

Pythium Blight

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Pythium blight attacks all cool season grasses, but outbreaks are especially damaging to creeping bentgrass, annual bluegrass and perennial ryegrass. Pythium development may occur on Kentucky bluegrass and tall fescue, but disease severity is often limited and damage is manageable among turfgrass diseases, Pythium blight receives considerable attention because it spreads very quickly, affects leaves and crowns and kills plants resulting in extensive loss of turf stand.

Pythium blight occurs during the most uncomfortable days of summer, when dew periods are long (greater than 14 hours) and evening temperatures average 68° F or higher. Outbreaks often are first observed in low areas or swales, where more soil moisture is maintained and dew begins to form early in the evening and remains through the morning. Late afternoon rain showers during these hot, humid periods further favor disease development and may be responsible for rapid spread of the pathogen. Turf with lush growth and excessive nitrogen fertility is especially vulnerable to infection.

The hot, humid weather should signal an alert for Pythium blight outbreaks. Initial symptoms include small circular paths of collapsed, water-soaked leaves and stems on close mown turf (Figure 1). The cottony white mycelium may be associated with affected plants if observed

Figure 1



early in the morning (Figure 2). If disease-favorable conditions persist, and no efforts are made to interfere with disease progress, large areas of turf may be killed within a matter of days. (Figure 3).

The Pythium fungus over winters in soil and plant debris. Spread is associated with water movement. Surface water can transport spores as run-off drains through



Figure 2

areas of symptomatic turf. Also, the fungus is readily spread by equipment after affected areas are mowed while they are still wet.

Disease Control

Varieties of creeping bentgrass and perennial ryegrass appear to be equally susceptible to Pythium blight infection. Other species are somewhat less susceptible but varietal differences within species have not been identified, and they may not be suitable replacements for susceptible species.

Modifying the environment may contribute to a reduction in the severity of Pythium blight. Water management and proper drainage to avoid water-logged root zones during summer are especially important. Selective pruning of trees and shrubs and use of fans will help circulate air and dry turfgrass surfaces, effectively limiting the duration of the dew period. Avoiding conditions that approach excessive nitrogen fertility during mid-summer will reduce vulnerability to Pythium outbreaks. Because of the survival and spread characteristics of the pathogen, Pythium outbreaks normally occur in the same "problem" areas each year as hot and humid weather conditions prevail. Mowing in those areas should be delayed until surfaces are dry, and precautionary spot treatment with fungicides is advisable.

Fungicides for Disease Control

Because of the speed of disease

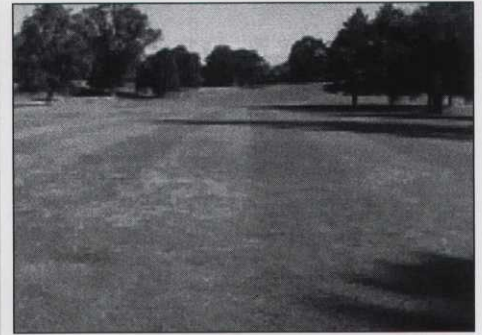


Figure 3

establishment and spread, and the consequences of Pythium infection (turf death), fungicides represent essential tools for Pythium blight control. Golf course superintendents who have experienced the effects of Pythium blight epidemics have learned to apply fungicide with the arrival of hot, humid weather. Depending on the history of the disease on certain golf courses, they may spray fairways as well as greens and tees, or may spot-spray areas that seem particularly vulnerable to Pythium blight. If hot, humid weather persists, then repeated applications may be warranted.

Accurate identification and confirmation of Pythium blight is important because the most effective fungicides may not be effective against any other disease (Table 1). therefore, distinguishing between Pythium blight and other diseases that may occur during the heat of the summer (brown patch, gray leaf spot, summer patch and dollar spot) is especially important.

Table 1. Fungicides used for Pythium blight control and an assessment of their relative efficacy.

Fungicide	Product Name	Topical Activity	Relative Efficacy
fosetyl aluminum	Aliette Signature® systemic		+++
mefenoxam	Subdue Maxx® systemic		+++
propamocarb	Banol® systemic		+++
azoxystrobin	Heritage® systemic		++
cholothalonil	Daconil® contact		+
mancozeb	Fore® contact		+

+++ best chance of satisfactory control if proper rates are used prior to severe outbreaks

++ effective is used strictly as a preventative

+ some efficacy, but used primarily as a tank mix with other fungicides