

Pythium

Management Guide

Focused on Specialty markets



Pythium is one of a few turf diseases that can take hold and develop quickly, creating devastating turf loss in as little as a few hot and humid days.

The Pythium fungi are soil borne plant pathogens capable of causing different diseases on a range of turfgrass species. Pythium can be a disease to either seedling or mature turfgrass swards. *Pythium aphanidermatum* and *Pythium ultimum* are generally considered the two most predominant turf infecting species.

The initial symptoms of Pythium Blight are circular reddish brown spots in turf, ranging in size from as little as 2.5 to 15cm. In the morning dew, infected leaf blades appear water soaked and dark, may feel slimy and often mat together. As they dry, the leaf blades shrivel and turn reddish brown.

On humid nights when dew forms, you may see mycelium on the outer margins of the spots the following morning. With plentiful plant moisture, this mycelium may remain active and visible far into the day.



Pythium disease activity on bentgrass golf greens

The infected grass plants collapse quickly. If temperature and relative humidity remain high, the spots may coalesce, and large areas of turf can be lost.

Both key species of Pythium survive as a saprophyte in the thatch, soil or both. In favourable conditions, the disease invades roots as well as plant tissue and spreads from plant to plant through active mycelial growth. Pythium is a 'water mould' and survives well in waterlogged soils or on debris in ponds.

Pythium can occur throughout the year, however the disease is most severe when temperatures and relative humidity is high.

Pythium will commonly appear during the "150 rule", which is when day + night temperatures are above 150°F (66°C).

Nutter et al found in 1983 that Pythium infection was likely to occur when:

1. A maximum daily temperature was higher than 30°C;
2. Followed by at least 14 hours of relative humidity greater than 90%, provided the minimum temperature was higher than 20°C.

More recent work undertaken by Shane in 1994 modified Nutter et al findings to the following infection requirements:

1. **A maximum daily temperature was higher than 27.7°C;**
2. **Followed by at least 9 hours of relative humidity greater than 90%, provided the minimum temperature was higher than 20°C.**



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Product Name	Key Features	Application Rate	Mode of Action Group	Systemic OR Contact Activity	Formulation	Registered For				
						Pythium	Damping Off	Leaf Blight	Root Dysfunction	Root Rot
ProForce Grenadier 800WG Fungicide	ProForce Grenadier 800WG Fungicide is a targeted oomycete fungicide containing 800g/kg of the active ingredient fosetyl aluminium. It is registered for the control of Pythium diseases in golf, bowling greens and other intensively managed turf. Grenadier 800WG is a quality wettable granule formulation, which has been newly improved for quicker and more effective solubilisation in water. As a result, Grenadier 800WG mixes almost completely with water and may be tank mixed with many commonly used fungicides and liquid fertilisers. Grenadier 800WG has minimal odour, and offers full systemic activity within the plant, moving in both directions (up and down).	12.5kg/ha (125g/100m ²)	33	Systemic (up & down)	Wettable Granule	●				
ProForce Pistol 600SC Fungicide	Proforce Pistol 600SC Fungicide is a broad spectrum, contact or protectant fungicide containing 600g/L of the active ingredient Thiram. It is registered for the control of Damping Off (Pythium) as well as Brown Patch, Helminthosporium and Fusarium patch in all recreational turf situations.	16-20L/ha (160-200mL/100m ²)	M3	Contact	Suspension Concentrate		●			
ProForce Shrapnel 600SL Fungicide	ProForce Shrapnel 600SL Fungicide contains 600g/L of the active ingredient Propamocarb Monohydrochloride and is registered for the control of Pythium in a range of turf and ornamental plant applications. Shrapnel 600SL can provide a fast, efficient curative fungicide for Pythium infection. It can also provide a useful rotational option for preventative control. Shrapnel 600SL is formulated in Australia, from imported materials.	4.5-6.5L/ha (45-65mL/100m ²)	28	Systemic (upwards)	Soluble Liquid	●	●			
ProForce Solitaire 240ME Fungicide	ProForce Solitaire 240ME Fungicide is a targeted Pythium fungicide containing 240g/L of the active ingredient Metalaxyl-M. Metalaxyl-M is also known as Mefanoxam in some countries. Solitaire 240ME is specifically registered for the control of Pythium Leaf Blight, Pythium Root Rot and Damping Off in all turf management situations. Solitaire 240ME is formulated in Australia, from imported materials.	1.75-3.5L/ha (17.5-35mL/100m ²)	4	Systemic (upwards)	Micro-Emulsion		●	●		●
Terrazole 350WP Fungicide	Terrazole 350WP Fungicide contains 350g/kg of the active ingredient Etridiazole and is registered for the control of Pythium in a range of turf growing situations. Terrazole 350WP can provide effective curative control for Pythium disease infection. It can also provide a useful rotational option for preventative control within the soil environment in key months of activity.	10-25kg/ha (100-250g/100m ²)	14	Systemic (upwards)	Wettable Powder		●			