

Helminthosporium Disease in Turfgrass

Occurrence

1. Predisposing conditions

Drechslera spp. are capable of surviving unfavourable conditions as conidia (thick cell walled resting spores) or dormant mycelium. These conidia are spread predominantly by wind, rain or machinery and when conditions become ideal, the conidia germinate and infect plant tissue.

Bipolaris spp. and *Exserohilum* spp. survive adverse conditions by surviving in infected plant material and debris. When rainfall occurs, these fungi sporulate profusely and eventually gain entry to further plant tissue.

2. Temperature

As Helminthosporium disease includes a group (complex) of fungi, generally we find that activity may occur over a wide range of temperatures. At any given time of the year, at least one species within the fungal group can be isolated. Therefore, Helminthosporium disease can occur year round. Generally however, the main period of activity of Helminthosporium diseases is during mild, wet periods in Autumn to Spring where atmospheric temperatures reach 15-18°C. The exception to this is *Bipolaris* spp. which infects foliage of cool season grasses in wet summers at 20-35°C.

3. Susceptible Turf Species

Bipolaris spp. and *Exserohilum* spp. are mainly pathogenic on warm season turfgrasses, particularly Kikuyu. Infestations on Bentgrass have also been identified. *Drechslera* spp. is capable of causing major disease outbreaks on couch, bent, fescue and ryegrass.

Disease Symptoms

Although the fungal symptoms of the Helminthosporium diseases are quite characteristic, the symptoms can vary greatly with each pathogen or host. Typically, on cool season grasses and Kikuyu symptoms appear as very small (pinhead size), solid brown to purple coloured lesions or spots.

On Couch, white or black blotching of the turfgrass surface appears. These blotches are irregular in shape and range from 2-60cm in diameter. Inspection of the leaves and stems shows lesions which are purple to black in colour. Severely infected leaves will eventually wither and dry to a light tan colour.



White Helminthosporium in a bowling green



Black Helminthosporium in high cut turf

Cultural Control Methods

Avoid excess Nitrogen during potential disease development periods (wet periods). Balance Nitrogen with potassium to strengthen turf cell walls, limiting susceptibility to mycelium penetration. A slow release source of potassium applied in Autumn and Spring or during prolonged wet periods would assist in reducing disease incidence.

Investigate drainage capacity of areas routinely affected by disease. Helminthosporium disease is often found in areas where poor drainage occurs. Therefore, by increasing the drainage rate, reduced water pooling occurs, preventing the ability of disease to sporulate as profusely.

Irrigation management is also critical in the prevention of Helminthosporium diseases. By reducing the periods of leaf wetness, the disease spread can be restricted. Irrigation should be undertaken in the early morning, rather than late afternoon or in the evening. This reduces the period of leaf wetness, limiting disease spread.

Fungicidal Control

In many turf situations Helminthosporium disease does not require fungicidal application, as once the period of wet weather ends, disease pressure usually declines. However, in sportsturf situations where uniformity is critical fungicide applications are often critical.

Product	Active Ingredient	Mode of Action Group	Key Points	Contact / Systemic	Rate (per 100m ²)
Rovral GT	Iprodione	2	<ul style="list-style-type: none"> • Curative Activity • Broad Spectrum control • Up to 21 days protection • Proven Performer 	Contact (Translaminar)	180mL
Fore Rainshield	Mancozeb	M3	<ul style="list-style-type: none"> • Unique mancozeb formulation ensuring excellent protectant action on Helmo for up 14 days 	Contact	335 – 415mL
TMTD 600	Thiram	M3	<ul style="list-style-type: none"> • Contact fungicide providing preventative activity up to 14 days. • Dust free easier to use formulations than other thirams. 	Contact	160mL
Bayfidan	Triadimenol	3	<ul style="list-style-type: none"> • Proven Performer on Helminthosporium. • Good systemic activity 	Systemic	30 – 60mL
Dedicate	Trifloxystrobin Tebuconazole	11/3	<ul style="list-style-type: none"> • Both curative and preventative activity • Systemic and contact action • Strong activity on White Helmo 	Contact / Systemic	20-30mL
Heritage MAXX	Azoxystrobin	11	<ul style="list-style-type: none"> • Strong residual activity • Up to 28 days preventative activity 	Systemic	60mL
Headway MAXX	Azoxystrobin Propiconazole	11/3	<ul style="list-style-type: none"> • Good residual activity • Up to 28 days preventative activity 	Systemic	90mL