



# BAYER SOLUTIONS

## Brown Patch

### The Problem:

Brown patch is a common disease caused by the soilborne fungus *Rhizoctonia solani*. It causes foliar blighting of nearly all cool-season turfgrass species which include creeping bentgrass, perennial ryegrass, *Poa* spp. and tall fescue. Among cool-season turf, Kentucky bluegrass has good levels of resistance whereas colonial bentgrass is highly susceptible.

### What to Look for:

Brown patch is most active in warm, wet conditions, when minimum temperatures are above 15°C and daily leaf wetness periods are 10 hours or more. Night time temperatures above 20°C with extended leaf wetness are associated with severe brown patch outbreaks on golf course turf. Disease development is often greater in areas with poor drainage. Activity is often triggered by thunderstorms that cause localized flooding.

Brown patch occurs in irregular circular patches about 0.3-1 m in size. Early in the morning, the outermost brown patch edge may be bordered by a 'smoke ring' of mycelia. Initial infection has a water-soaked appearance, but as the foliage dries the infected leaves will become necrotic/brown. On high mowed turf, irregular tan lesions with a chocolate -red border may be seen on leaf blades.

Brown patch can be confused for *Pythium blight*. Rapid diagnosis and selecting the right treatment are essential for management of brown patch.

### Bayer Solutions:

Brown patch management requires an integrated approach. Avoid excessive amounts of nitrogen (N); 'spoon-feeding' N at low rates in the summer is recommended. Schedule irrigation from midnight to early morning to minimize periods of prolonged leaf wetness. Increase air movement by addressing excessive tree and shrub growth or installing fans in areas near golf greens where stagnate air is a problem can reduce brown patch pressure significantly.

Whenever possible, the mowing height should be adjusted higher because low mowing heights are associated with greater brown patch development. Core aeration will reduce thatch accumulation and this also helps to improve drainage. Avoidance of highly susceptible turf species, such as colonial bentgrass, is warranted in humid areas where brown patch is most problematic.

Preventive applications are more effective than curatives; brown patch causes disease quickly and significant injury to turf can occur prior to curative treatment. Additionally, all cool-season turfgrasses have poor recuperative potential during midsummer, a time when brown



*Brown patch affecting a creeping bentgrass fairway in late summer. Photo taken by Derek Settle, Bayer CropScience*



*Brown patch severely affecting a Penn A4 creeping bentgrass nursery maintained as a golf green in early summer. Photo taken by Derek Settle, Bayer CropScience*



*Crenshaw creeping bentgrass with leaf wetness and active brown patch mycelium present. Photo taken by Derek Settle, Bayer CropScience*

patch activity peaks. Preventive fungicides to target brown patch should begin late spring/early summer when low (night) temperatures exceed 15°C consecutively for two to three days.

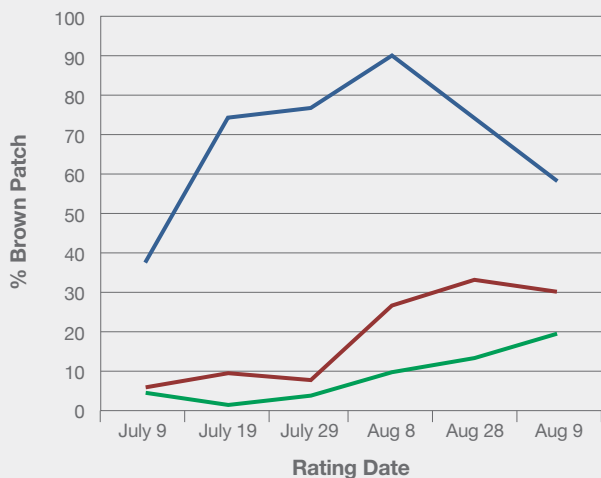
There are a number of choices for controlling brown patch, and all Bayer Solutions provide added control of other diseases that can be active at the same time. Trilogy provides broad spectrum control of brown patch, anthracnose and dollar spot. Compass and Chipco Triton are great broad spectrum choices for brown patch as well. Rovral Green GT (iprodione) provides additional control of dollar spot and leaf spot diseases.

Fungicides with StressGard Formulation Technology can help reduce summer stress on turfgrass, increasing recovery potential. Trilogy SC and Chipco Triton both provide StressGard benefits and fungicidal activity to directly control brown patch. Alette Signature tank mixes promote plant health and reduce the effects of summer decline and stress including brown patch.

| SOLUTION               | USE RATE PER 100 M <sup>2</sup> | INTERVAL*                                  |
|------------------------|---------------------------------|--|
| <b>Trilogy SC</b>      | 65 ml                           | 21 days                                    |
| <b>Rovral Green GT</b> | 125 – 250 ml                    | 14-21 days                                 |
| <b>Compass WP</b>      | 4.6 g - 6.1 g                   | 21 days (preventive)<br>14 days (curative) |
| <b>Chipco Triton</b>   | 32 ml                           | 14-21 days                                 |

See label for further application details. Always follow label instructions.

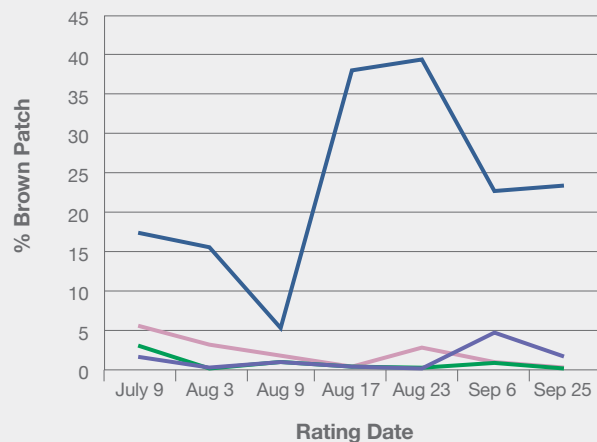
### 2012 trial conducted by Dr. B. Clarke, Rutgers University



— Untreated     — Trilogy     — Daconil Ultrex - 115ml + Banner Maxx - 30ml

Treatments were applied on a 21 day interval, curatively when brown patch infestation exceeded 1% of the turf area. Applications were made in 8 L water per 100m<sup>2</sup>. All treatment rates are per 100 m<sup>2</sup>.

### 2005 trial conducted by Dr. J.M. Vargas, Michigan State University



— Untreated     — Compass - 4.6 g     — Heritage - 6.1 g     — Daconil Ultrex - 100 g

Treatments were applied curatively on a 21 day interval when brown patch infestation exceeded 1% of the turf area. Applications were made in 8 L water per 100m<sup>2</sup>. All treatment rates are per 100 m<sup>2</sup>.