Disease updates

Report

First report of *Colletotrichum cereale* causing anthracnose foliar blight of creeping bentgrass in Mississippi and Alabama

J.R. Young, M.S.; M. Tomaso-Peterson, Ph.D. ; and J.A. Crouch, Ph.D.

Anthracnose foliar blight begins with chlorotic leaf tips and progresses until entire leaves are necrotic.
Photos by M. Tomaso-Peterson

Colletotrichum cereale Manns sensu lato Crouch, Clarke, and Hillman (*C. graminicola* (Ces.) G. W. Wils.), is the causal agent of anthracnose foliar blight of creeping bentgrass (*Agrostis stolonifera* L.) and other grass species. Anthracnose foliar blight is most prevalent on creeping bentgrass during summer heat stress. Symptoms of anthracnose foliar blight progress from older to younger leaves with leaf tips becoming chlorotic and eventually developing complete leaf necrosis. Symptoms in turf stands appear as yellow-to-bronze, irregularly shaped patches often associated with a loss of turf density. When *C. cereale* is actively infecting the foliar tissue, appressoria can be observed microscopically in the leaf sheaths of creeping bentgrass. *Colletotrichum cereale* colonizes the foliar tissue, producing abundant acervuli, where conidia and setae develop.

Creeping bentgrass samples exhibiting symptoms of anthracnose foliar blight were collected from West Point, Miss., and Birmingham, Ala., in July 2006. The morphological characteristics of 44 anthracnose foliar blight isolates grown from material from infected plants were similar to those of *C. cereale*. Phylogenetic analyses of nucleotide sequences of three of the isolates indicated that all three isolates were *C. cereale*. Penn A-1 creeping bentgrass seedlings in 4-inch (10.2-centimeter) pots were inoculated with these three *C. cereale* isolates by spraying a conidial suspension on plants until water droplets were evident within the canopy. An uninoculated control sprayed only with distilled water was used for comparison.

Three replicates per *C. cereale* isolate were included when performing Koch's postulates. The inoculated creeping bentgrass seedlings were placed in covered plastic boxes to maintain humidity and incubated under 12 hours of fluorescent light with day/night temperatures at 95 F/82 F (35 C/28 C). After four days, the covers were removed, and creeping bentgrass was maintained an additional 14 days until symptoms and signs were observed on the foliage. *Colletotrichum cereale* was re-isolated from inoculated creeping bentgrass exhibiting symptoms of anthracnose foliar blight for all three isolates used. No acer-

Yellow to bronze patches are symptoms of anthracnose foliar blight of creeping bentgrass.

vuli, setae or conidial masses were observed on uninoculated control plants. To our knowledge, this is the first report of *C. cereale* causing anthracnose foliar blight on creeping bentgrass in Mississippi and Alabama.

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>>> Report

First report of brown ring patch caused by *Waitea circinata* var. *circinata* on *Poa trivialis*

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Brown ring patch is a newly described disease of cool-season turfgrass first reported in Japan on creeping bentgrass (*Agrostis palustris*) and later reported in California on annual bluegrass (*Poa annua*). The disease is characterized by patches or rings of discolored to blighted turfgrass that can range from a few inches to 3 feet in diameter. Affected turfgrass plants turn chlorotic and can be blighted from the crown to the leaf tips. Blight symptoms have been associated with fluffy white-to-cream aerial mycelium after extended incubation of the sample.

Symptoms, including patches of blighted turfgrass approximately 4 inches (10 centimeters) in diameter, were observed on roughstalk bluegrass (*Poa trivialis*) that had been overseeded onto a dormant Tifdwarf bermudagrass (*Cynodon dactylon*) putting green in Palatka, Fla. A sample was submitted by the superintendent in June 2005 because symptoms were confused with dollar spot, and a fungicide resistance issue was suspected. The sample produced abundant aerial mycelia after incubation. Morphology was consistent with *Waitea circinata* var. *circinata*. The teleomorph *W. circinata* var. *circinata* was not observed on plant material or culture plates.

The first report of brown ring patch on *Poa Trivialis* in Florida came from an overseeded Tifdwarf putting green. **Photo by P. Harmon**

Pots of Cypress roughstalk bluegrass that were one week postemergence were inoculated with the pathogen using 10 infested wheat grains. Plants were incubated at 77 F (25 C) in a sealed plastic bag with a moist paper towel in the bottom. Hyphae grew from the grains and colonized the grass. Individual plants began to turn chlorotic within three days, and more than 90% of the

turf in pots was dead after one week. The fungus was re-isolated from affected plants. Control pots were inoculated with uninfested wheat grains and showed no disease symptoms after one week. Inoculations were repeated twice more with the same results. To our knowledge, this is the first report of brown ring patch on *P. trivialis* in Florida.

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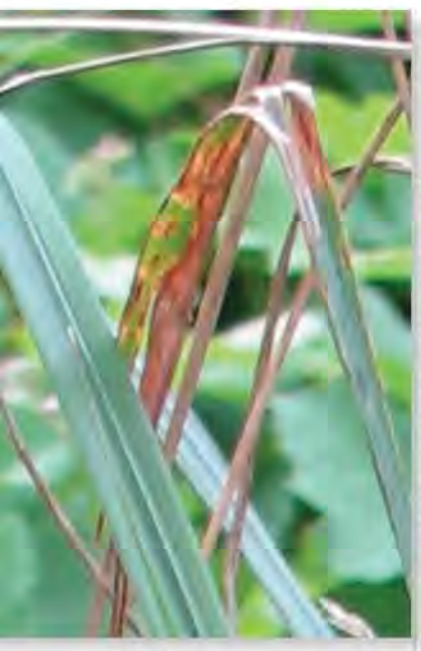
Report

First report of anthracnose disease of ornamental feather reed grass caused by *Colletotrichum cereale*



Top, Anthracnose appears on feather reed grass as small, yellowish brown oval or irregularly shaped spots on the leaf blades. **Below right,** A healthy feather reed grass plant. **Photos by J.A. Crouch**

J.A. Crouch, Ph.D., and J.C. Inguagiato, Ph.D.

Feather reed grass (*Calamagrostis* × *acutifolia* 'Karl Foerster') is a cool-season grass grown extensively as an ornamental plant throughout the U.S. In July 2005, severe foliar damage was observed in feather reed grasses in a residential garden in Barrington, N.J. Symptoms were small, yellowish brown, oval to irregularly shaped spots on the blades, with spread and coalescence of spots leading to eventual necrosis and plant death. Numerous acervuli with black setae diagnostic of fungi in the genus *Colletotrichum* were present on necrotic lesions. Two distinct fungi were isolated from diseased tissue and identified as *Colletotrichum gloeosporioides* and *C. cereale* on the basis of morphological, cultural, and molecular characteristics and DNA testing.

Pathogenicity was determined by inoculating healthy feather reed grasses (3-gallon [11.4-liter] pots) established 2 feet (61 centimeters) off-center in a mulched bed. Three replicate plants per treatment were sprayed with a solution of either *C. cereale* or *C. gloeosporioides* and an uninoculated control. Temperatures ranged from 66 F (19 C) to 97 F (36 C), and humidity varied between 31% and 79%. No symptoms were observed in uninoculated controls or plants inoculated with *C. gloeosporioides.* Plants inoculated with *C. cereale* developed disease symptoms within 21 days; the fungus was subsequently re-isolated from symptomatic leaves and confirmed as *C. cereale.*

To our knowledge, this is the first report of anthracnose of feather reed grass caused by *C. cereale* (formerly known as *C. graminicola*). Although *C. cereale* is known to inhabit numerous cool-season grass hosts, this is the first description of this fungus as a pathogen of an ornamental grass. Given the recent emergence of anthracnose epidemics caused by *C. cereale* on golf course turfgrass, the identification of this fungus as a pathogen of *Calamagrostis* × *acutifolia* highlights the need for nurseries and regulatory personnel to screen ornamental grasses such as feather reed grass for the presence of *C. cereale* so that the disease does not become problematic.

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