included spray applications every 10 to 14 days in the summer. Sheffield rotates several products yearly that include the use of broad-spectrum combinations that have been successful on the course in the past.

"We rotate the typical products that most people are comfortable with and I feel confident with," said Sheffield. "But our whole program is based more towards fighting this Pythium disease than anything else."

Previously in the 2002 and 2003 seasons, a variety of fungicide combinations were applied to control this "unknown disease" with minimal success. Sheffield's interest in **Insignia® fungicide** peaked after reviewing a 2004 study by Dr. Tredway that indicated the fungicide had been successful at treating this disease. After discussing the product with his BASF sales specialist, Sheffield chose to apply **Insignia** to his greens in early April as a curative treatment at a rate of 0.9 ounces per 1,000 square feet.

Though Sheffield says the application results weren't dramatic, they were significant. "Initially, we saw the

greens react a bit better with **Insignia** and they were a bit more resistant," said Sheffield. "The discoloration didn't go away completely, but it got better. **Insignia** appeared to stop the disease from spreading; there were fewer patches and not to the degree of severity that they were before."

After the first application, Sheffield noted control for up to three weeks. This product demonstration convinced Sheffield that **Insignia** needed to be part of his product purchases for the golf course and that **Insignia** would play a major role in the rotation of products for control of this disease.

"What we got out of using **Insignia** was that we have another product that has an effect on this Pythium species. It did a good job on other diseases as well – we didn't see any of the usual summer diseases we've combated in the past." Sheffield has continued to use **Insignia** in his 2005 rotation and uses a program of 0.9 ounces per 1,000 square feet. Applications made in the spring of 2005 provided four weeks of control.

Sheffield continues to apply the product preventatively and plans to make an application in the cooler fall season, when the disease is likely to infect the turf. In a 2004 study, Dr. Tredway found that **Insignia** provided both preventative and curative control of this unknown disease on bentgrass. Plots treated with **Insignia** exhibited significantly lower disease severity than the untreated control in the curative control study. In the preventative control study, **Insignia** plots were nearly free of disease symptoms 43 days after the last application was made in early June. Tredway noted in his study that preventative applications may be more effective in the fall and early spring, when this disease appears to be most active.

Sheffield will continue to unravel the mystery of this unknown turf disease like the rest of the superintendents in his area. He will keep his pulse on the research coming from North Carolina State University and share what he's seen with other superintendents, noting successes and failures at treating the pathogen.

"The bottom line is that adding **Insignia** to our mix has helped keep the Pythium problem in submission," said Sheffield. "It's nice to know that this product is successful in our rotation against this terrible disease."

For more information on **Insignia**, visit [www.turffacts.com](http://www.turffacts.com).

Always read and follow label directions.

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