Solution Sheet

Leaf Spot & Melting Out

The Problem

Leaf spot and melting out diseases of both warm and cool-season turf are caused by fungal pathogens in the genera *Dreschlera*, *Marielliottia*, *Bipolaris* and *Exserohilum*. Formerly, diseases caused by these were grouped into Helminthosporium leaf spot and other diseases. All warm and cool-season turfgrasses are susceptible to leaf spot disease when environments are conducive for the pathogen growth.

Collectively, the pathogens responsible for causing leaf spot can be active throughout the year due to their wide temperature ranges. For example, on cool-season turfgrass, leaf spot diseases caused by *Dreschlera* are most problematic in the spring and fall when temperatures are between 60°F-65°F. However, the leaf spot diseases caused by *Bipolaris* are most active during summer.

On warm-season turfgrass, *Bipolaris* is most damaging to the foliage during the spring and fall months. During summer, certain species of *Bipolaris* will move towards the crown and cause crown and root rot. On warm-season turf, leaf spot is particularly damaging when secondary stresses are present, like during spring and fall when the turf is exposed to periods of cool, wet weather under low light conditions or during the summer when heat and/or drought stress is present.

What To Look For

Leaf spot and melting out diseases cause foliar symptoms as well as crown, stolon and root rots. Symptoms on cool-season turf include the development of irregular patches of reddish-brown, thinned turf. Dark lesions with tan to white centers develop on leaves and may completely blight out infected tissues. Leaf lesions may be confused with those caused by gray leaf spot. Brown to reddish-brown lesions and streaks may be associated with some fescues and ryegrasses. Additionally, infected crowns and stolons will often take on a dry rotted appearance.

On warm-season turf, *Bipolaris* leaf spot is an aggressive disease that can progress to crown and root rot in warm-season turf. Spores and thus symptoms can move with mowers or surface water, and the disease can coalesce to damage large areas. Within a green, leaf spot and melting out are worse in areas where frequent wear occurs, such as mower clean-up laps, areas of concentrated foot traffic or low areas where surface water run-off collects. Algae often establish in greens thinned by leaf spot and melting out, which then can seal off the surface and prevent gas exchange of the root zone.

Symptoms on warm-season turf include the development of irregular patches of light-tan to brown blighted or thinned turf. Leaf lesions appear as dark green to black, while stem lesions will have a dark or purplish color. On greens and other low-cut turf, distinct leaf lesions may not form, but plants will take on a blighted, dark, water-soaked appearance. Lowest, oldest leaves are most susceptible, while the youngest central growing point can remain green and healthy.

The signs of the pathogen can be similar for both cool- and warm-season turf and include the presence of dark, oval- or cigar-shaped conidia formed on infected tissue. On warm-season turf, the infected roots, stolons and crowns may be covered with dark runner hyphae that may be mistaken for *Gauemannomyces* or *Ophiosphaerella* species associated with take-all root rot or spring dead spot.

The Solution

Leaf spot and melting out diseases often occur under stress conditions. Proper cultural practices will help mitigate these diseases. Some cultural practices include raising the mowing height, mowing regularly to prevent scalping, and avoiding excessive nitrogen and thatch. Also, improving air movement, soil drainage and using proper irrigation practices can reduce the time leaves are exposed to moisture. If plants are experiencing heat and drought, syringe the turf to prevent stress and wilt.

For cool-season turf, start preventive fungicide applications in the spring and/or fall, when average maximum air temperatures range from 60°F-65°F to protect your turf from diseases caused by *Dreschlera*. Continued applications during summer are also necessary for control of leaf spot caused by *Bipolaris*.

On warm-season turf, initiate preventative fungicide applications in the winter/spring when average maximum air temperatures range from 55°F-85°F and again in the late summer/fall as daytime temperatures decline from 85°F-55°F. Additional applications may be needed when weather conditions are extreme; either excessively wet/overcast or hot/dry conditions can stress warm-season turf and trigger leaf spot outbreaks.

Interface® Stressgard® is the premier solution for controlling leaf spot and melting out. The two active ingredients in Interface Stressgard control the fungi that cause these diseases and the inclusion of the Stressgard formulation technology helps reduce the additional stresses imposed on the plant. Other fungicides such as 26GT®, Exteris® Stressgard, Tartan® Stressgard, Castlon™ and Densicor® [2(ee) label recommendation] also have broad-spectrum disease control for leaf spot and other diseases that may be active at the same time. On putting greens, consider rotating these chemistries with Signature™ XTRA Stressgard® and a contact fungicide for enhanced turfgrass quality and improved photosythentic efficiency in low-light conditions.

Leaf Spot & Melting Out Solutions

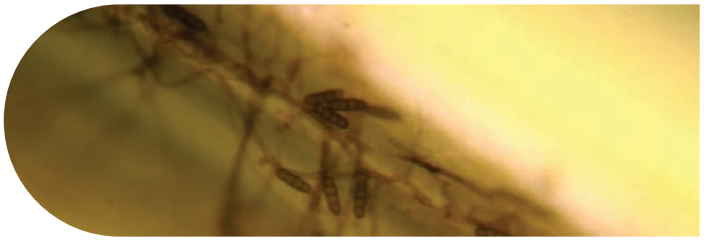
Solution[1]	Rate (per 1,000 sq. ft.)	Application Interval
Interface® Stressgard®	3.0 – 5.0 fl. oz.	14 – 21 days (greens & tees) 14 – 28 days (fairways & other turf areas)
26GT®	3.0 – 4.0 fl. oz.	14 – 21 days (greens & tees) 14 – 28 days (fairways & other turf areas)
Exteris® Stressgard	3.0 – 6.0 fl. oz.	14 – 28 days
Tartan® Stressgard	1.0 fl. oz. 2.0 fl. oz.	14 days 21 – 28 days
Densicor® - 2(ee) recommendation	0.196 fl. oz.	14 – 21 days
Castlon™	0.18 - 0.36 fl. oz.	14-21 days

[1]See the product labels for complete use instructions. Not all products are labeled in all states. Always read and follow label instructions carefully.

Leaf spot symptoms on individual leaves of Kentucky bluegrass. (Envu)

Bipolaris leaf spot of a Penncross creeping bentgrass green. Infections begin as small spots and then melt out into reddish patches of thinned turf. (Envu)

Leaf spot on bermudagrass has a red to purple color and if untreated can progress to melting out which kills crowns/stolons. (Envu)



Conidia of *Bipolaris* spp. on infected leaves. Microscopic examination of symptomatic plants is the best way to confirm the identity of leaf spot and melting out. (Phil Harmon, University of Florida)