Thatch collapse disease

John Kaminski, Ph.D., is an associate professor of turfgrass science at Penn State University. Thatch collapse is one of many turfgrass diseases he and his students study. Kaminski can be reached at kaminski@psu.edu.

Q Talk a little bit about the fungal pathogen that causes thatch collapse disease.

The fungal pathogen we have isolated from numerous samples with thatch collapse disease is *Sphaerobolus stellatus,* a basidiomycete.

Q What are the symptoms associated with the disease?

We see the symptoms most often on putting greens due to the low mowing heights. On greens, the most common symptoms are a slightly depressed area of green turfgrass, anywhere from several inches to up to two feet in diameter, with longer, wider leaves in the depressed area. Since the turf in the depressed area is mowed at a higher height than the surrounding turf, it is noticeably greener and easier to see.

The crowns in the depressed area are white and healthy. The organism does not kill or thin the turfgrass plants. In some cases it is possible to see the mycelium in the soil just below the soil surface of the depressed areas.

Q Where on the golf course do you find thatch collapse disease?

We find thatch collapse disease most often on putting greens because of the low mowing heights of the green contrasts with the slightly higher mowing height of the depressed area. The disease can be found on collars, approaches, tees and fairways.

Usually the disease is found on a few greens on a golf course and there appears to be no pattern within a single green.

We have received thatch collapse disease samples from velvet bentgrass, creeping bentgrass and annual bluegrass greens. In Australia and New Zealand thatch collapse also occurs on bermudagrass greens.

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The one common element among all the samples in which we have positively identified thatch collapse disease, is a high level of organic matter.

Q What are your thoughts on why this disease is becoming a problem now?

I think thatch collapse has probably been around for several years, but it was mistaken for other diseases, such as fairy ring. With increased awareness of the disease, superintendents have submitted more samples for identification.

Q What steps can be taken to minimize damage from the disease?

We are still learning how to manage the disease and at this point we suggest that a superintendent undertake an aggressive thatch management program that would include aggressive cultivation and frequent topdressing to reduce the severity of the disease.

There are only limited data on fungicide control strategies. If a superintendent wanted to try a fungicide, we suggest using a fungicide that is effective at controlling fairy rings since the causal agent of thatch collapse disease is a basidiomycete, like the causal agent of many fairy rings. The challenge is to get the fungicide into the soil where the mycelium is located. Since the organism does not kill the plant, getting the fungicide into the plant isn't as important.

Q Anything else you would like to add?

In only about 30 percent of the samples we receive are we able to identify thatch collapse disease. If you suspect that you have thatch collapse disease, remove a small plug of turfgrass with two or three inches of soil attached and place the plug in a clear container. Place the container in a window where it will receive ample sunlight. In a week or two, look for the fruiting bodies of the fungus growing out of the plug. There are a number of places on the internet where you can find pictures of the fruiting bodies.

In a couple of days it is likely that you will see the mycelium growing in the soil below the plug. The depth of the mycelium tells you how deep you have to get a fungicide in the soil to provide some control of the disease.

Editor's Note

If you would like to submit a sample to determine if the turf has thatch collapse disease, contact John Kaminski at kaminski@psu.edu.

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