



# BAYER SOLUTIONS

## Anthracnose

### The Problem:

Anthracnose foliar blight and basal rot caused by *Colletotrichum cereale*, are primarily diseases of annual bluegrass and creeping bentgrass greens under stress conditions. The disease is most common on putting greens and most often occurs mid-summer under hot conditions or in fall-spring under cold wet conditions. Foliar blighting develops on older leaves first and is most common in the summer. Basal anthracnose can develop from foliar blighting or independently during periods of cold, wet weather. Since it often occurs when turf growth potentials are low, recovery from anthracnose can be difficult.

### What to Look for:

Symptoms develop as irregular patches of chlorotic turf that progress to a bronze to orangish colour in advanced stages of the disease. Areas start off as patches a few centimetres in size and can coalesce into larger blighted areas. Black acervuli with hair-like setae are distinctive signs of anthracnose; mycelia are not produced on the outside of the plant. Acervuli can be found on the older senescent leaves first, but can be present on green tissue in advanced stages of disease. Plants affected by basal rot have a black discolouration of the stems and crowns; acervuli may not be present when the disease develops under cold conditions.

### Bayer Solutions:

Anthracnose is a stress disease that must be managed by promoting plant health, such as following sound agronomic practices and timely use of preventive fungicide programs. A comprehensive best management plan has been recently published by Murphy *et al.* (Golf Course Management May, 2012) based on five years of national research. Key cultural controls include:

- i. Adequate spring and summer nitrogen (N) with 0.1 to 0.15 lb N/1,000 sq ft applied weekly in the summer months,
- ii. Frequent sand topdressing,
- iii. Watering at 60-80% base evapotranspiration,
- iv. Keeping mowing height above 3 mm and using rolling and double mowing to maintain green speeds, and
- v. Using regular plant growth regulator applications to control plant size and seed head development.

Fungicide resistance is a problem for anthracnose; QoI and benzimidazole fungicides may not provide adequate control due to resistance, but other fungicide classes remain effective for anthracnose control. Preventive fungicides should be applied prior to periods of plant stress; these include applications in summer and in colder conditions when stress is expected. Summer preventive programs should start when average soil temperatures at a 5-10 cm depth are 18-20°C and should be maintained through fall aerification.

# Anthracose Solutions

Key Bayer solutions for anthracose include Signature Stressgard™ tank mixes, Trilogy Stressgard™, Interface Stressgard™, Compass® 50WG and Mirage Stressgard®. Signature tank mixes have shown excellent control of anthracose and summer stress; Interface is a broad spectrum, non-DMI option for all turf surfaces; Mirage provides powerful control of anthracose and summer patch with low plant growth regulation effects; Compass has consistently performed among the top QoI fungicides for anthracose control; and Trilogy combines a DMI, QoI, and dicarboxamide fungicide for broad-spectrum disease control. Stressgard Formulation Technology products improve plant health to reduce the effects of stress conditions that promote anthracose.

SOLUTION	RATE (PER 100 m <sup>2</sup> )	APPLICATION INTERVAL *
Signature Stressgard	120 g	14 days**
Interface Stressgard	120 - 160 mL	14 - 21 days (greens)
	95 - 160 mL	14 - 28 days (fairways)
Mirage Stressgard	32 - 64 mL	14 - 21 days
Compass 50WG	3.8 - 4.6 g	14 - 21 days
Trilogy Stressgard	65 mL	14 days (basal rot only)

\*See fungicide labels for complete details. Always read and carefully follow label instructions.

\*\*For best control under high disease pressure, combine with 100 -120 g Daconil Ultrex OR 120 mL Interface Stressgard.



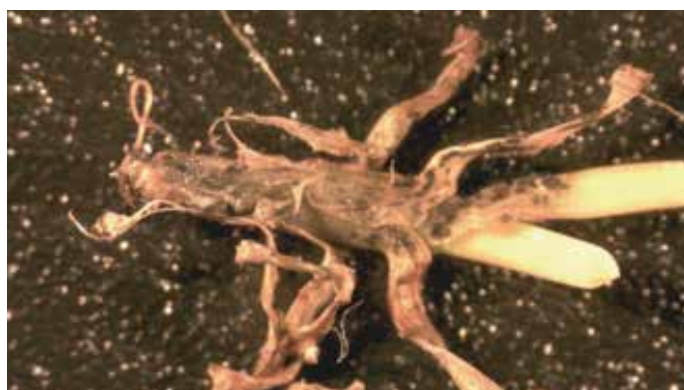
Anthracose symptoms on annual bluegrass. Photo: Paul Giordano, Bayer.



Individual plants showing foliar blight. Photo: Frank Wong, Bayer.



Acervuli on older leaves. Photo: Frank Wong, Bayer.



An individual plant showing foliar blight and basal rot symptoms. Foliar blight is most common in the summer and may develop into basal rot, but basal rot can also develop independently, usually in cool, wet conditions. Photo: Frank Wong, Bayer.