



# Talking Turf Golf Guide



# Contents

|                                                                     |        |
|---------------------------------------------------------------------|--------|
| <b>Diseases</b>                                                     |        |
| Anthrachnose                                                        | 15-17  |
| Bipolaris Leaf Spot                                                 | 18     |
| Brown Patch                                                         | 49     |
| Brown Ring Patch (Waitea Patch)                                     | 50     |
| Dollar Spot                                                         | 19     |
| Dollar Spot with the Smith-Kerns Model                              | 20-27  |
| Fairy Ring                                                          | 29     |
| Grey Leaf Spot                                                      | 30     |
| Large Patch                                                         | 31     |
| Microdochium Patch                                                  | 32     |
| Powdery Mildew                                                      | 33     |
| Pythium Blight                                                      | 34     |
| Pythium Root Dysfunction                                            | 39     |
| Red Thread                                                          | 41     |
| Rhizoctonia Patch Diseases - Large Patch, Brown Patch, Waitea Patch | 47-48  |
| Rusts: Crown, Leaf and Stem                                         | 42     |
| Seedling Damping Off                                                | 36-37  |
| Spring Dead Spot                                                    | 43     |
| Superficial Fairy Ring                                              | 29     |
| Summer Patch                                                        | 44     |
| Take-all Patch                                                      | 45     |
| Take-all Root Rot                                                   | 46     |
| <b>Fungicides</b>                                                   |        |
| Banner Maxx                                                         | 51-53  |
| Daconil Weatherstik                                                 | 54-55  |
| Heritage                                                            | 56-57  |
| Instrata                                                            | 58-59  |
| Subdue Maxx                                                         | 35     |
| Talking Turf Clearout                                               | 40     |
| <b>Insecticide</b>                                                  |        |
| Meridian                                                            | 64     |
| Karate                                                              | 65     |
| <b>Herbicides</b>                                                   |        |
| Fusilade                                                            | 67     |
| Casper                                                              | 68-69  |
| Goosegrass Control                                                  | 70     |
| Pennant Magnum                                                      | 71     |
| <b>Plant Growth Regulator</b>                                       |        |
| NoMow                                                               | 72-73  |
| Growing Degree Days                                                 | 74-77  |
| <b>Pigment</b>                                                      |        |
| Ryder                                                               | 78-79  |
| <b>Wetting Agent</b>                                                |        |
| Qualibra                                                            | 4-5    |
| <b>Foliar feeds and Biostimulants</b>                               |        |
| Talking Turf Star                                                   | 6      |
| Talking Turf Foliar                                                 | 8      |
| Talking Turf Enerlite                                               | 9      |
| <b>Application Timing Chart</b>                                     |        |
| Resistance Management - Chemistry Rotation                          | 10-11  |
| Optimum Application Timing                                          | 12; 66 |
| Disease by turf variety                                             | 13     |
| Disease Timelines                                                   | 62-63  |
|                                                                     | 80-81  |



# Soil temperatures are key indicators for disease

Every disease is triggered by a different soil temperature.

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Distributed in South Africa by Talking Turf cc Registration number: 2004/106765/23



**Annual soil and nematode testing is highly recommended.**

**Talking Turf forms an alliance with ASC Research Pty (Ltd) for soil, water and disease testing.**



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**Kraaifontein**  
**7569**





# Consistent performance **wet or dry**

Stays drier in wet conditions; conserves moisture when its dry

**Penetrant AND Retainer action**

**Improve water use efficiency**

**Manage dry patch**

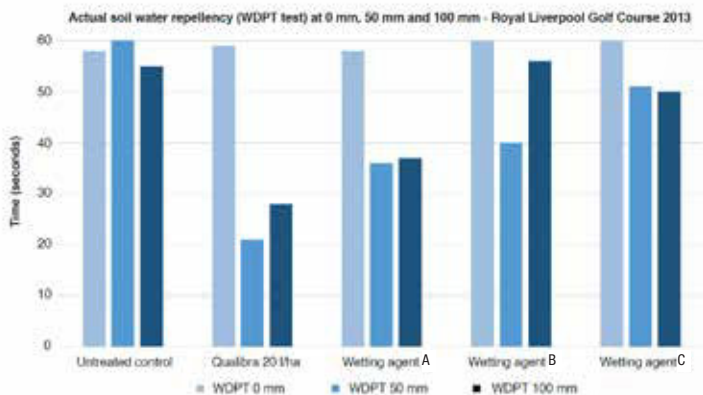
## Application information

- **Spring/Summer application rate:** 10-20 l/ha, 21-28 day intervals
- **Autumn/Winter application rate:** 5 l/ha, 21-28 day intervals
- **Irrigation after application rate:** 5mm
- Great to tank mix with Banner Maxx, Heritage, Subdue Maxx when targeting root borne diseases

## Recommended period of use

Penetrant and retainer

Apply before and during periods of drought for best results



# Deeper Thinking



# Star<sup>+</sup>

## STIMULATES ROOT DEVELOPMENT, IMPROVES DRAINAGE, SALINE & SODIC CONDITIONS IMPROVES SOIL POROSITY & BULK DENSITY

### APPLICATION GUIDELINES:

Apply the product in a water volume of 300 - 750 litres/ha

Apply early morning or late afternoon

Foliar feed 2- 5 litres/ha; Soil drench 5-20 litres/ha

### TANK MIX OPTIONS:

#### GREENS:

Talking Turf Star can be tank mixed with Talking Turf Foliar, Talking Turf Enerlite & Ryder, OR any of the following Syngenta products  
– Heritage, Daconil Weatherstik, Banner Maxx, Ryder, Instrata, Subdue Maxx

#### FAIRWAYS, TEES, SPORTS FIELDS:

- **Tank mix option 1:** 5-20 litres/ha Qualibra + 5-20 litres/ha Talking Turf Star (match Qualibra rate) + 300 ml – 1.5 litre/ha Ryder + NoMow (1 - 1.5 litres/ha)
- **Tank mix option 2:** 5-10 litres/ha Talking Turf Star + 8-12 kg/ha Talking Turf Foliar + 1 - 1.5 litres/ha NoMow
- **Spring & Autumn:** 5-10 litres/ha Talking Turf Star + 0,250g -1.4 litres/ha Heritage + Banner Maxx (Large Patch control on Kikuyu. Repeat 21 days later) + 1 - 1.5 litres/ha NoMow (improve density, rooting & colour)
- **Spring:** 5-10 litres/ha Talking Turf Star + 1 kg/ha Meridian (repeat 6 weeks later) + 250g Heritage + 1,4 litres/ha Banner Maxx (repeat 21 days later)

### SALES & TECHNICAL SUPPORT:

[sales@talkingturf.co.za](mailto:sales@talkingturf.co.za)



# 3 IN 1 COCKTAIL COMBO

TALKING TURF  
**Folia**  
FEED

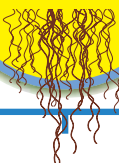
TALKING TURF  
**Star**<sup>++</sup>

 **NoMow**<sup>®</sup>  
Plant growth regulator

**Colour  
kick &  
plant  
health**



**Rooting  
& plant  
health**



**Improved  
density &  
playability**

## THE PERFECT ALL IN ONE SOLUTION



# TALKING TURF **Foliar** **FEED**

## **WATER SOLUBLE FOLIAR FEED FOR TURF GRASS. A GREAT TOOL TO INCREASE PLANT HEALTH & COLOUR.**

### **GREENS**

**Apply every 7-14 days when the soil temp is above 8°C**

**This product is not required once your Fe levels exceed 120ppm in your soil test.**

600-750 litres/ha water

8 kg/ha Talking Turf Foliar

300-500 ml/ha Ryder to improve heat and cold tolerance

### **FAIRWAYS, TEES, SEMI-ROUGH, SPORTS FIELDS**

**Apply when your soil temp is above 8°C or higher. 300-750 litres/ha water**

Apply 8 -12 kg/ha Talking Turf Foliar every 14-28 days

**TEES** - Add 1 - 1.5litre/ha MoMow every 21-28 days to improve root, colour & shade tolerance

**Cool Season Fairways** - Add 250 - 500 ml/ha NoMow & 1 litre/ha Ryder every 14-21 days to improve density, rooting, heat tolerance & reduce clippings

**Bermuda Fairways** - Add 1 - 1.5 litre/ha NoMow every 21-28 days to improve rooting, colour, density, playability, reduce scalping & clippings

**Kikuyu Fairways** - Add 1 - 1.5 litre/ha NoMow every 21-28 days to improve rooting, colour, density, playability, reduce scalping & clippings

**All Semi-rough** - Add 1 - 1.5 litre/ha NoMow every 21-28 days to improve rooting, colour, shade tolerance, density & reduce clippings

**Sports Fiends** - follow fairway guidelines if your cutting height is 10-20mm

- follow semi-rough guidelines if your cutting height is 21-40mm

## **TRIED & TESTED ON WARM & COOL SEASON TURF SINCE 1999**

Application rates supplied in this label are only guidelines. Such application rates should be adapted to local conditions such as difference of climate, soil type, temperature, variety of grass, application methods and irrigation/ fertigation systems might necessitate variation of the guideline applications given. To establish the correct application rate for environmental and crop specifics, the product should be applied based on the recommendations of a qualified technical advisor or consultant.





# Enerlite

(Registration number K11304) 10 % N

**HIGH ENERGY SOURCE FOR PLANTS**  
**IMPROVES THE METABOLISM OF PLANTS**  
**KEY TOOL FOR LOW LIGHT CONDITIONS AND**  
**INCREASING SHADE TOLERANCE**

**APPLICATION GUIDELINES:**

Apply the product in a water volume of 300 - 750 litres/ha

Apply early morning or late afternoon

Apply 10 litres/ha every 14 days and water in with 3-9 minutes water

**TANK MIX OPTIONS:**

Potassium Nitrate, Talking Turf Star, NoMow, Ryder

## Whatever it Takes!

**SALES & TECHNICAL SUPPORT:**

[sales@talkingturf.co.za](mailto:sales@talkingturf.co.za)

Company Registration number: 2004/106765/23. VAT number: 4010223776. P.O. Box 1434, Malalane 1320



# Application timing chart

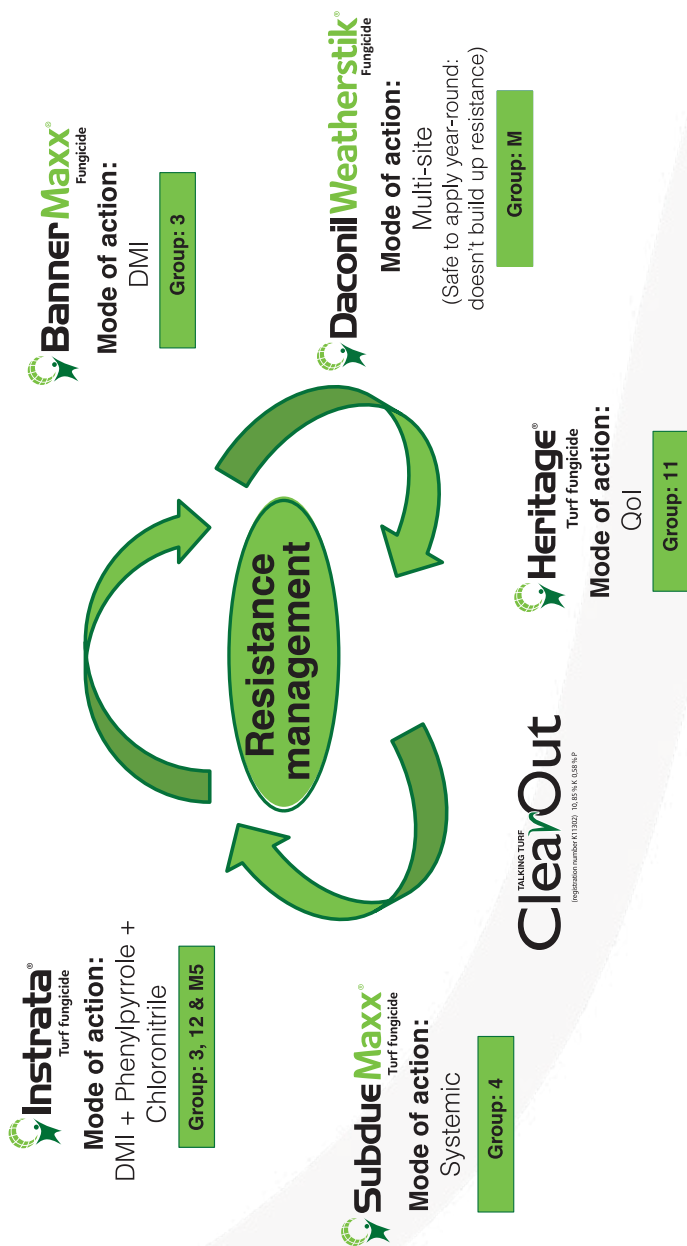
| Disease                                                                             | Preventative Timing   | Syngenta Integrated Pest Management |                       |                      |
|-------------------------------------------------------------------------------------|-----------------------|-------------------------------------|-----------------------|----------------------|
|                                                                                     |                       | Banner Maxx                         | Daconil WS            | Heritage             |
|                                                                                     |                       | 3                                   | M                     | 11                   |
|                                                                                     |                       | 3Lt/Ha                              | 5Lt/ha                | 500g - 1kg/ha        |
|                                                                                     |                       | 156g/L Propiconazole                | 720g/L Chlorothalonil | 500g/kg Azoxystrobin |
|                                                                                     |                       | Systemic                            | Contact               | Systemic             |
|                                                                                     |                       | Safe                                | Very Safe             | Very Safe            |
| Anthracnose                                                                         | Sep - Feb             | ***                                 | ***                   | ***                  |
| Brown patch                                                                         | Sept - Apr            | *                                   | **                    | ****                 |
| Dollar Spot                                                                         | Sep - Apr             | ***                                 | **                    |                      |
| Fading Out                                                                          | Feb - Apr             |                                     |                       |                      |
| Fairy Ring                                                                          | Sep - Apr             |                                     |                       | **                   |
| Grey Leaf Spot                                                                      | Oct - Feb             | *                                   | ***                   | ***                  |
| Large Patch                                                                         | Mar - May & Sep - May | **                                  |                       | ***                  |
| Leaf/stem/strip rust                                                                | Oct - Dec             | ***                                 | ***                   | ***                  |
| Leaf Spot / Melting out                                                             | Sep - May             | *                                   | ***                   | ***                  |
| Microdochium Patch                                                                  | Apr - Aug             | ***                                 | ***                   | **                   |
| Necrotic Ring Spot                                                                  | Mar - May & Sep - Nov | ***                                 |                       | ***                  |
| Powdery Mildew                                                                      | Aug - Sep             | ***                                 |                       | ***                  |
| Pythium Blight                                                                      | Nov - Apr             |                                     |                       | **                   |
| Pythium Root Rot                                                                    | Nov - Apr             |                                     |                       | **                   |
| Red Thread                                                                          | Feb - May             | ***                                 | ***                   | ***                  |
| Rhizoctonia Leaf & Sheath Spot                                                      | Jan - Mar             | ***                                 |                       | ***                  |
| Seedling Damping off                                                                | After Seeding         |                                     |                       |                      |
| Spring Dead Spot (SDS)                                                              | Feb - May             | **                                  |                       |                      |
| Summer Patch                                                                        | Dec - Feb             | **                                  |                       | ***                  |
| Take All Patch                                                                      | Oct - May             | **                                  |                       | ***                  |
| Take All Root Rot                                                                   | Feb - Apr             |                                     |                       | **                   |
| Waitea Patch                                                                        | Sept - Mar            | ***                                 |                       | ***                  |
| White Grubs                                                                         | Feb - May             |                                     |                       |                      |
| Crickets                                                                            | Nov - Apr             |                                     |                       |                      |
| Black Maize Beetle                                                                  | Oct - Dec             |                                     |                       |                      |
| Ants                                                                                | Nov - Mar             |                                     |                       |                      |
| Mole Crickets                                                                       | Feb - Apr             |                                     |                       |                      |
| Cutworm                                                                             | Oct - Mar             |                                     |                       |                      |
| Armyworm                                                                            | Jan - Apr             |                                     |                       |                      |
| <p><b>Optimum timing for fungicide application to protect your turf quality</b></p> |                       | Fair control *                      |                       |                      |
|                                                                                     |                       | Good Control **                     |                       |                      |
|                                                                                     |                       | Better Control ***                  |                       |                      |
|                                                                                     |                       | Best Control ****                   |                       |                      |

## Guideline Application Timing Chart

| Instrata                                                        | Subdue Maxx       | Meridian             | Karate Zeon                | Product           |        |        |        |
|-----------------------------------------------------------------|-------------------|----------------------|----------------------------|-------------------|--------|--------|--------|
| M5, 3 & 12                                                      | 4                 | D                    | 3A                         | Group             |        |        |        |
| 9Lt/ha                                                          | 1.7Lt - 3.4Lt/ha  | 1kg/ha               | 500 - 800ml/ha             | Rate/ha           |        |        |        |
| 362g/L Chlorothalonil 56,9g/L Propiconazole 14,5g/L Fludioxonil | 240g/Lt Mefenoxam | 250g/kg Thiamethoxam | 100g/Lt Lambda-cyhalothrin | Active ingredient |        |        |        |
| Contact & Systemic                                              | Systemic          | Systemic             | Contact                    | Disease Timeline  |        |        |        |
| Safe                                                            | Very Safe         | Safe                 | Harmful                    | Summer            | Autumn | Winter | Spring |
| ***                                                             |                   |                      |                            | X                 |        |        | X      |
| **                                                              |                   |                      |                            | X                 | X      |        | X      |
| ***                                                             |                   |                      |                            | X                 | X      |        | X      |
|                                                                 |                   |                      |                            | X                 | X      |        |        |
|                                                                 |                   |                      |                            | X                 | X      |        | X      |
| ***                                                             |                   |                      |                            | X                 | X      |        | X      |
|                                                                 |                   |                      |                            |                   | X      |        | X      |
| ***                                                             |                   |                      |                            | X                 |        |        | X      |
| ***                                                             |                   |                      |                            | X                 | X      |        | X      |
| ***                                                             |                   |                      |                            |                   | X      | X      |        |
|                                                                 |                   |                      |                            |                   | X      | X      | X      |
|                                                                 | ***               |                      |                            | X                 | X      |        |        |
|                                                                 | **                |                      |                            |                   |        | X      |        |
| ***                                                             |                   |                      |                            | X                 | X      |        |        |
| **                                                              |                   |                      |                            | X                 |        |        |        |
|                                                                 | **                |                      |                            |                   |        |        |        |
|                                                                 |                   |                      |                            | X                 | X      |        | X      |
| **                                                              |                   |                      |                            | X                 |        |        |        |
|                                                                 |                   |                      |                            |                   |        | X      | X      |
|                                                                 |                   |                      |                            | X                 | X      | X      |        |
|                                                                 |                   |                      |                            | X                 | X      |        | X      |
|                                                                 |                   | ***                  |                            | X                 | X      |        | X      |
|                                                                 |                   | ***                  |                            | X                 |        |        | X      |
|                                                                 |                   | ***                  |                            | X                 | X      |        | X      |
|                                                                 |                   | ***                  |                            | X                 | X      |        | X      |
|                                                                 |                   | ***                  |                            | X                 | X      |        | X      |
|                                                                 |                   |                      | ***                        | X                 | X      |        | X      |
|                                                                 |                   |                      | ***                        | X                 | X      |        | X      |

Disclaimer: Persons intending to use these products must read and follow the label accompanying that product, and comply with all applicable laws and regulations relating to its laws. Talking Turf Solutions will not be held responsible for any damage caused. Rotate mode of action to help with resistance management. Focus on the best preventative treatments to save time and resources.

# Rotate your chemistry



# Optimum timing for fungicide application

Key:  
 ● Preventative  
 ● Curative  
 ● Eradicant

| Spore germination | Penetration | Mycelial growth | Blistering | Sporulation    |
|-------------------|-------------|-----------------|------------|----------------|
|                   |             |                 |            |                |
| Preventative      |             | Curative        | Eradicant  | Anti-sporulent |



Highly effective



# Syngenta Disease Identification



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**Early and accurate identification of disease is an essential element of managing attacks and preventing damage.**

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Spotting and identifying disease on your more susceptible areas of turf, is a key indicator of rising pressure and risk. That can enable earlier intervention with pro-active measures or fungicide application, to prevent a widespread outbreak.

With changing climatic conditions and turf management practices, the frequency, severity and even the disease pathogens are adapting. Outbreaks of different diseases now occur at different times, often on different areas.

This Disease Identification Guide is designed to help spot symptoms early, assess risk and manage them more effectively.

Accurate disease identification is essential for integrated turf management programmes. Cultural controls to alleviate one disease, could create the conditions to encourage another.

This guide includes tips and advice for both the cultural integrated turf management reduction of disease pressure, along with fungicide advice that is a key element of control.

Refer to the Syngenta SA website <https://turf.syngentaturflandscape.com/af>, for further information and advice.

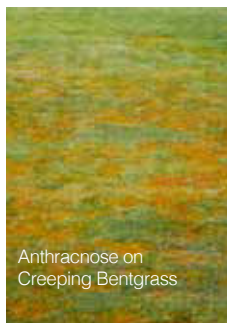
# ▶ Anthracnose

## Causal Agent:

*Colletotrichum cereale* (formerly *Colletotrichum graminicola*)



Anthracnose on Creeping Bentgrass close up



Anthracnose on Creeping Bentgrass



Anthracnose on Poa Annua close up



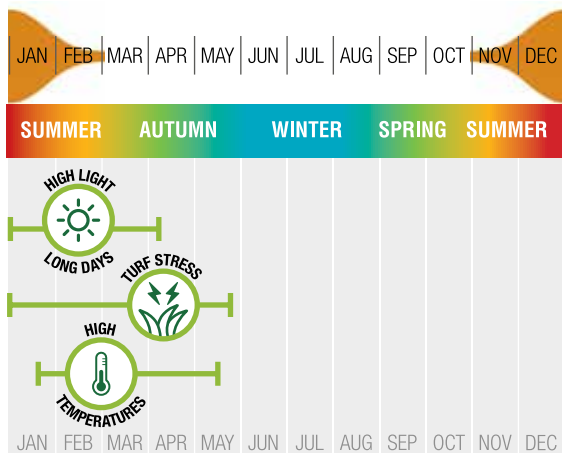
Anthracnose on Creeping Bent & Poa Annua grass mixed

|                                  |                                                                                                                                                                                                                                                               |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>                  | <p><b>Basal rot:</b> Youngest leaf brick red, other leaves bright yellow, black rot at base of stem.</p> <p><b>Foliar blight:</b> Irregular patches of turf turn tan and die. Small black acervuli with hair like setae can be seen with a x10 hand lens.</p> |
| <b>Susceptible grass species</b> | <p><b>Basal rot:</b> mostly affects annual meadow-grass.</p> <p><b>Foliar blight:</b> affects all grasses but annual meadow-grass is most susceptible.</p>                                                                                                    |
| <b>Time of year</b>              | <p><b>Basal rot:</b> Autumn and Winter</p> <p><b>Foliar blight:</b> Summer</p>                                                                                                                                                                                |
| <b>Climatic conditions</b>       | <p><b>Basal rot:</b> Cold and wet</p> <p><b>Foliar blight:</b> Warm and wet</p>                                                                                                                                                                               |
| <b>Turf conditions</b>           | <p>High stress, low fertility (nitrogen especially but also potassium and phosphorous imbalances), compaction, moist surface with dry soil, low cutting height.</p>                                                                                           |



# ► Anthracnose

## Disease Risk Indicators



## Management

**Cultural:** Ensure adequate drainage; reduce surface moisture; maintain appropriate fertility; control thatch layer; encourage morning sunlight penetration; relieve compaction; increase cutting height.

**Biological:** Discourage annual meadow-grass in the sward.

**Chemical:** Effective fungicides are available. Timing of application dictates optimal performance. Preventative use during periods of high disease pressure provides optimal control. Use at the very first signs of disease (before it gets into the grass plant) can control disease but is higher risk and may require recovery period. Liquid fertiliser applied at first signs of disease after fungicide application will help turf recover from infection.



## ► Anthracnose

### Best Management Practices (BMP) for Anthracnose control:

Rutgers University research has shown that using **Banner Maxx + Daconil Weatherstik** or **Heritage + Daconil Weatherstik**, one can prevent and control Anthracnose. However, **BMP (Best Management Practices)** are equally important:

- Maintain optimal moisture levels (using a moisture meter is a great way to achieve this)
- **Reduce leaf wetness** periods
- **Regular dusting** (this significantly reduces Anthracnose severity as you are protecting the crown of the plant)
- Rolling (up to 3 times per week)
- Rather reduce mowing height than cut back on nitrogen
- Apply a granular application of nitrogen in spring and then maintain the nitrogen levels with 18 - 22,5 kg of N/ha per week in early spring and reduce to 4kg/ha per week in late spring and summer
- Maintain good nitrogen (3,6 % in the leaf) and potassium levels
- Potassium nitrate is a good source of nitrogen (avoid potassium chloride, ammonium sulphate and ammonium nitrate)
- Maintain a soil pH of 6

#### Keys products for Anthracnose prevention and control:

- Optimum **water volume is 750 l/ha** when targeting Anthracnose – **good nozzles** are also part of the secret to success
- Daconil Weatherstik – research has shown you require lower rates every 14 days – generic products require more regular applications at higher rates. **Best results with a tank mix of Banner Maxx/Daconil Weatherstik or Heritage/Daconil Weatherstik.** The mixes work better as there are more than 12 strains of Anthracnose per green and different strains have different resistance levels to different chemistry

 **BannerMaxx®**  
Fungicide

 **DaconilWeatherstik®**  
Fungicide

 **Heritage®**  
Turf fungicide

 **Instrata®**  
Turf fungicide

 **Ryder®**

 **Complement®Super**



# Bipolaris Leaf Spot

## Causal Agent:

*Drechslera spp.* and/or *Bipolaris spp.*

## Susceptible Turfgrass:

Creeping Red Fescue, Kentucky Bluegrass, Poa Annua, Perennial Ryegrass, Tall Fescue and some varieties of Bentgrass and Bermudagrass

## Symptoms:

Leaf spot causes **reddish-brown or purplish-brown lesions**, which may be **oblong to irregular** in shape. Lesions may have a tan centre. Older, lower leaves of infected plants become shrivelled. When infection is severe, almost all of the leaves and sometimes tillers die, causing **severe browning and thinning of the strand**. Most *Bipolaris spp.* infect during **warm-to-hot periods** and when there are frequent cycles of wet and dry weather. On Bermudagrasses, *Bipolaris cynodontis* and other species are encouraged by cool, cloudy and wet weather. Deficient or **excessive nitrogen, excessive thatch**, extended periods of **leaf wetness, drought stress**, and **low mowing heights** are factors that encourage the development.



*Bipolaris and Drechslera (previously classified as Helminthosporium fungi). Helminthosporium sp. are on the Daconil label.*

## Conditions Favouring Disease:

Leaf spot favours temperatures between **4°C and 26°C**. It occurs in areas that experience **more than 10 hours a day of foliar wetness for several consecutive days**. It also favours **high amounts of nitrogen** and a **low mowing height**.

## Integrated Turf Management Tips:

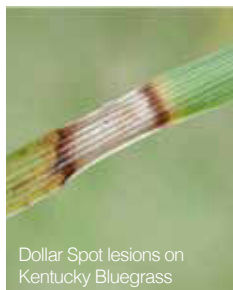
- Increase height of cut
- Avoid the application of high rates of water-soluble nitrogen in spring
- Reduce thatch and minimize shade
- Reduce extended periods of leaf wetness by watering deeply but infrequently to wet the entire root zone
- Do not apply broadleaf weed herbicides or growth regulators when any of these diseases are active
- Apply an appropriate fungicide at the first indication turf is going-off colour and numerous lesions are present



# Dollar Spot

## Causal Agent:

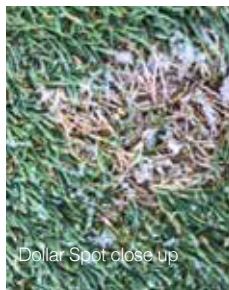
*Clarireedia homoeocarpa*, *Clarireedia jacksonii*, *Clarireedia monteithiana*, *Clarireedia bennettii*



Dollar Spot lesions on Kentucky Bluegrass



Dollar Spot on Creeping Bentgrass



Dollar Spot close up



Dollar Spot on Kentucky Bluegrass

## Symptoms

Small spots of bleached turf on close Management mown turfgrass. Spots may coalesce to form large areas of affected turf. White mycelium may be present on affected areas on dewy mornings.

## Susceptible grass species

Fescue, bentgrass and annual meadowgrass.

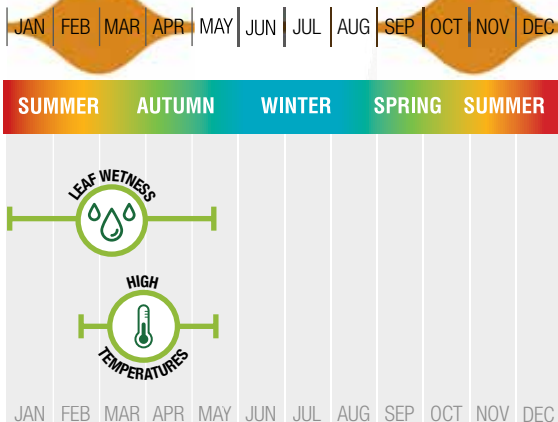
## Time of year

Summer and Autumn.

## Turf conditions

Low fertility and surface wetness (especially heavy dews).

## Disease Risk Indicators



## Management

**Cultural:** Remove surface moisture (switch when dew occurs); encourage morning sunlight penetration; encourage air movement over the surface; ensure appropriate fertility; reduce thatch; aerate surface.

**Biological:** Some biocontrol products have proved effective in reducing potential infection at lower disease risk.

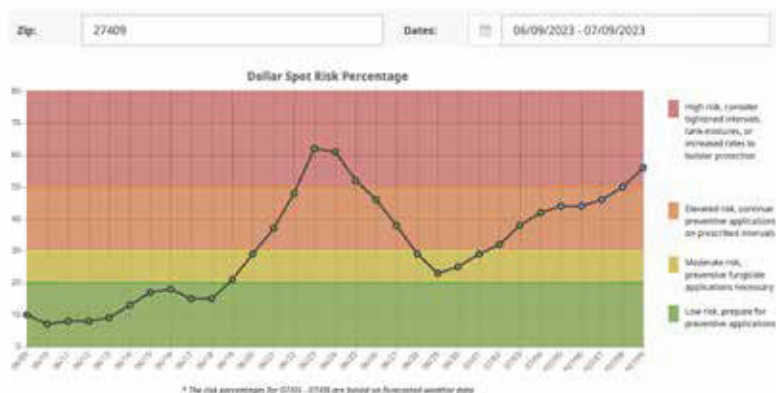
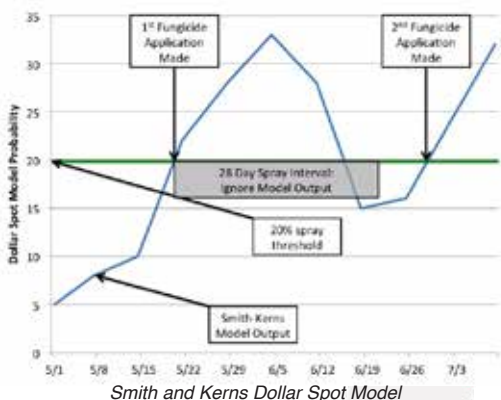
**Chemical:** Effective fungicides are available. Timing of application dictates optimal performance. Preventative use during periods of high disease pressure provides optimal control. Use at the very first signs of disease can control disease but is higher risk and may require recovery period.





## Predict Dollar Spot with the Smith-Kerns Model

The Smith-Kerns Dollar Spot Prediction Model is a logistic-based model that uses a 5-day moving average of daily relative humidity and daily average air temperature to create a probability that dollar spot will occur on a given day. The model was created by Dr. Damon Smith and Dr. Jim Kerns and has been validated through years of additional field research conducted primarily in Wisconsin but also in Oklahoma, Pennsylvania, Mississippi, Tennessee, Connecticut, and New Jersey.



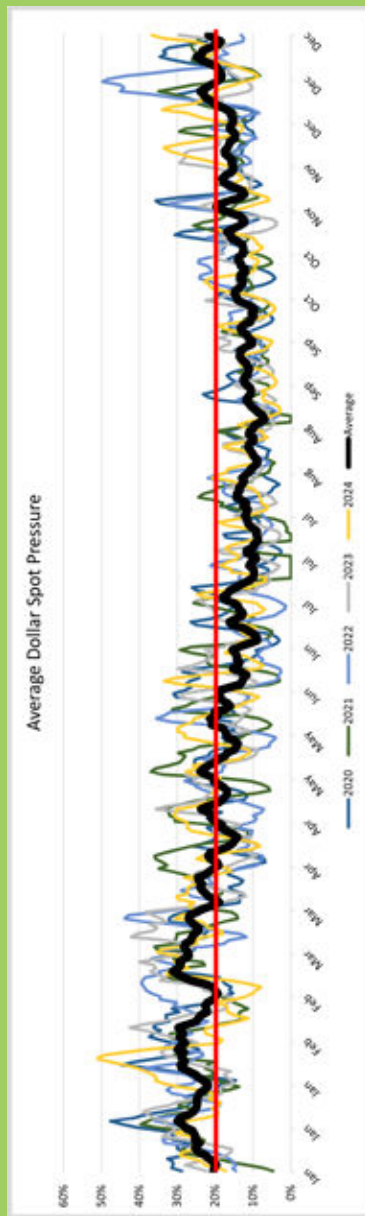
Based on the Smith-Kerns model, this tool can help you maximize your dollar spot control by optimizing the timing of applications based on recommended thresholds for dollar spot development.

Visit <https://www.greencastonline.com/dollar-spot-solutions> and sign up to be automatically notified of the dollar spot risk in your area.

Research behind the Smith-Kerns model shows that dollar spot symptoms can be prevented if turf is treated with a solid dollar spot management program before or when the risk reaches a 20% threshold, and applications continue through the season.

# Smith-Kerns Model Cape Town

## South Africa Primo Intervals and Dollar spot pressure

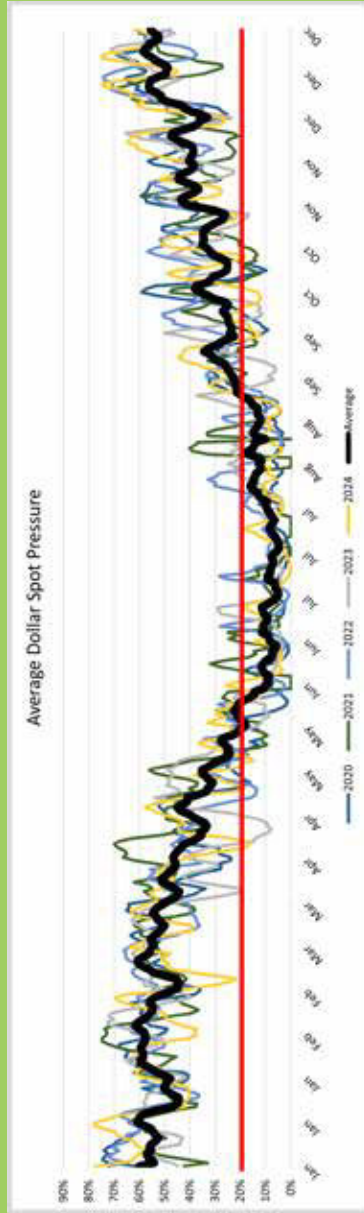


|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

Cape Town

# Smith-Kerns Model Durban

## South Africa Primo Intervals and Dollar spot pressure

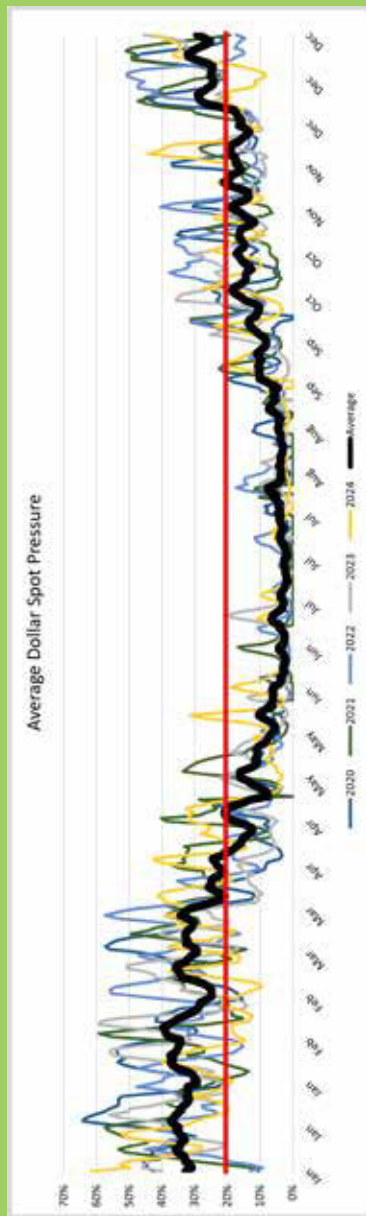


|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

Durban

# Smith-Kerns Model George

## South Africa Primo Intervals and Dollar spot pressure

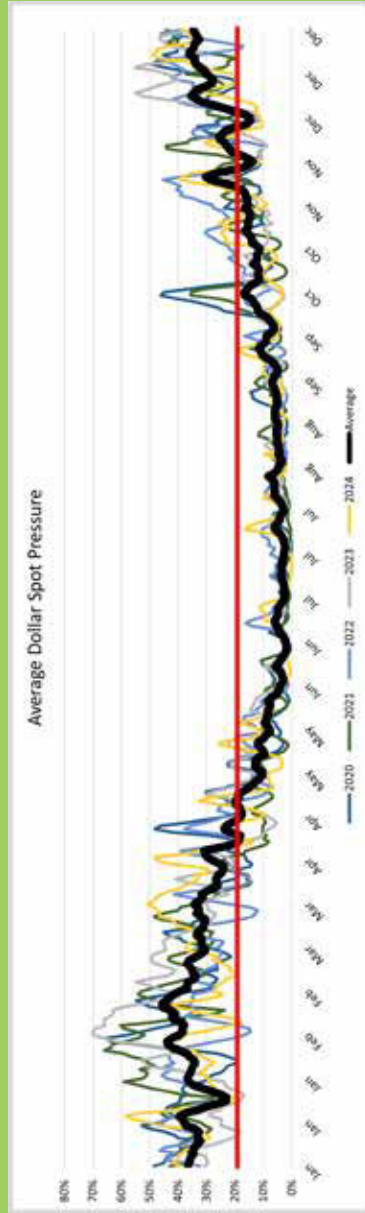


|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

George

# Smith-Kerns Model Hazyview

## South Africa Primo Intervals and Dollar spot pressure

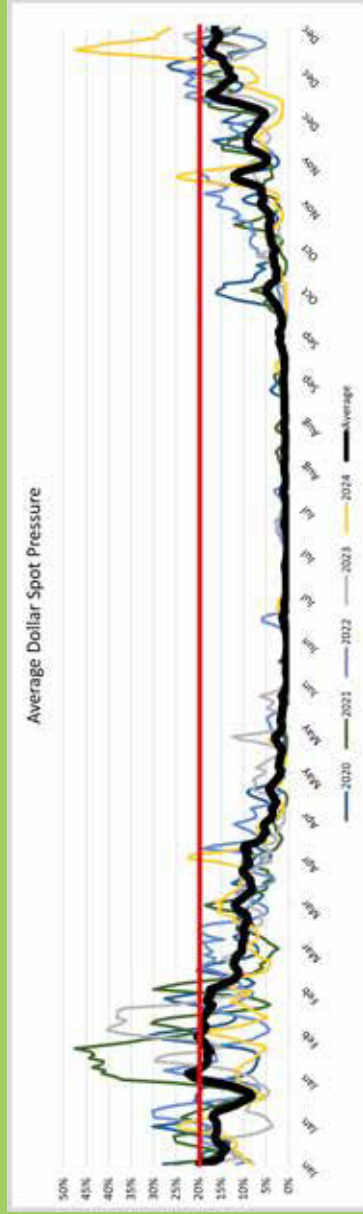


|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

Hazyview

# Smith-Kerns Model Johannesburg

## South Africa Primo Intervals and Dollar spot pressure



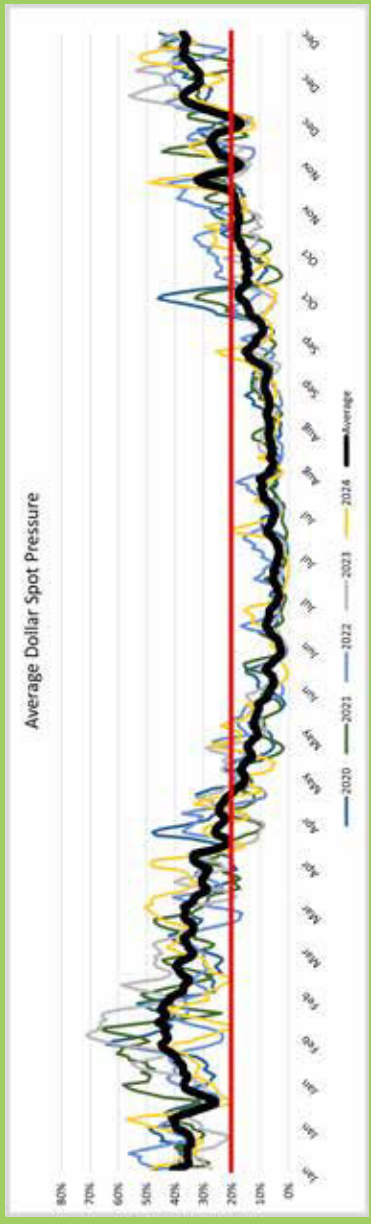
|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

Johannesburg



# Smith-Kerns Model Malelane

## South Africa Primo Intervals and Dollar spot pressure

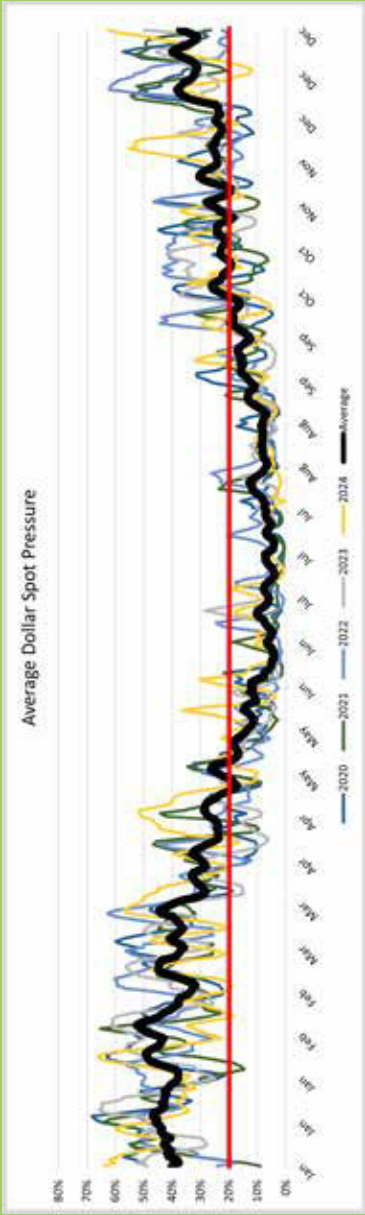


|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

Malelane

# Smith-Kerns Model St Francis Bay

## South Africa Primo Intervals and Dollar spot pressure



|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

St Francis Bay

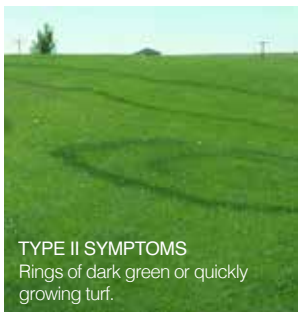
# Fairy Rings

## Varying Causes and Symptoms:

Three types of Fairy Ring symptoms can change the appearance and/or health of turfgrass.



**TYPE I SYMPTOMS**  
Damaged or dead turf from drought stress.



**TYPE II SYMPTOMS**  
Rings of dark green or quickly growing turf.



**TYPE III SYMPTOMS**  
Mushrooms or other fruiting bodies produced in a ring.

|                                  |                                                                                                                                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>                  | <p><b>Type 1:</b> Kills grass or badly damages it</p> <p><b>Type 2:</b> Stimulates growth</p> <p><b>Type 3:</b> Do not visually damage the sward but has fruiting bodies</p> |
| <b>Susceptible grass species</b> | All grass species susceptible.                                                                                                                                               |
| <b>Time of year</b>              | May be seen all year round if conditions are conducive. Most common in spring and autumn.                                                                                    |
| <b>Climatic conditions</b>       | Continual wet/dry cycles. Warm soil temperatures.                                                                                                                            |
| <b>Turf conditions</b>           | Light soils, free draining rootzone, added organic matter in new constructions or thatch presence.                                                                           |

## Management

**Cultural:** Reduce excess thatch; aerate to help water penetration; use wetting agents to wet rootzone; apply fertiliser or iron sulphate to mask symptoms of type 2 rings; level depressions with top dressing. For type 3, remove fruiting bodies.

**Chemical:** Some fungicides are available. Addition of wetting agent or applying wetting agent first will help the fungicide penetrate the rootzone.

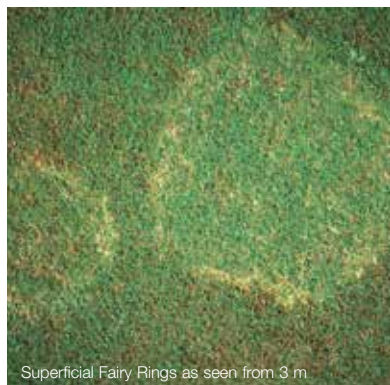
### Fairy Ring Knapsack rates:

20g Heritage  
100ml Qualibra

Apply in 6 litres water volume and apply over 100m<sup>2</sup>



# Superficial Fairy Ring



Superficial Fairy Rings as seen from 3 m

## Causal Agent:

*Coprinus kubickae*, *Melanotus phillipsii*, *Trechispora alnicola*, *Trechispora cohaerens*, *Trechispora farinacea*, *Agaricus campestris*, *Lepiota* spp, *Lyciperdon* spp, *Marasmius oreades*, other species

|                                  |                                                                                                                                                                                                                                              |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>                  | Circular patches, arcs or ribbons of stimulated grass growth or discoloured grass growth (yellow or bleached) with or without visible mycelia at the base of the sward. Patches may be sunken due to degradation of the thatch. Musty smell. |
| <b>Susceptible grass species</b> | All grass species susceptible.                                                                                                                                                                                                               |
| <b>Time of year</b>              | Autumn and Winter.                                                                                                                                                                                                                           |
| <b>Climatic conditions</b>       | Continual wet/dry cycles. Warm soil temperatures.                                                                                                                                                                                            |
| <b>Turf conditions</b>           | Excessive thatch layers, rootzone with low microbial populations.                                                                                                                                                                            |

## Management

**Cultural:** Reduce excess thatch; aerate to help water penetration; use wetting agents to wet rootzone; apply fertiliser or iron sulphate to mask symptoms of type 2 rings; level depressions with top dressing. For type 3, remove fruiting bodies.

**Chemical:** Some fungicides are available. Addition of wetting agent or applying wetting agent first will help the fungicide penetrate the rootzone.



# ► Grey Leaf Spot

## Causal Agent:

*Pyricularia grisea*



Grey Leaf Spot close up



Grey Leaf Spot on Perennial Ryegrass



Grey Leaf Spot from 6m

## Susceptible Turfgrass:

Bermuda, Kikuyu, Perennial Rye and Tall Fescue

## Symptoms:

The symptoms of Grey Leaf Spot vary depending on the grass cultivar. On **Kikuyu**, Grey Leaf Spot first appears as **small, brown spots on the leaves and stems**. The spots quickly enlarge to approximately 0.5 cm in length and become bluish-grey in colour and oval or elongated in shape. The mature lesions are tan to grey in colour and have depressed centers with irregular margins that are purple to brown in colour. On **Perennial Ryegrass** and **Tall Fescue**, symptoms first appear as small, **water-soaked lesions that turn brown**. Lesions may have a yellow halo. The leaf tips will have a twisted or **fishhook** shape.

## Conditions Favouring Disease:

Grey Leaf Spot favours temperatures between **26°C to 32°C**. It is also found in areas with high nitrogen levels and that are stressed by various factors, including drought and soil compaction. This disease is most severe during extended hot and humid periods.

## Integrated Turf Management Tips:

- Avoid medium to high nitrogen levels during mid-summer
- Irrigate turf deeply and as infrequently as possible to avoid water stress
- Allow water to remain on leaves for only a short period of time
- Reduce thatch by vertical cutting
- When possible, plant turfgrass that is resistant to Grey Leaf Spot
- Avoid using herbicides or plant growth regulators when the disease is active
- Apply penetrant fungicides on a preventive basis



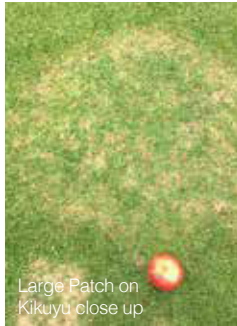
# ▶ Large Patch (Kikuyu Patch)

## Causal Agent:

*Rhizoctonia solani*



Large Patch on Kikuyu - close up



Large Patch on Kikuyu close up



Large Patch on Kikuyu Fairways



Large Patch on Kikuyu

## Susceptible Turfgrass:

Kikuyu, Zoysiagrass, Seashore paspalum

Large patch is a widely spread disease on Kikuyu fairways, Kikuyu sports fields & Kikuyu lawns in South Africa. This disease infects the roots and slowly works its way up the plant. It can take months before symptoms are visible on the playing surface. This disease is spread by dead or alive plant material so best to apply a systemic fungicide prior to any cultural practices.

## Application Timing:

- Preventative rate per ha: 1,4L Banner Maxx + 250g Heritage
- Curative rate per ha: 2L Banner Maxx + 372g Heritage. Water in immediately.
- Remember to follow up 21 days later
- **Key treatment time in Autumn (NB)** and Spring (less NB)
- Do a follow up application 21 days later in Autumn

## Integrated Turf Management Tips:

- Best to spike prior to applying and water in immediately for a few minutes
- It is not how much water, but how quickly you water in that is important
- Best to **tank mix** with **100 ml/ha Complement Super** or **5-20 litres/ha Qualibra**





# Microdochium Patch

## Causal Agent:

*Microdochium nivale* (same species that causes pink snow mold)



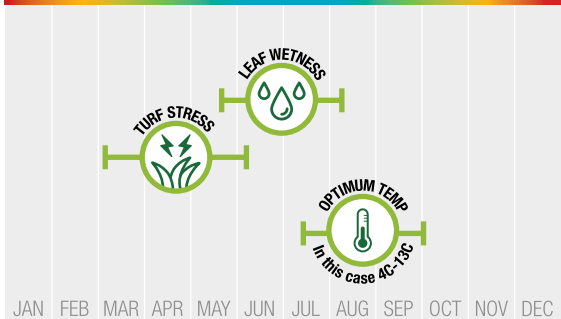
Take-all Patch on Ultra-Dwarf Bermuda



Take-all Patch on Bentgrass

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

SUMMER AUTUMN WINTER SPRING SUMMER



### Early Symptoms

Darkened, water-soaked appearance. White/grey mycelium may be present.

### Late Symptoms

Patches enlarge. Salmon-pink to orange-brown colour. White to pink mycelia may be present. Scars dark when wet, pale when dry. May take months to heal.

### Susceptible grass species

All grass species susceptible. Annual meadow-grass most severely affected.

### Time of year

Most common is Spring and Autumn. Most severe in Autumn.

### Climatic Conditions

Mild and wet. Shaded areas with poor air circulation particularly susceptible.

### Turf conditions

Wet turf surfaces, over-fertilised, excessive thatch layer, alkaline conditions, aeration and topdressing activities at the end of the season (in high disease risk periods).

## Management

**Cultural:** Ensure adequate drainage; reduce surface moisture; control thatch layer (consider timing of aeration and top dressing); encourage morning sunlight penetration; appropriate use of fertiliser and nitrogen source; surface acidification.

**Biological:** Prevent annual meadow-grass ingress into fine turf greens or convert back to finer grasses.

**Chemical:** Effective fungicides are available. Timing of application dictates optimal performance. Preventative use during periods of high disease pressure provides optimal control. Use at the very first signs of disease (before it gets into the grass plant) can control disease but is higher risk and may require recovery period.





# ► Powdery Mildew

## Causal Agent:

*Erysiphe graminis*

## Susceptible Turfgrass:

Fine-Leaf Fescue, Kentucky Bluegrass

## Symptoms:

The disease first appears on the leaves as individual **tufts of fine, white mycelium**. The tufts enlarge and coalesce, causing the leaves to have a **greyish-white or powdery appearance**. Severely infected turf turns yellow, then tan and brown in colour. Stressed turf that is severely infected can die. Severely infected turf, especially in shaded areas, can become thinned.



## Conditions Favouring Disease:

Powdery Mildew is favoured by humid, cloudy weather with temperatures between **15°C and 22°C**. It occurs in areas under stress, with low light, and with high humidity. Powdery Mildew is also common in areas with poor air circulation, but does not require a film of water to infect turf.

## Integrated Turf Management Tips:

- Water as needed to avoid drought stress
- Avoid levels of nitrogen and irrigation that produce lush leaf growth
- Raise the mower height
- Prune tree limbs to improve air circulation and the amount of sunlight
- Convert to a polystand of shade-adapted turfgrass



# ▶ Pythium Blight

## Causal Agent:

*Pythium aphanidermatum* and *Pythium* spp.



Pythium Blight on Perennial Ryegrass



Pythium Blight close up



Pythium Blight from 6m

## Susceptible Turfgrass:

Affects all Turfgrass

## Symptoms:

Pythium Blight appears suddenly during hot, humid weather. This disease causes **greasy, brown circular spots** that are initially about 2 cm to 5 cm in diameter and then rapidly enlarge in size. The spots are water-soaked and dark-coloured early in the morning. They also form **fluffy white masses of fungal mycelium** (cottony blight) and can coalesce to form large, irregular areas of dead turf. Infected patches may appear brownish-orange in colour.

## Conditions Favouring Disease:

Pythium Blight **favours night temperatures of over 20°C**. It occurs in areas that experience more than 10 hours a day of foliar wetness for several consecutive days. It is found in the wettest areas of turf and in areas with poor drainage and air circulation. Lush-growing turf growing under nitrogen fertilization is particularly susceptible to the disease.

## Integrated Turf Management Tips:

- Avoid mowing wet turf when the foliar mycelium is evident to minimise spreading the disease
- Reduce thatch
- Avoid excessive nitrogen application during hot weather
- Increase air circulation to speed the drying process of the turf
- Minimise the amount of shade
- Irrigate turf early in the day. Avoid late-day watering
- Improve soil drainage
- Irrigate turf deeply and as infrequently as possible and Bermudagrass



# THE PYTHIUM SPECIALIST

One of the best preventative and early curative systemic fungicides for effective control of Pythium spp. in your greens.

## What SUBDUE MAXX offers you:

- ✓ A **highly effective, economical solution** for Pythium in all turf species
- ✓ **Protection** of germinating seedlings during overseeding with **high turf safety**
- ✓ The **combination** of **fast absorption** and **even systemic movement** as well as **contact action** in soil, resulting in full plant protection. Best to apply in 600-800 litres/ha water volume and don't water in
- ✓ MAXX technology allows for **excellent tank mix** compatibility with other fungicides and foliar fertilizers

## Subdue Maxx results versus Aliette

| Feature                    | Subdue Maxx                                         | Aliette                                                        |
|----------------------------|-----------------------------------------------------|----------------------------------------------------------------|
| <b>Mode of Action</b>      | Systemic fungicide; rapid absorption and movement   | Protectant and systemic fungicide; delayed action              |
| <b>Primary Use</b>         | Control of Pythium and related turf diseases        | Control of Oomycete diseases, incl. Pythium/Downy mildew       |
| <b>Application Timing</b>  | Early season; prevention and early curative control | Late season or for persistent disease control                  |
| <b>Residual Activity</b>   | Up to 21 days residual activity                     | Extended protection as follow-up treatment                     |
| <b>Systemic Properties</b> | Rapid systemic movement for fast action             | Systemic but slower, longer protection                         |
| <b>Specific Benefits</b>   | Fast-acting, specialist for Pythium, early control  | Robust late-season protection, fits strong integrated programs |



## ► Seedling Diseases



|                                  |                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>                  | <b>There are 3 types;</b><br><b>Seed rot:</b> Prevents the seed from germinating. Results in a thin sward.<br><b>Pre-emergence damping off:</b> Occurs post germination before emergence.<br><b>Post-emergence damping off:</b><br>Patches of rot at the stem base and collapse. May turn red, purple or yellow as the seedlings die. |
| <b>Susceptible grass species</b> | All grass species susceptible.                                                                                                                                                                                                                                                                                                        |
| <b>Time of year</b>              | Early spring and late autumn sowings most at risk.                                                                                                                                                                                                                                                                                    |
| <b>Climatic conditions</b>       | Cool and wet.                                                                                                                                                                                                                                                                                                                         |
| <b>Turf conditions</b>           | Wet soils, poorly prepared seedbed, inadequate or excessive seedbed fertiliser, excessive seedbed rates.                                                                                                                                                                                                                              |

### Management

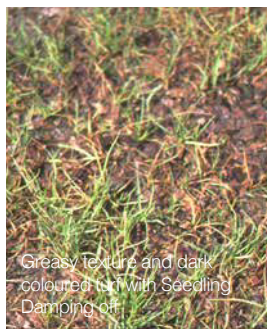
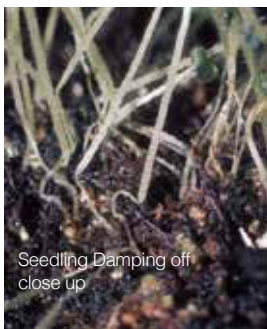
**Cultural:** Good seedbed preparation using adequate drainage; appropriate use of seedbed fertiliser; appropriate seed rate, evenly sown to recommended depth; sow in favourable weather conditions into warm soil; oversow weak areas.

**Chemical:** Curative control is difficult. Use fungicide with proven safety on seedling grasses as directed.



## ► Seedling Damping Off

**Damping off is a seedling disease that may develop before or after the emergence of turfgrass seedlings**



When the disease develops after emergence, seedlings initially appear flaccid and twisted as if suffering from wilt. The seedlings continue to decline, turning dark in colour and greasy in appearance, and then quickly disintegrate to leave areas of bare soil. Damping off initially develops in localized spots, but the disease often spreads rapidly to injure large areas. In severe cases, tufts of mycelium may be observed in affected areas when the leaves are wet. Turfgrasses are most susceptible to damping off during germination and seedling emergence.



# Post seeding application for the ultimate playing surface

Application immediately after seeding & repeat 21 days later.

Mix in 600-800 litres/ha water volume & water in 30 minutes after spraying.

|              |                   |                                          |
|--------------|-------------------|------------------------------------------|
| 20 litres/ha | Qualibra          | Penetrant and polymer in one             |
| 20 litres/ha | Talking Turf Star | Stimulates root development              |
| 1 kg/ha      | Heritage          | Nitrogen release & fungicide protection  |
| 2 litres/ha  | Ryder             | To speed up the seed germination process |

# ▶ Pythium Root Dysfunction

## Causal Agent:

*Pythium aristosporum*, *P. Volutum*, *P. Aristosporum*



Pythium Root Rot close up



Pythium Root Rot



Pythium Root Rot

## Susceptible Turfgrass:

Annual Bluegrass and Creeping Bentgrass most susceptible. Bermudagrass and Seashore Paspalum can also be affected.

## Symptoms:

*Pythium* Root Rot is common on highly maintained turf, such as golf course greens. Although symptoms of *Pythium* Root Rot are typically non-distinctive, this **disease can appear as yellow, irregularly shaped patches**. The affected turfgrass is thin, off-colour, and slow growing, while the root system is stunted with reduced volume and vigour. Foliar mycelium does not occur.

## Conditions Favouring Disease:

Some *Pythium* species favour temperatures between **0°C and 10°C** while **others thrive in temperatures between 21°C and 32°C**. *Pythium* Root Rot occurs in areas with high soil moisture, poor drainage, and low light. It also infects locations with low mowing height and excessive wear.

## Integrated Turf Management Tips:

- Increase the height of cut
- Apply optimum amounts of nitrogen, phosphorous, and potash
- Reduce mowing frequency and use lightweight mowers
- Avoid over-watering
- Apply low amounts of nitrogen in the Spring when roots are forming
- Minimise the amount of shade
- Improve the drainage of the turf
- Reduce soil compaction
- Apply penetrant fungicides on a preventive basis







# TALKING TURF ClearOut

(registration number K11302) 10, 85 % K 0,58 % P

**POTASSIUM PHOSPHITE**  
**TREATMENT FOR PYTHIUM OUTBREAKS**  
**IMPROVES STRESS TOLERANCE OF PLANTS**

## **APPLICATION GUIDELINES:**

Apply the product in a water volume of 300 - 750 l/ha

Apply early morning or late afternoon

Apply 10 litres/ha monthly and water in with 3-9 minutes water

## **TANK MIX OPTIONS:**

If **NO** Pythium present you can add 8, 10 or 12 kg/ha Urea LB  
to Talking Turf ClearOut

# Whatever it Takes!

## **SALES & TECHNICAL SUPPORT:**

[sales@talkingturf.co.za](mailto:sales@talkingturf.co.za)

Company Registration number: 2004/106765/23. VAT number: 4010223776. P.O. Box 1434, Malalane 1320



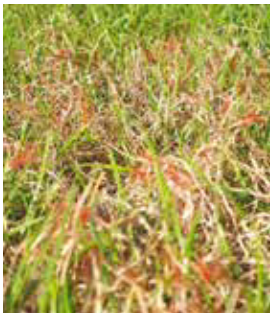
# ▶ Red Thread

## **Causal Agent:**

*Red Thread – Laetisaria fuciformis*



Red Thread close up



|                                  |                                                                                                                                                                                                                                                                                          |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>                  | Begins as irregular patches with dead leaves interspersed with live plants. Patches become more bleached and may also have a pink tinge. Close inspection will reveal pale pink to red needle-like growths (the red threads). Pink mycelium may also be present in conducive conditions. |
| <b>Susceptible grass species</b> | Perennial ryegrass and fescues very susceptible. Bentgrass and annual meadow-grass occasionally affected.                                                                                                                                                                                |
| <b>Time of year</b>              | Spring to Autumn.                                                                                                                                                                                                                                                                        |
| <b>Turf conditions</b>           | Low fertility, slow growing turf, moisture retentive turf surface, use of plant growth regulators.                                                                                                                                                                                       |

## **Management**

**Cultural:** Remove surface moisture (switch when dew occurs); encourage morning sunlight penetration; encourage air movement over the surface; ensure appropriate fertility.

**Chemical:** Effective fungicides are available. Curative control at the first signs of disease is typically optimal.



# Rusts: Crown, Leaf and Stem

## Causal Agent:

Crown – *Puccinia coronata*; Leaf – *Uromyces dactylidis*; Stem (Black) – *Puccinia graminis*; Stripe (Yellow) – *Puccinia striiformis*

## Susceptible Turfgrass:

Kentucky Bluegrass, Perennial Ryegrass, Zoysiagrass



## Symptoms:

Rust diseases cause **light yellow flecks initially** on the **leaf blades** and **sheaths**. The flecks enlarge, **elongate**, and **turn yellow in colour**. The infected areas rise above the epidermis and then **rupture, releasing spores** that are **yellowish-orange** to **reddish-brown** in colour. The leaf blade turns yellow starting at the tip and progressing to the base sheath. A severe disease infection can cause the shoot to turn yellowish to reddish-brown in colour and slow in growth. The turf may appear thin as individual shoots die.

## Conditions Favouring Disease:

Rust diseases typically occur in early Spring through Autumn, depending on the location of the turf. Rusts favour moist, low-light areas. Depending on the species, rusts favour temperatures between **18°C and 30°C**. Severe rust infections occur on slow-growing turfgrass, particularly those with low nitrogen levels and/or plant water stress.

## Integrated Turf Management Tips:

- Convert to a turfgrass species or cultivar (especially for Kentucky Bluegrass and Perennial Ryegrass) that are resistant to rust diseases found in the area
- Apply adequate levels of nitrogen
- Remove clippings from turf
- Reduce thatch
- Reduce shade and improve air circulation
- Regulate irrigation to minimise the amount of time moisture remains on the leaf surface. Water deeply and infrequently
- Use penetrant fungicides to control rust diseases on slow-growing grasses and to grasses that are not mown



# ► Spring Dead Spot (SDS)

## Causal Agent:

*Ophiosphaerella korrae*,  
*Ophiosphaerella herpotricha*,  
*Ophiosphaerella narmari*

## Susceptible Turfgrass:

Ultra-Dwarf Bermuda,  
Bermudagrass, Buffalograss



Spring Dead Spot close up



Spring Dead Spot from 6m

## Symptoms:

Infected Turfgrass shows disease symptoms as it emerges from Winter dormancy. Spring Dead Spot appears as **bleached, straw-coloured, circular patches** that measure up to several feet in diameter. "Frog-eye" patches may be solitary or numerous and wide spread. The **roots** of affected plants turn **dark brown to black**.

## Conditions Favouring Disease:

Spring Dead Spot favours **cool, wet weather in Autumn** and daily temperatures, of **less than 16°C** in May. Symptoms are usually seen in Spring. This disease is typically found where thatch is more than 1.2 cm thick and in locations with poor drainage and low potash levels. Heavy applications of nitrogen in late Summer often increase disease severity the following Spring. Spring Dead Spot is more severe on Bermudagrass that is over three years old and in locations with long dormancy and cold temperatures.

## Integrated Turf Management Tips:

- Treat in Autumn and do a follow up application 21 days later. Also do a Spring application. Best to spike prior to applying fungicide and water in immediately for a few minutes.
- Avoid late Summer or Autumn applications of nitrogen fertilizers which may enhance disease severity
- Use ammonium sources of nitrogen combined with potassium for fertilizer from Spring through early August
- Control weeds in affected turf to enhance recovery from Spring Dead Spot
- Apply moderate to high levels of phosphorous, potash, and minor elements
- Improve drainage of turf
- Reduce thatch
- Convert from common varieties to hybrid Bermudagrass with good Winter hardiness
- Use preventive fungicide applications in late September or October
- Preventative rate: 2 litres/ha Banner Maxx
- Curative rate: 3 litres/ha Banner Maxx and repeat 21 days later. Water in application immediately



# Summer Patch

## Causal Agent:

*Magnaporthe poae*

## Susceptible Turfgrass:

Fine-Leaf Fescue,  
Creeping Bentgrass,  
Kentucky Bluegrass  
and Poa Annua



Summer Patch, close up



Summer Patch - from 6m

## Symptoms:

Summer Patch appears as **circular or irregularly shaped patches** that measure from several inches to several feet in width. Initially, patches appear as slow-growing thinned or wilted turfgrass. Mature patches are **brownish-yellow to straw-coloured** and can coalesce as they increase in size. The leaves of the plant turn yellow to brown from the tip to the base. The **roots** turn moderate to **dark brown**. Summer Patch can exhibit a ring-like appearance where a less susceptible grass species survives inside the diseased patch.

## Conditions Favouring Disease:

Root infection is **initiated** when **soil temperatures exceed 18°C**; however, foliar symptoms of Summer Patch are favoured by temperatures **over 29°C during the day** and **over 21°C at night**. It is also commonly found in areas that are sunny, exposed, and with high soil moisture, high soil pH, compaction, poor drainage, and low mowing height. This disease is typically more severe in turfgrass that has been fertilized with nitrate-nitrogen.

## Integrated Turf Management Tips:

- Use acidifying fertilizers
- Increase the height of cut
- Reduce soil compaction through aerification and use of lightweight equipment
- Syringe when the temperature is over 29°C
- Improve the drainage of the turf
- Convert to resistant species, such as tall Fescue, Bentgrass, or Perennial Ryegrass
- Apply fungicide preventively in Spring





# Take-all Patch

## Causal Agent:

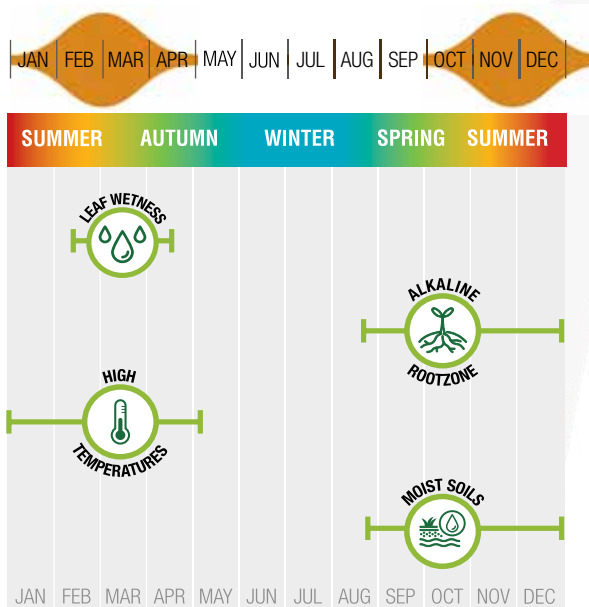
*Gaeumannomyces graminis*  
var. *avenae*



Take-all Patch on Ultra-Dwarf Bermuda



Take-all Patch on Bentgrass



|                                  |                                                                                                                                                                                                           |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>                  | Initially slight bronzing of grass, usually in a ring. As affected grass dies, resistant grass species or broad-leaved weeds invade the centre of the patch. Symptoms may fade in late autumn and winter. |
| <b>Susceptible grass species</b> | Mostly bentgrass, can also affect annual meadow-grass.                                                                                                                                                    |
| <b>Time of year</b>              | Pathogen active earlier in the season but symptoms usually observed during July/August.                                                                                                                   |
| <b>Turf conditions</b>           | Presence of susceptible grass species, newly constructed sand areas low in antagonists, alkaline rootzone, use of alkaline top dressing or irrigation water, poor drainage, lack of manganese.            |

## Management

**Cultural:** Avoid application of alkaline material such as lime, alkaline top dressing and alkaline irrigation water; use acidifying fertilisers and iron sulphate to reduce PH of turfgrass surface; use manganese early in the season to improve turfgrass tolerance.

**Biological:** Oversow with red fescue.

**Chemical:** Effective fungicides are available. Timing of application dictates optimal performance. Application at the very first sign of symptoms will help prevent large patches developing.





# Take-all Root Rot (Bermudagrass Decline)

## Causal Agent:

*Gaeumannomyces graminis* var. *graminis*



Take-all Root Rot close up



Take-all Root Rot to scale



Take-all Root Rot on Ultra-Dwarf Bermuda Greens

## Susceptible Turfgrass:

Bermudagrass, Seashore paspalum, Kikuyu and Ultra-Dwarf Bermudagrass

## Symptoms:

Symptoms appear in **patches** or **rings** up to several feet in diameter. Patches may coalesce to form large irregularly shaped areas, especially where **turf is stressed** from **traffic, poor drainage, or shade**. Affected turf initially shows symptoms of reduced growth, chlorosis, or leaf dieback. As the turf continues to decline it may turn tan, yellow or orange before collapsing and dying. Roots, stolons, and/or rhizomes are sparse and noticeably rotten in affected areas.

## Conditions favouring disease:

The Take-all Root Rot pathogen grows across a wide range of soil temperatures, but most infection likely occurs when the turf is weak or stressed. Low light levels combined with cool temperatures or extended periods of wet weather are the most common triggers. **The disease is most severe in poorly drained areas and where soil pH is greater than 7.0.** Stress from low mowing, inadequate fertility, excessive traffic, or shade cause the turf to be more susceptible. High populations of plant-parasitic nematodes also contribute to Take-all Root Rot development.

## Integrated Turf Management Tips:

- Maintain soil pH below 7; most turfgrasses perform best when soil pH is between 6 and 6.5
- Avoid lime applications unless directed by soil test results
- Reduce turf stress by increasing mowing height, providing adequate fertility, and minimizing mechanical wear
- Implement a nematicide programme if populations are at damaging levels
- Cultivate regularly to increase soil aeration and root growth
- Improve soil drainage and avoid over-irrigation
- Make preventive fungicide applications on a 14- to 28-day interval when conditions are conducive to development



# Rhizoctonia Patch Diseases

**YELLOW PATCH**  
Warm & Cool Season Grasses  
*Rhizoctonia cerealis*



**10 – 20°C**  
Bentgrass  
Tall Fescue  
Kentucky bluegrass  
**Bermudagrass**  
**Zoysiagrass**

**BROWN PATCH**  
*Rhizoctonia solani*  
(strains AG 1 and AG 2-IIIIB)  
Cool Season Grasses



**28 – 30°C**  
AG2-IIIIB  
Bentgrass  
**21-25°C**  
AG1-IA & AG1-IB  
Fescue  
Ryegrass  
Poa spp.

**LARGE PATCH**  
*Rhizoctonia solani*  
(strain AG 2-2LP)  
Warm Season Grasses



**25°C**  
AG2-2LP  
**Bermudagrass**  
**Zoysiagrass**  
**Seashore paspalum**  
**28°C**  
AG2-2IV  
**Bermudagrass**  
**Zoysiagrass**  
**Seashore paspalum**

**LEAF AND SHEATH SPOT**  
*Rhizoctonia zeae R. oryzae*  
Warm & Cool Season Grasses



**28-38°C**  
Bentgrass  
Fescue  
Ryegrass  
Poa spp.  
**Bermudagrass**  
**Zoysiagrass**  
**Seashore paspalum**

**BROWN RING PATCH**  
*Rhizoctonia circinata*  
Warm & Cool Season Grasses



**25-30°C**  
Bentgrass  
Poa spp.  
UDBG  
Paspalum

**WAITEA DISEASES**

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# Rhizoctonia Zeae (Rhizoctonia Leaf and Sheath Spot)

## Causal Agent:

*Rhizoctonia zeae* and  
*Rhizoctonia oryzae*

## Susceptible Turfgrass:

Most species of warm and cool season turfgrass



Rhizoctonia Leaf & Sheath Spot

## Symptoms:

The symptoms of Rhizoctonia Leaf and Sheath Spot can vary dramatically depending on the grass cultivar, climatic and atmospheric conditions, soil, and intensity of the turfgrass management. This disease typically causes thinned areas resembling scalped areas or semi-circular thinned rings in warm-season turfgrass and can also be commonly confused with fairy ring or hydrophobic areas. In cool season turfgrass, **small patches of blighted turfgrass** that measure 12 cm or more in diameter may exist in conjunction with brown patch. The disease can often have a **darker red/orange hue** to the infected turfgrass. Leaf spots may, but oftentimes do not, occur. These thin areas can also be slower to respond to fungicides as the disease is most active at high temperatures which can impede turfgrass re-growth.

## Conditions Favouring Disease:

Infection from the pathogens that cause Rhizoctonia Leaf and Sheath Spot is not as fast as with Brown Patch or Large Patch (*R. solani*), nor does it occur in the same conditions. Infection is most favoured by high canopy temperatures of **28°–36°C**. This disease can be quite **active in the heat of the Summer** as temperatures in the turfgrass canopy exceed the 37°C range. Turfgrass that is stressed from drought and over-reliance on irrigation with poor quality water high in carbonates and salinity is more subject to infection. This can be a seemingly hot, dry weather disease as only humidity or moisture within the crown is necessary for infection.

## Integrated Turf Management Tips:

- Avoid nitrogen applications when the disease is active
- Increase the height of cut on greens, especially during drought conditions
- Increase the air circulation
- Irrigate turf early in the day
- Manage leach salts periodically with heavy irrigation events
- Reduce thatch
- Use fans when practical to improve air flow and lower canopy temperatures
- For best results, use contact or penetrant fungicides to prevent brown patch



# Brown Patch

## Causal Agent:

Brown Patch: *Rhizoctonia solani*



Brown Patch lesions close up showing dead tip



Brown Patch lesions on Tall Fescue leaves



Brown Patch on a Creeping Bentgrass putting green



Brown Patch on Kikuyu

|                                  |                                                                                                                                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b>                  | <p><b>Type 1:</b> Kills grass or badly damages it</p> <p><b>Type 2:</b> Stimulates growth</p> <p><b>Type 3:</b> Do not visually damage the sward but has fruiting bodies</p> |
| <b>Susceptible grass species</b> | All grass species susceptible.                                                                                                                                               |
| <b>Time of year</b>              | May be seen all year round if conditions are conducive. Most common in spring and autumn.                                                                                    |
| <b>Climatic conditions</b>       | Continual wet/dry cycles. Warm soil temperatures.                                                                                                                            |
| <b>Turf conditions</b>           | Light soils, free draining rootzone, added organic matter in new constructions or thatch presence.                                                                           |

## Management

**Cultural:** Reduce excess thatch; aerate to help water penetration; use wetting agents to wet rootzone; apply fertiliser or iron sulphate to mask symptoms of type 2 rings; level depressions with top dressing. For type 3, remove fruiting bodies.

**Chemical:** Some fungicides are available. Addition of wetting agent or applying wetting agent first will help the fungicide penetrate the rootzone.



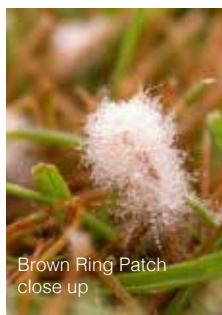
## ► Brown Ring Patch (Waitea Patch)

### Protect your turf from Brown Ring Patch

Brown Ring Patch is a disease that can take hold of your turf during spring, early summer as daytime temperatures increase.

#### Causal Agent:

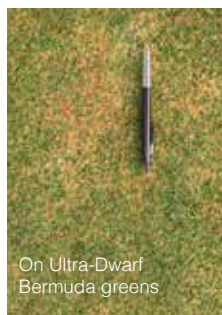
*Waitea circinata* var. *circinata*



Brown Ring Patch close up



Brown Ring Patch on Paspalum greens



On Ultra-Dwarf Bermuda greens



Brown Ring Patch on Bent greens

#### Susceptible Turfgrass:

Creeping Bentgrass, Paspalum, Poa Annua, Ultra-Dwarf Bermuda

#### Symptoms:

Brown Ring Patch is a widely spread disease on greens in South Africa. This disease infects the roots and slowly works its way up the plant. It can take months before symptoms are visible on the playing surface. Rhizoctonia diseases are spread by dead or alive plant material so best to apply a systemic fungicide prior to any cultural practices. Infection typically begins as thin yellow rings, ranging from several inches to a foot in diameter (10 cm to 0.3 m). Rings may be circular or irregular in shape, and may become brown over time.

**Patches** often have a **greenish colour behind the yellow ring** which tends to be **soft** and **sunken**. Symptoms are very similar to those of Yellow patch, and can also be confused with fairy ring and summer patch. Unlike yellow patch however, Waitea patch tends to occur over a broader range of temperatures, and persists into the warmer weather of the summer.

#### Conditions Favouring Disease:

The disease can first appear in the cooler weather of the spring and persist into the warm temperatures of the summer. Infection has been shown to occur between **10° - 35° C** with **optimal temperatures of 25° to 30° C**. The pathogen is thought to infect the upper roots, crown, stem and leaves of individual plants. It also appears to degrade thatch, which can cause sunken rings on putting greens.





# BANNER MAXX

The trusted choice to use curatively when disease symptoms become apparent. The fast absorption and systemic movement combines to ensure effective "stopping power".

**Banner Maxx acts in THREE ways to minimise the effects of turf diseases:**

#### Preventative

Prevents visible disease damage occurring

#### Curative

Control disease after infection but before symptoms are expressed

#### Eradicant

Limits disease spread and aids in recovery of new leaf

#### Uptake and Translocation

- ✓ Excellent rain fastness- 1 Hour
- ✓ Rapid uptake into leaf tissue with little root uptake
- ✓ Excellent translaminar movement
- ✓ Gradual "acropetal" movement towards leaf tip





# Take control of Large Patch

**Large Patch Preventative  
rate per ha:**

**1,4L Banner Maxx  
+ 250g Heritage**

**Large Patch Curative  
rate per ha:**

**2L Banner Maxx  
+ 372g Heritage**

**Remember to follow up  
21 days later**



# What is Banner Maxx?

- ✓ **Disease control** activity from **leaf** to **root**
- ✓ **For all sports turf surfaces**
- ✓ **Fast uptake** and **highly systemic activity**
- ✓ The **first-choice** option throughout the growing season
- ✓ Approved for key **foliar** and **soil-borne turf diseases**
- ✓ When targeting **root borne diseases** it is best to **spike** prior to the application and **water in** immediately for **6 minutes** for root borne diseases.

## Target Diseases:

|                  |                |                    |                  |
|------------------|----------------|--------------------|------------------|
| Anthrachnose     | Dollar Spot    | Large Patch        | Red Thread       |
| Brown Patch      | Fusarium Patch | Microdochium Patch | Rhizoctonia Zeae |
| Brown Ring Patch | Grey Leaf Spot | Powdery Mildew     | Summer Patch     |

syngenta.



# STICKS & STAYS

A **powerful contact fungicide** that acts on the outside of the turf plant creating a **strong barrier** to prevent fungal infection. Best overall **disease control** and **residual control** for **14-21 days**.



**Daconil Weatherstik®**  
Fungicide

## Product

- **Formulation type:** Liquid
- **Technology:** Fungicide
- **Pack size:** 5 litres
- **Contains:** 720g/l Chlorothalonil

## Label Approved Diseases

Controls 14 diseases, including Dollar Spot, Brown Patch, Gray Leaf Spot, Leaf Spot, Melting Out, Anthracnose, Rust, Fusarium Patch, and Red Thread.

## Application information

### Dosage:

5 l/ha  
 750 l water volume  
 Rain fast within 30min

### Preventative:

Apply 5 litres/ha at 7 - 14 day intervals starting when conditions are suitable for development of disease.

Independent trials over two seasons have shown Daconil Weatherstik average 87% control of disease, demonstrating the powerful eradicant control.

Assessments of turf quality during independent trials have shown Daconil Weatherstik increased turf quality by more than 40% over the course of an autumn treatment programme, compared to just 5% improvement with iprodione.

In 2006, Daconil Weatherstik application reduced infection from a highly damaging 25%, to an acceptable 3%.

In 2007, Daconil Weatherstik held infection at just 2%.

- Stays in suspension after 6 hours – better mixability
- Smallest particle size for maximum benefit
- Easier handling
- Greater efficiency, longer shelf life, less sediment
- Reduced foaming
- Daconil has a neutral pH for optimal performance
- Superior adhering power for extended coverage on the crown and sheath of grass blades
- A protective barrier that sticks and stays



## Provides Staying Power



# FROM ROOTS TO GREATNESS

SINCE 2002

**Heritage** is a **systemic strobilurin fungicide** for the control of Anthracnose, Brown Patch, Fairy Ring, Leaf Spot/Melting Out, Microdochium Patch, Pythium Blight, Pythium Root Dysfunction, Rust diseases and Take-All Patch.

- Systemic active ingredient
- Broad spectrum disease control
- Acts on Preventative, early Curative & Anti-sporulent stages of disease lifecycle
- Rainfast in 2 hours
- Protects against more than 33 diseases, including **all four classes** of pathogens – Oomycetes, Ascomycetes, Basidiomycetes and Deuteromycetes



- Anthracnose
- Brown Patch
- Leaf Spot
- Microdochium Patch
- Pythium Blight
- Pythium Root Dysfunction
- Rusts
- Take-All Patch
- Type 2 Fairy Rings

## Area of Use

- Managed Amenity Turf

## Application Information

- **Application rate:** Heritage 1kg/ha
- **Water volume:** 800-1000 litres of water/ha
- **Maximum number of treatments:** 4 per year  
**28 diseases for 28 days at 1kg/ha**
- Do not apply more than 10kg/ha per year and/or more than 30% of the total fungicide applications per year

## Recommended period of use

December & March (application timing will change due to disease pressure)

**The power of nature,  
harnessed by heritage.**

A diagram showing a cross-section of a plant stem with a white circular target and crosshairs. A yellow arrow points from the "Protective" label to the target area on the stem.

Protective

A diagram showing a cross-section of a plant stem with a white circular target and crosshairs. A yellow arrow points from the "Curative" label to the target area on the stem.

Curative

Instrata<sup>®</sup> is an eradicator and antisporent broad spectrum foliar fungicide with both contact and systemic properties for control of Microdochium Patch, Dollar Spot, Brown Patch, Red Thread and Anthracnose in managed amenity turf.

#### **BENEFITS**

- **Contact and systemic active ingredients**
- **Broad spectrum disease control**
- **Acts on all stages of disease lifecycle**
- **Rainfast in 30 minutes**

## Label Approved Diseases

- Anthracnose (Dec-Feb: NB to get your preventative applications down in time)
- Brown Patch (Sept-April)
- Dollar Spot (Refer to Smith & Kerns Dollar Spot model for your area)
- Microdochium Patch (April-July)
- Red Thread (Jan-Dec)

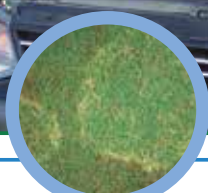
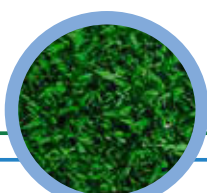
## Recommended period of use

During periods of active growth

Outside in protection

# Walala Wasala!

Every car needs a regular service and so does your turf!



## PREVENTATIVE 'PERFECT TURF' PLAN



Sound Integrated Pest Management Programme



Combat disease before it gets out of control



No surprises.  
Consistent results

# VS

## CURATIVE 'DISEASED TURF' PLAN



Taking care of pests once the damage has been done



Fighting fires



Unforeseen problems and longer recovery periods



SYNGENTA PRODUCTS ARE

# QUALITY & SAFETY ASSURED

- ✓ Exceptional **turf plant safety** and turf plant **health**
- ✓ **Unique formulation** far more effective against **disease**
- ✓ **Appropriately timed applications** lead to **consistent turf quality**
- ✓ **Environmental risk assessment PASSED** on birds, mammals, beneficial insects, soil organisms & aquatic species





## ► Disease by turf variety

| ANTHRACNOSE                                                                         | BROWN PATCH                                         | BROWN RING PATCH<br>(WAITEA PATCH)                                                                                               | DOLLAR SPOT                                        |
|-------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Cool & Warm Season                                                                  | Cool Season                                         | Cool & Warm Season                                                                                                               | Cool & Warm Season                                 |
| Creeping Bentgrass<br>Poa Annua<br>Paspalum                                         | Most species of cool<br>season turfgrass            | Creeping Bentgrass<br>Poa Annua<br>Paspalum<br>UDBG                                                                              | Most species of<br>warm & cool season<br>turfgrass |
| LEAF, STEM, STRIPE<br>RUST                                                          | MICRODOCHIUM<br>PATCH                               | POWDERY<br>MILDEW                                                                                                                | PYTHIUM BLIGHT                                     |
| Cool & Warm Season                                                                  | Cool Season                                         | Cool & Warm Season                                                                                                               | Cool & Warm Season                                 |
| Bentgrass<br>Kentucky Bluegrass<br>Perennial Ryegrass<br>Tall Fescue<br>Zoysiagrass | Most species of cool<br>season turf                 | Bermudagrass<br>Fine-Leaf Fescue<br>Kentucky Bluegrass<br>Perennial Ryegrass                                                     | Most species of<br>warm & cool season<br>turfgrass |
| SPRING DEAD SPOT                                                                    | SUMMER PATCH                                        | LEAF SPOT/ MELTING<br>OUT                                                                                                        | TAKE-ALL PATCH                                     |
| Warm Season                                                                         | Cool Season                                         | Cool & Warm Season                                                                                                               | Cool & Warm Season                                 |
| Ultra-Dwarf Bermuda<br>Bermudagrass<br>Buffalograss<br>Zoysiagrass                  | Fine-Leaf Fescue<br>Kentucky Bluegrass<br>Poa Annua | Creeping Red Fescue<br>Kentucky Bluegrass<br>Perennial Ryegrass<br>Poa Annua<br>Tall Fescue<br>Some varieties of<br>Bermudagrass | Creeping Bentgrass                                 |

## Disease by turf variety

| FAIRY RING                                                                                                          | GREY LEAF SPOT                                                                                                  | LARGE PATCH                                       |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Cool & Warm Season                                                                                                  | Cool & Warm Season                                                                                              | Warm Season                                       |
| Most species of warm & cool season turfgrass                                                                        | Bermudagrass<br>Kikuyu<br>Perennial Ryegrass<br>Tall Fescue                                                     | Kikuyu                                            |
| PYTHIUM ROOT ROT (ROOT DYSFUNCTION)                                                                                 | RED THREAD                                                                                                      | RHIZOCTONIA ZEAE (RHIZOCTONIA LEAF & SHEATH SPOT) |
| Cool & Warm Season                                                                                                  | Cool & Warm Season                                                                                              | Cool & Warm Season                                |
| Annual Bluegrass & Creeping Bentgrass most susceptible.<br>Bermudagrass and Seashore Paspalum can also be affected. | Bermudagrass<br>Creeping Bentgrass<br>Fine-Leaf Fescue<br>Kentucky Bluegrass<br>Perennial Ryegrass<br>Poa Annua | Most species of warm & cool season turfgrass      |
| TAKE-ALL ROOT ROT (BERMUDA GRASS DECLINE)                                                                           |                                                                                                                 |                                                   |
| Warm Season                                                                                                         |                                                                                                                 |                                                   |
| Bermudagrass<br>Ultra-Dwarf Bermuda                                                                                 |                                                                                                                 |                                                   |

| COOL SEASON                  | WARM SEASON         |
|------------------------------|---------------------|
| BENT GRASS                   | BEREA (LM)          |
| FESCUES                      | BERMUDA             |
| KENTUCKY BLUEGRASS           | BUFFALOGRASS        |
| POA ANNUA (ANNUAL BLUEGRASS) | KIKUYU              |
| RYE                          | PASPALUM            |
| TALL FESCUE                  | ULTRA-DWARF BERMUDA |
|                              | ZOYSIA              |

# INSECT TARGET TIMING

## Use Preventatively or Curatively

Meridian offers high levels of pest control and has been shown to be highly effective in controlling the damaging larval stage of White Grubs and Juvenile Mole Crickets, Ants, Black Maize Beetles and Rove Beetles.



### KEY FEATURES

- ✓ True broad spectrum control of surface-feeding insects
- ✓ Formulated to provide high water solubility for faster results
- ✓ Highly effective at low rates of application
- ✓ Can be applied preventatively or when small white grubs/juvenile mole crickets are present
- ✓ Easy to use formulation
- ✓ Doesn't kill beneficial insects

### APPLICATION TIMINGS TO REDUCE ADULT INSECT POPULATIONS AND DAMAGE:

Apply preventatively:  
400grams-1.2kg/ha Meridian  
These products can be tanked mixed with any Syngenta fungicides.  
**Qualibra Wetting Agent is great to tank mix with Meridian.**

# Quick Knockdown & Repellency Effect



## Mode of Action

- A capsule suspension contact and stomach insecticide
- Acts on the nerves system
- Acetylcholine transfers impulse
- Acetylcholine esterase regulates impulses
- Lambda-cyhalothrin binds to and deactivates the enzyme
- Spontaneous convulsions leads to death
- Only the Cis-isomer is active

## Control Spectrum & Use Rates

- Ants, armyworms, crickets, cutworms, fleas (adult), grasshoppers, Japanese beetle (adults), Bermuda grass mites, Sod webworms, Ticks  
400 ml/ha 10-14 day intervals
- Billbugs, Turfgrass Ataenius, Weevils, Young Mole crickets  
750 ml/ha 10-14 day intervals
- Adult Mole crickets - 15 l/ha 10-14 day intervals + surfactant



# Rotate your chemistry





# Fast weed knockdown

Enjoy swift results with minimal effort



**Fusilade Forte®**  
**stops weed growth**  
**within 3 days**  
**and controls**  
**within 1-3 weeks**

## Mode of Action

- Fusilade Forte dries fast making it effective if applied 1 hour before rain or watering
- Provides excellent turf safety on fine fescue at low rates
- Fast and controlled kill of grass weeds such as bermudagrass, goosegrass and crabgrasses
- Can be applied over the top to certain ornamental plants, spot sprayed, or broadcasted to residential areas, flowerbeds & groundcovers

## Control Spectrum & Use Rates

- Fusilade Forte is a selective post-emergence herbicide used to control grass weeds at rates typically ranging from 830 ml/ha - 3.3 litres/ha, depending on the grass type
- Goosegrass Dabbing:
  - 30 ml Fusilade Forte
  - 5 ml Ryder
  - 1 lt Water Volume
- Knapsack rates:
  - 83 ml Fusilade Forte
  - 2 ml Compliment Super
  - 5 lt Water Volume

# A post-emergent broadleaf weed herbicide

CASPER Turf Herbicide is a **CLEVER COMBINATION** of  
two active ingredients - **DICAMBA & PROSULFURON**  
for **DOUBLE THE ACTION**



Bindii



Khaki Weed



Lambs Tongue



Blackberry Nightshade



Wonderlawn



Milk Thistle



Subterranean Clover



Catsear



Burr Medic



White Clover



Wireweed



Chickweed



Cotula



Purslane



Creeping Oxalis



Dandelion



Pennywort



Curled Dock



DO NOT APPLY CASPER TO TURF THAT IS NOT WELL ESTABLISHED  
DO NOT APPLY CASPER TO BUFFALO GRASS  
DO NOT APPLY CASPER TO GOLF COURSE GREENS

## Product

- **Formulation type:** WD Water dispersible granule formulation
- **Technology:** Herbicide
- **Pack size:** 1kg
- **Contains:** 50 g/kgProsulfuron  
+ 500 g/kgDicamba

## Application information

- **Application rate:**  
CASPER delivers high levels of control with follow up applications only needed if significant seed germination occurs after application.

Convenient rate ranges (0.6 to 1.2 kg/ha) for different weeds ensures flexibility and economy. Applications to control weeds should ideally be made when they are still actively growing and not towards the end of the growing cycle when plants are alive but not actively growing.

### **Active weed growth = Systemic xylem and phloem movement essential for systemic herbicide action**

CASPER as a post-emergent herbicide is taken up by leaves, shoots and roots of target weeds. Application targeted towards delivering CASPER to thoroughly cover the leaves and shoots is best. Always apply with a non-ionic surfactant. CASPER can be washed off the leaves and into the soil to promote root uptake for complete systemic action.

Add a non-ionic surfactant at 0,25-0,5% w/v ratio.

Apply in total volume of 400-800 l/ha - using higher volume in heavy weed infestations or higher cut turf.

## Area of Use

- **Warm Season Turf Grasses:**  
Bermuda, Kikuyu, Paspalum, Zoysia
- **Cool Season Turf Grasses:**  
Do a trial spray first.  
Bent Grass, Fescue, Perennial Ryegrass

## What CASPER offers you

- A broad spectrum selective post emergence herbicide for turf that is highly effective in controlling broadleaf weeds
- A convenient water dispersible granular formulation with economical rates and in a convenient 1 kg container making it easy to handle and mix
- Quick systemic action (xylem) with root, shoot and leaf uptake

Visit [www.syngentaturf.co.za](http://www.syngentaturf.co.za) for target weeds rates and application guidelines

**Highly effective control of many  
broad leaf weeds**



# GOOSEGRASS CONTROL

**Control “adult goose grass” by dabbing the plants and repeat the dabbing 21 days later.**

Typically triggered by high compaction.

Best to apply Pre-emergent herbicides in your infected area in

February, September & mid-October.

Remember this weed is largely spread by seed so best to cut off seed as soon as it appears.

**Rate/ha:** 30ml Fusilade

**Water Volume:** 1 Litre

**Reason:** Goose Grass Control

**No. Apps:** 1

Repeat 21 days later.



# PRE-EMERGENT WEED CONTROL

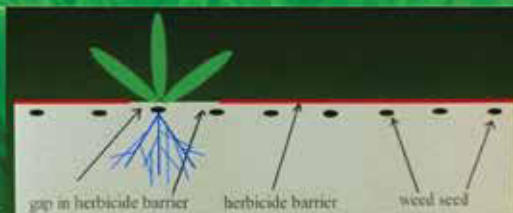
Solutions for your Fairways, Tees & Roughs – not to be used on greens.

A fantastic tool. The trick is to apply the right product at the right time.

Prevent Goosegrass seeds from germinating.

- ✓ Apply 2L/ha to moist soils and irrigate within 24 hours after application if rainfall doesn't occur.
- ✓ Creates a **barrier** in the soil to prevent establishment and germination, it is important to avoid damage to the barrier for at least 6-8 weeks

## Weed Control With Preemergence Herbicides



Large gaps in herbicide barriers result in weed escapes.

Goosegrass typically triggered by high compaction. Best to apply in Feb follow up 6 weeks later, repeat app Sep and mid Oct.

Poa typically germinates in April & August. Best to apply early Mar & mid Apr then again early July & follow up mid Aug.

syngenta.

Your  
**Plant Growth Regulator**  
of choice

Great turf quality and  
ease of maintenance

- Improved density, rooting and plant health
- Enhanced playability
- Reduced mowing, cost savings



 **NoMow®**  
Plant growth regulator



## Product

- **Formulation type:** EC formulation
- **Technology:** Plant growth regulator
- **Pack size:** 5 litre
- **Contains:** 250 g/l trinexapac-ethyl

## Recommended period of use

NoMow can be safely used during Spring & Summer.

**NoMow Plant Growth Regulator is a trusted and economical turf growth regulator for large areas that optimises the mowing effort and improves turf quality. It should be applied to actively growing turf at least 6 hours before or after mowing. Good mowing management leading up to application is required to achieve a good quality turf surface and to obtain the best results.**

NoMow is an emulsion concentrate (EC) with minimal odour. It mixes completely with water and may be tank mixed with many commonly used fungicides and liquid fertilisers.

Physical compatibility of mixtures is not a guarantee that a tank mix will be safe to turf (eg NoMow is compatible with broadleaf herbicides containing MCPA, 2,4-D amine or dicamba, but the tank mix can cause transient yellowing after application).

## Area of Use

- **Warm Season Turf Grass:**  
Kikuyu, Bermuda/Cynodon

## Application information

**Kikuyu tees, fairways, semi rough & sports fields**

- **Tees & Semi rough & sports fields:**  
500 ml - 1 litre/ha every 14-28 days
- **Fairways:** 1 - 1.5 litre/ha every 21-28 days
- **Tank mix:**  
Tank mix with TT Star (1 - 2 litre/ha),  
TT Foliar (8 - 12,5 kg/ha),  
Ryder 300 ml-1 litre/ha  
OR 10 kg Potassium Nitrate  
OR 10 kg CA Nitrate

- Improved density, rooting & playability
- Enhances colour
- Reduce water usage
- Flexibility in wet weather
- Enhances turf health and playing surface consistency

**Fantastic cost effective product to improve density, rooting, reduce mowing & produce your ultimate playing surface & flexibility in wet weather**

## ▶ Growing Degree Days

NoMow should be applied to healthy, actively growing turf before the onset of stress. Alongside cultural practices such as proper management of fertilization, irrigation, drainage and optimum mowing height, NoMow can be applied throughout the growing season as long as the turf remains healthy. Application rates depend on the species of turf and its height of cut. Please review the product label and our agronomic program for specific recommendations.

**Growing Degree Days (GDDs)** are commonly utilized to predict important events in plant development. Knowing your accumulated GDD threshold can help you better manage your application timing, including predicting PGR application intervals.

Growth Degree Days (GDD) is a great tool to calculate the rate at which grass will grow, and in doing so enable you to tailor the timing of many turf management operations - not least of all your NoMow application intervals.

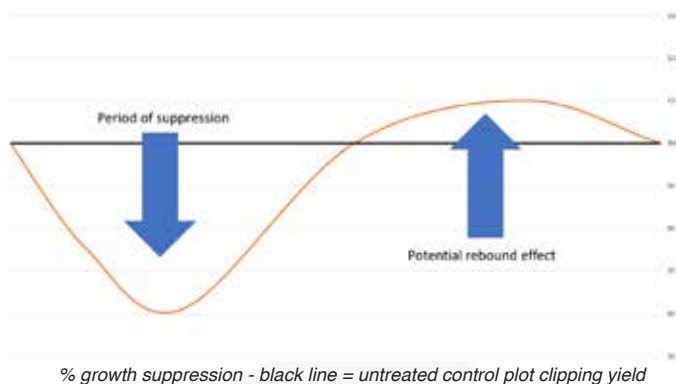
It's calculated by taking the average of day's highest and the lowest temperatures, then allowing for a base temperature (typically the temperature that turf in that climate begins to grow), to generate a GDD figure.

This is a simple way of measuring the climatic conditions, it's influence on turf growth and the impact it will have on NoMow's longevity.

GDD is used for many things including **insect activity, guidance on timings of applications and generally monitoring the growing conditions for the turf.** GDD's best use in turf is best used for timing NoMow applications to help you get a consistent level of growth suppression.

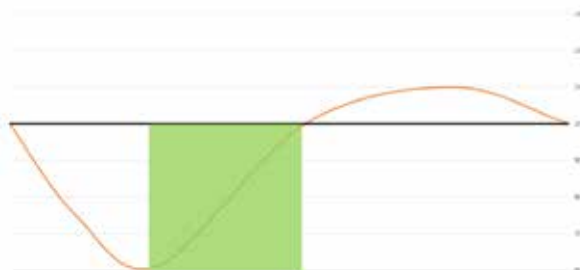
It is a far more precise way to avoid stacking product and never coming out of suppression. It helps you to gain all the plant health benefits, whilst always knowing what your turf is doing, so you don't over fertilise or bounce into a period of unexpected growth.

Below is a hypothetical graph that show the growth curve after a NoMow application.



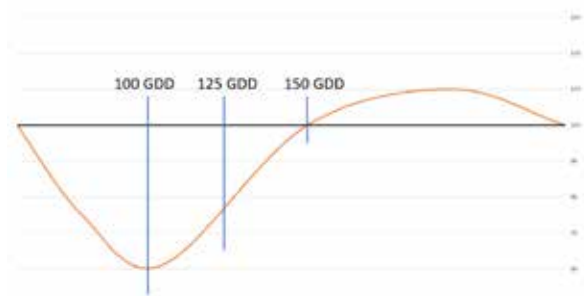
## ► A tool for PGR application

After application of NoMow, growth suppression begins and will last for a period of time - that, as discussed above, depends on the temperature. Our objective is to re-apply after the period of maximum suppression, but before we come out of suppression - in the period shown below.



By applying in the green block we avoid significant “stacking” of the product and avoid moving into rebound. There has been lots of work done on this in the USA, but very little in the UK.

However, using experience and anecdotal evidence, I now encourage people to apply NoMow in the 100 - 150 GDD window.

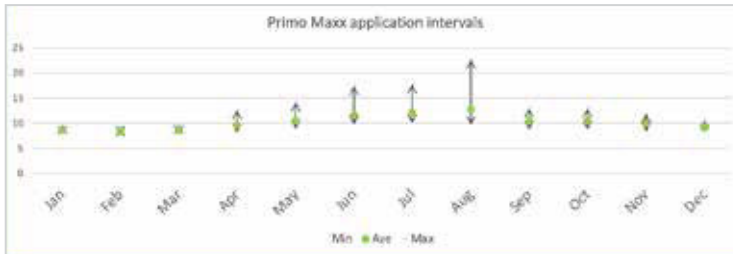


GDD is great tool to help you to fine tune your NoMow applications to get the very best out of it. We have created a GDD tool on our website <https://www.syngentaturf.co.uk/growing-degree-days> which will help you identify your application windows and notify you when they are approaching.

NoMow is a great product and GDD is a great tool to get the very best out of it. You don't need to use GDD, but a basic understanding of how the two work together could help you get more consistent results.

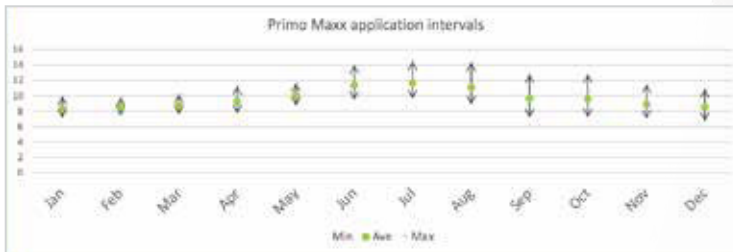
## Growing Degree Days examples

### GDD Durban



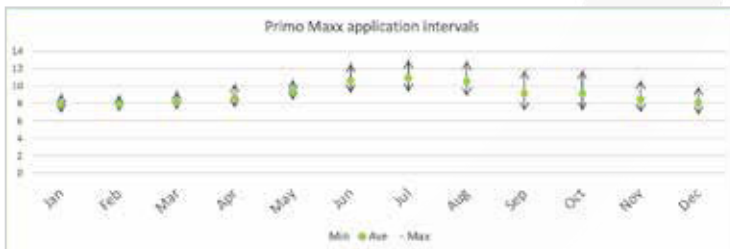
|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

### GDD Hazyview



|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

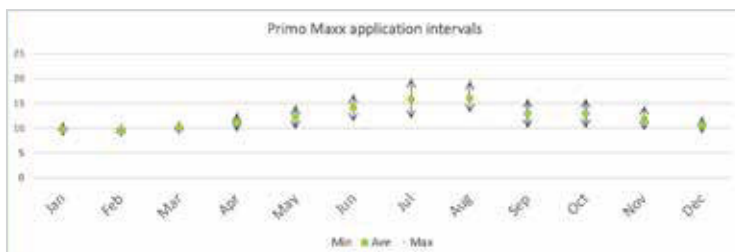
### GDD Malelane



|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

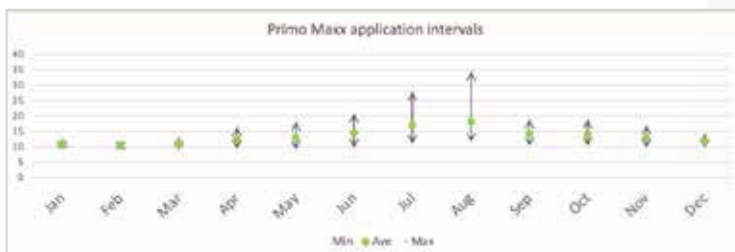
## NoMow intervals South Africa

### GDD Cape Town



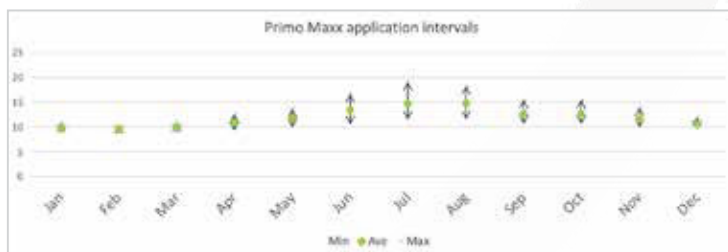
|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

### GDD George



|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |

### GDD St Francis Bay



|                    |     |
|--------------------|-----|
| Growth Degree Days | 200 |
| Base Temperature   | 0   |



**Ryder** is the turf pigment technology that protects turf from harmful UV rays and excessive light, delivering a consistent natural green colour.

## BENEFITS

- Provides a deep desirable green colour
- Manage exposure to harmful UV light
- Colour and protection can be adjusted through application rate.

## Application Information

# Preventative Application Strategy (Frost Regions)

|                                                                                 | January                                           | February                                          | March                                             | April                                             | May                    |
|---------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|------------------------|
| <b>Fungicide Timeline</b>                                                       |                                                   |                                                   |                                                   |                                                   |                        |
| Anthracnose                                                                     | Instrata                                          | Instrata                                          | Instrata                                          | Instrata                                          | Instrata               |
| Brown Patch ring patch                                                          | Instrata<br>Banner Maxx<br>Heritage               | Instrata<br>Banner Maxx<br>Heritage               | Instrata<br>Banner Maxx<br>Heritage               | Instrata<br>Banner Maxx<br>Heritage               | Instrata               |
| Dollar Spot                                                                     | Instrata<br>Banner Maxx                           | Instrata<br>Banner Maxx                           | Instrata<br>Banner Maxx                           | Instrata<br>Banner Maxx                           | Instrata               |
| Fairy Ring                                                                      | Heritage                                          | Heritage                                          | Heritage                                          | Heritage                                          |                        |
| Faiding Out                                                                     | Instrata<br>Heritage                              | Instrata<br>Heritage                              | Instrata<br>Heritage                              | Instrata<br>Heritage                              | Instrata               |
| Grey Leaf Spot                                                                  | Instrata<br>Banner Maxx<br>Heritage<br>Daconil WS | Instrata<br>Banner Maxx<br>Heritage<br>Daconil WS | Instrata<br>Banner Maxx<br>Heritage<br>Daconil WS | Instrata<br>Banner Maxx<br>Heritage<br>Daconil WS | Instrata<br>Daconil WS |
| Large Patch                                                                     | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           |                        |
| Leaf Spot                                                                       | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Daconil WS             |
| Microdochium Patch (WC Only)                                                    | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Daconil WS             |
| Necrotic Ring Spot                                                              | Instrata<br>Banner Maxx<br>Heritage               | Instrata<br>Banner Maxx<br>Heritage               | Instrata<br>Banner Maxx<br>Heritage               | Instrata<br>Banner Maxx<br>Heritage               | Instrata               |
| Powdery Mildew                                                                  | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           |                        |
| Pythium Blight                                                                  | Subdue Maxx<br>Heritage<br>TT ClearOut            | Subdue Maxx<br>Heritage<br>TT ClearOut            | Subdue Maxx<br>Heritage<br>TT ClearOut            | Subdue Maxx<br>Heritage<br>TT ClearOut            | TT ClearOut            |
| Pythium Root Rot                                                                | Subdue Maxx<br>TT ClearOut                        | Subdue Maxx<br>TT ClearOut                        | Subdue Maxx<br>TT ClearOut                        | Subdue Maxx<br>TT ClearOut                        | TT ClearOut            |
| Spring Dead Spot                                                                | Banner Maxx                                       | Banner Maxx                                       | Banner Maxx                                       | Banner Maxx                                       |                        |
| Take All Patch                                                                  | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Banner Maxx<br>Heritage<br>Daconil WS             | Daconil WS             |
| Waitea Patch                                                                    | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           | Banner Maxx<br>Heritage                           |                        |
| <b>Insecticide Timeline</b>                                                     |                                                   |                                                   |                                                   |                                                   |                        |
| <b>Non - Frost Regions - Insecticide Applications Must Be One Month Earlier</b> |                                                   |                                                   |                                                   |                                                   |                        |
|                                                                                 | January                                           | February                                          | March                                             | April                                             | May                    |
| Mole Crickets                                                                   | Meridian<br>Karate Zeon                           | Meridian<br>Karate Zeon                           | Meridian<br>Karate Zeon                           |                                                   |                        |
| Worms & Beetles                                                                 | Meridian<br>Karate Zeon<br>Proclaim               | Meridian<br>Karate Zeon                           | Meridian<br>Karate Zeon                           |                                                   |                        |
| Insect eggs & Larvae                                                            |                                                   |                                                   |                                                   |                                                   |                        |
| White Grubs                                                                     | Meridian<br>Karate Zeon                           | Meridian<br>Karate Zeon                           | Meridian<br>Karate Zeon                           |                                                   |                        |
| <b>Herbicide Timeline</b>                                                       |                                                   |                                                   |                                                   |                                                   |                        |
| Crab Grass Germination                                                          |                                                   |                                                   |                                                   |                                                   |                        |
| Goose Grass Germination                                                         |                                                   |                                                   |                                                   |                                                   |                        |
| Poa Germination                                                                 |                                                   |                                                   | Pennant Magnum                                    | Pennant Magnum                                    |                        |
| Peak Broad Leaf Germination                                                     | Casper                                            | Casper                                            | Casper                                            | Casper                                            | Casper                 |

Disclaimer: Persons intending to use these products and programmes must read and follow the label accompanying that product and comply with all applicable laws and regulations relating to its use.



| June        | July        | August         | September      | October        | November    | December    |
|-------------|-------------|----------------|----------------|----------------|-------------|-------------|
|             |             |                | Instrata       | Instrata       | Instrata    | Instrata    |
|             |             |                |                |                |             |             |
|             |             |                | Instrata       | Instrata       | Instrata    | Instrata    |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
|             |             |                | Instrata       | Instrata       | Instrata    | Instrata    |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
|             |             |                | Instrata       | Instrata       | Instrata    | Instrata    |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
|             |             |                | Instrata       | Instrata       | Instrata    | Instrata    |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
| Daconil WS  | Daconil WS  | Daconil WS     | Daconil WS     | Daconil WS     | Daconil WS  | Daconil WS  |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
| Daconil WS  | Daconil WS  | Daconil WS     | Daconil WS     | Daconil WS     | Daconil WS  | Daconil WS  |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
| Daconil WS  | Daconil WS  | Daconil WS     | Daconil WS     | Daconil WS     | Daconil WS  | Daconil WS  |
|             |             |                | Instrata       | Instrata       | Instrata    | Instrata    |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
|             |             |                | Subdue Maxx    | Subdue Maxx    | Subdue Maxx | Subdue Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
| TT ClearOut | TT ClearOut | TT ClearOut    | TT ClearOut    | TT ClearOut    | TT ClearOut | TT ClearOut |
|             |             |                | Subdue Maxx    | Subdue Maxx    | Subdue Maxx | Subdue Maxx |
| TT ClearOut | TT ClearOut | TT ClearOut    | TT ClearOut    | TT ClearOut    | TT ClearOut | TT ClearOut |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
| Daconil WS  | Daconil WS  | Daconil WS     | Daconil WS     | Daconil WS     | Daconil WS  | Daconil WS  |
|             |             |                | Banner Maxx    | Banner Maxx    | Banner Maxx | Banner Maxx |
|             |             |                | Heritage       | Heritage       | Heritage    | Heritage    |
|             |             |                |                |                |             |             |
| June        | July        | August         | September      | October        | November    | December    |
|             |             | Meridian       | Meridian       | Meridian       | Meridian    | Meridian    |
|             |             | Karate Zeon    | Karate Zeon    | Karate Zeon    | Karate Zeon | Karate Zeon |
|             |             |                |                | Meridian       |             |             |
|             |             |                |                | Karate Zeon    |             |             |
|             |             |                |                | Proclaim       |             |             |
|             |             | Meridian       | Meridian       | Meridian       | Meridian    | Meridian    |
|             |             | Karate Zeon    | Karate Zeon    | Karate Zeon    | Karate Zeon | Karate Zeon |
|             |             | Meridian       | Meridian       | Meridian       | Meridian    | Meridian    |
|             |             | Karate Zeon    | Karate Zeon    | Karate Zeon    | Karate Zeon | Karate Zeon |
|             |             |                |                |                |             |             |
|             |             |                | Pennant Magnum | Pennant Magnum |             |             |
|             |             |                |                |                |             |             |
|             |             | Pennant Magnum | Pennant Magnum | Pennant Magnum |             |             |
|             |             |                |                |                |             |             |
|             |             | Pennant Magnum |                |                |             |             |
|             |             |                |                |                |             |             |
| Casper      | Casper      | Casper         | Casper         | Casper         | Casper      | Casper      |

# Download the GreenCast Turf App



The GreenCast Turf App is an easy-to-use, one-stop tool to keep a record of your disease control actions and pro-active guidance to ensure you get the best possible results out of all fungicide applications.

Fully customisable to your situation, The GreenCast Turf App will guide through the process from disease identification, to product selection; tank-mix options; optimum application advice and timing.

Features include:

- Email spray sheet recommendations direct to the sprayer operator
- Calculate sprayer fill and tank split options
- Advice on nozzle selection; water volume and sprayer set-up
- Maintain all spray records in one place

The GreenCast Turf App maintains a full reference resource of applications, to assesses results of the best decisions for your course – and develop better programmes every season for the future.



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Syngenta would like to acknowledge the following individuals for their contribution to the development of this turf guide **Pete Dernoeden** PhD, University of Maryland USA, and **Bruce Clarke** PhD, Rutgers University USA.

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Standard Leaf or  
Grass Clippings

Lowveld Standard Oil  
+ OrgC%

Portable Water for Human  
Consumption

Irrigation Water  
Excluding Heavy metals

---

These are only a few of our analyses.

Full parameter and sampling  
guidelines available on request.

Please visit our website [www.labserve.net](http://www.labserve.net)  
or contact us for more information.

Talking Turf recommends these tests.



**Nematologist on turf:**  
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**ARC – NELSPRUIT**

[Mieke@arc.agric.za](mailto:Mieke@arc.agric.za)



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