

Why is it so Difficult to Control Anthracnose?

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Anthracnose used to be predominantly a summer stress disease affecting mostly turfgrass foliage. It would respond well to most fungicides when accompanied by cultural management. This is no longer the case. Why?

Golf course turf management has changed dramatically in recent years. Putting greens, it seems, are mowed increasingly short and there are many more rounds of play each year. Golfers demand faster greens, so superintendents, against their better judgment, keep them on very low nitrogen fertilizer, with minimal water and repeated sand topdressing to produce hard and fast conditions.

Anthracnose is a stress disease. It is caused by a fungus that infects weakened plants. One aspect that makes this disease difficult to control is that the fungus produces abundant sticky spores that can be easily tracked to new areas by machinery and feet. The increased stress on turfgrass has also resulted in the common occurrence of the basal rot or crown rot stage of the disease. Once the fungus has infected the growing point of the plant, recovery is much slower, if it occurs at all. Anthracnose is now commonly seen throughout the growing season - even in cool weather.

Factors that reduce the ability of the turfgrass plant to "outgrow" the pathogenic fungus:

- low mowing height
- compaction of soil
- low N conditions
- traffic
- poor drainage

On golf courses, anthracnose commonly appears in the following situations:

1. Right after a tournament. Typically, the turf has typically been double-cut repeatedly, groomed excessively, and has received more traffic than usual.

2. On greens that are:

- too small
- poorly drained
- compacted
- have poor air movement

- receive sand topdressing that is brushed in during disease outbreaks

Most superintendents use the following cultural practices to help mitigate anthracnose:

- temporarily increasing mowing height during disease outbreaks and going into heat stress periods with or without disease (prevention!)
- skipping the clean-up pass during disease outbreaks and during heat stress periods
- regular aeration - core aeration in spring and fall, spiking or hydroject during heat improve drainage where needed
- improving air movement through pruning of trees and landscaping
- minimizing leaf wetness by early mowing or whipping of dew
- syringing turf in the heat of the day with care to continue into the late afternoon when needed
- washing mowers when moving from affected areas
- traffic pattern modification
- moving cups more frequently
- skipping sand top-dressing during disease outbreaks - sand wounds plants
- maintaining sufficient N and water for good turf growth

Clearly, green speed may suffer during as a result practices, but they may keep the turf alive. Extensive modification, even rebuilding, should be considered for small greens with limited air movement and poor drainage. Once anthracnose develops on the "bad" greens, it can often spread to less stressed greens.

When cultural practices are not sufficient and chemical control is required, it is best to combine chlorothalonil with a systemic/penetrant fungicide. Early applications while the disease is still in the foliar (leaf) stage are most effective. Applications for the foliar stage should be a combination of a DMI fungicide (e.g. myclobutanil-Eagle, propiconazole-Banner or triadimenol-Bayleton) plus chlorothalonil. When the disease has progressed to the crown/basal rot stage, it is recommended that a systemic fungicide be applied and watered in while still wet on the leaves to deliver it to the crown area. Choices include thiophanate-methyl (e.g. Cleary's 3336 or Fungo), a DMI fungicide, or a strobilurin/QoI fungicide (azoxystrobin or trifloxystrobin). This should be followed by a separate application of chlorothalonil that is not watered-in because it is a contact that needs to coat the leaves to make a protective layer.

Anthracnose is not always easy to diagnose. If you are unsure about the presence of this disease, please consult the [UMass Extension Plant Diagnostic Lab](#) for confirmation.