

Best Management Practices: Anthracnose Management and Control

Description

Anthracnose is a senectopathic disease, which are diseases that develop on dead, or senesced leaf material. In severe cases, anthracnose can also develop on green tissue. This disease is most severe on annual bluegrass and creeping bentgrass managed under golf course putting green conditions. Stressful conditions on annual bluegrass create a susceptible host for anthracnose development. These conditions can vary from winter damage coming into spring to heat stress in summer. Severe infestations can lead to considerable reduction in turfgrass density and playability.



Environmental Conditions Favoring Disease Development

Basal Rot - This phase of anthracnose can occur throughout the season. It can start to develop during cool, wet periods of spring when temperatures range from 60 to 75°F and annual bluegrass has been weakened by winter stress or other factors coming into spring. However, Basal Rot tends to be most severe in summer and fall. Nitrogen deficiency and stress from low mowing heights, compaction, and drought stress can increase basal rot development.



Foliar Blight – Heat and drought stress in addition to other stress factors mentioned above weaken annual bluegrass or creeping bentgrass causing foliar blight. Typically, disease development begins when temperatures are between 85 to 95°F for at least 10 days under extended periods of leaf wetness.

Symptom and Identification

Symptoms on infected annual bluegrass plants develop small, irregular patches yellow to orange in appearance. Creeping bentgrass infected by anthracnose tend to develop bronze patches varying in size. Discoloration begins at the leaf tip and progresses down the leaf blade. Under severe infestations, small tan lesions may develop on green leaf material. One key characteristic of anthracnose is the production of spiny, black structures on necrotic tissue called acervuli, which are visible via hand lens.

Management

Cultural:

Several management practices have an impact on anthracnose severity most notably nitrogen and potassium fertility, mowing height, topdressing, and irrigation. Research has shown that 0.4 – 0.8 lb soluble N/1000 ft² applied monthly in spring following by light, frequent applications throughout summer up to a total of 3.6 lb N/1000 ft²/yr can significantly reduce anthracnose severity by maintaining healthy turfgrass growth. Ensuring adequate levels of potassium are being applied will increase the plant's ability to endure stress. Increasing mowing height and incorporating rolling has shown to decrease anthracnose infestation. As mowing is a stress, minimizing that stress increases turfgrass competition. Spring topdressing followed by frequent topdressing through the growing season will reduce thatch, improve ball roll, and insulate plant crowns. Properly timed irrigation and hand syringing to avoid wilt and minimize leaf wetness period will prevent drought stress.

Chemical:

As proper cultural management practices are the foundation for healthy, vigorous turf, fungicides are an important tool to further protect playing surfaces from damage. There are several classes of chemistry shown to be effective. However, fungicide resistance has developed in anthracnose. A sound rotational program that includes Fame™ +C is vital to a successful long-term anthracnose fungicide program. Fame™ +C, a mixture of fluoxastrobin and chlorothalonil, applied on a 14 day interval is an effective tool for anthracnose management. The combination of both systemic and contact fungicides provides complete protection for anthracnose and other diseases like dollar spot and patch diseases while providing an alternate mode-of-action for resistance management.

References

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