

Pythium Blight on Overseeded Turfgrass ¹

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Pythium blight or cottony blight rapidly kills cool-season turfgrasses overseeded as winter cover of warm-season species. The disease can occur on bermudagrass in the summer, but disease severity on this warm-season species often is limited when compared to the damage caused to cool-season turfgrass. *Pythium aphanidermatum* as well as other species, such as *P. torulosum*, have been associated with Pythium blight of overseeded turfgrasses in Florida.

Disease Symptoms and Occurrence

Weather significantly influences disease outbreaks and severity. Colonization of turf by *Pythium* is favored by wet periods and high temperatures. The pathogen can kill seedlings as well as an established turfgrass. Temperatures around 90°F are ideal for disease development. The pathogen causes little damage below 68°F. In addition to high temperatures, extended periods of wet, foggy, or rainy conditions with high humidity are required for disease development. Frequent irrigation needed to establish an overseed can favor disease development during periods of high temperatures. Symptoms are often first observed in

low areas where surface water runs, pools, and drains. Severe disease outbreaks commonly occur on turfgrass sites that are over-irrigated or poorly drained.

Pythium blight can quickly spread to kill large areas of turfgrass. When conditions have been favorable for disease spread, distinct and well-defined areas of turfgrass may first appear watersoaked, dark, and wilted (Figure 1). As disease progresses, the turf will collapse and appear brown and matted, sometimes with a bronze or red tinge to the border of the affected area (Figure 2). Extended periods of high humidity or leaf wetness may result in a white cottony growth of aerial mycelium on symptomatic turf (Figure 3). Initial symptoms can appear to have spread along paths of mechanical movement of diseased tissue, such as mowing patterns, and along paths of surface water drainage. Turfgrass is killed in a radial pattern outward from the initial disease outbreak as long as conditions are favorable for disease spread and no fungicide is applied.

Submission of a sample to a diagnostic clinic to confirm Pythium blight is recommended, if the turf

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Figure 1. The initial symptoms of Pythium blight on a ryegrass overseed of a bermudagrass athletic field. The first symptoms often include turfgrass with a wilted, greasy, or gray appearance. Credits: Gail Wisler and Carol Stiles



Figure 2. Pythium blight can rapidly progress into well-defined areas of blighted and matted turfgrass given favorable environmental conditions. Credits: Gail Wisler and Carol Stiles

manager or homeowner is not familiar with this disease; accurate diagnosis can help reduce the

amount of fungicide use and prevent the use of fungicides that are not effective against the particular disease. Disease diagnosis is available for a minimal fee from the Florida Extension Plant Disease Clinic.



Figure 3. White, airy, cottony growth of the Pythium pathogen on the expanding edge of a diseased area of overseed was observed after an extended period of high relative humidity. Credits: Lawrence Datnoff

Disease Management

All cool-season species commonly used to overseed turfgrass in Florida are susceptible to Pythium blight. Though bermudagrass cultivars likely differ in susceptibility, no significant differences have been identified. Horticultural practices can influence Pythium blight, but even ideal practices will not prevent disease occurrence in all cases, particularly if environmental conditions become highly favorable.

Irrigation practices should be employed that do not extend periods of leaf wetness and that do not waterlog soils, especially in low areas. Improving air circulation around problematic turfgrass areas by trimming surrounding foliage or using fans on golf course greens may help hasten drying of the area and lessen the likelihood of disease outbreak. Excessive applications of available nitrogen should be avoided during and directly prior to disease-favorable conditions because new lush turfgrass growth seems to be more susceptible to disease damage. The disease can be spread by mechanical transmission of the pathogen, so traffic across affected areas, including mowing, should be minimized during periods of pathogen activity.

Prompt and accurate diagnosis of Pythium blight is of utmost importance if fungicide applications are to effectively control disease spread. Products that control Pythium diseases (Table 1) may not be effective against other common diseases and vice versa. Once symptoms are visible, recovery of affected turfgrass is not possible, and the area may have to be re-seeded. Applications of the most effective fungicide products can protect healthy turf, thereby slowing or stopping disease spread from an affected area.

When temperatures hover above 80°F during extended moist periods such as frequent irrigation associated with overseed establishment, Pythium outbreaks are likely and preventative fungicide applications are warranted. When applied prior to seeding, fungicides provide relatively poor control. However, an application at the time of seeding, seedling emergence, and one additional application 14 days later generally provide acceptable disease control when establishing an overseed. After establishment, preventative applications often are applied only to problematic areas but sometimes to entire high-value turfgrass plantings such as athletic fields and golf course greens, tees, and fairways. Continued applications according to label directions may be needed as long as disease-favorable conditions persist. Populations of *Pythium* resistant to some of the fungicides listed in Table 1 have been reported in some areas. Products with different active ingredients should be rotated in a spray schedule to lessen the likelihood of fungicide-resistant populations developing. Product labels should be consulted for spray intervals and resistance management information.

Homeowner Control Options

Good horticultural practices outlined above can reduce the likelihood of Pythium blight on overseeded home lawns. If the disease becomes a persistent problem that requires further attention, it is recommended that the homeowner seek the services of a professional lawn care company, since some of the fungicides listed in Table 1 cannot be applied without an applicator license or are not labeled for use in residential lawns. Some homeowners may have the equipment and knowledge required to correctly

make a fungicide application, including all safety equipment. If such homeowners understand the risks to both themselves and the environment, fungicide products are available through garden centers and internet catalogs. Some of the fungicides listed in Table 1 are marketed to homeowners. For example, Monterey Aliette contains the fungicide aluminum tris and is available through Monterey Lawn and Garden Products (<http://www.montereylawngarden.com>). Because the homeowner pesticide market and product availability can change, consult your local county extension agent or university specialist for up-to-date product recommendations.

Any person who applies pesticides should always read, understand, and follow all label instructions prior to use. Specific products are listed for example only. Neither inclusion of products nor omission of similar alternative products in this publication is meant to imply any endorsement or criticism.

Related Resources

Managing Pythium Blight in Overseeded Turf.
<http://edis.ifas.ufl.edu/PP115>

University of Florida Extension Plant Disease Clinic.
<http://plantpath.ifas.ufl.edu/pdc/Default.htm>

University of Florida Pest Control Guide for Turfgrass Managers, updated yearly.
<http://turf.ufl.edu>

Turfgrass Disease Management.
<http://edis.ifas.ufl.edu/LH040>

Florida Cooperative Extension's Electronic Data Information Source (EDIS)
<http://edis.ifas.ufl.edu/>

Collecting and Submitting Turf Samples for Disease Diagnosis <http://edis.ifas.ufl.edu/LH041>

Table 1. Fungicides for control of Pythium blight.

Fungicide active ingredient	Product	Activity	Relative efficacy ¹	
			Preventative ²	Curative ²
aluminum tris	Signature	systemic	***	**
mefenoxam ³	Subdue Maxx	local systemic	***	**
azoxystrobin ³	Heritage	local systemic	**	***
propamocarb	Banol	local systemic	**	*
etrizazole	Terrazole	contact	*	*
chloroneb	Terraneb	contact	*	*
mancozeb	Fore	contact	*	*

¹*** provides greatest efficacy under disease-favorable conditions
 ** good management tool under moderate to low disease pressure
 * provides some control, best used in rotation or tank mix with other chemistries
² Preventative- applied before symptoms; Curative- applied after symptoms apparent
³ Risk of resistance in pathogen populations is high. Resistance management, including fungicide rotation, is required for these fungicides.