

**DISEASE CONTROL****WARM-SEASON**

by Don Blasingame, Mississippi St. Univ.

**Fungicide Directory**

Common Name	Some Trade Names**	Brown Patch	Dollar Spot	Gray Leaf Spot	Melting Out	Pythium Blight	Ruists	Spring Dead Spot
Anilazine	Dyrene, ProTurf fungicide III		•		•		•	
Benomyl	Benlate, Tersan 1991	•	•					•*
Chloroneb	Terraneb SP, ProTurf Fungicide II					•		
Chlorothalonil	Daconil 2787 ProTurf 101V	•	•	•	•		•	
Ethazole	Koban 30, Terrazole					•		
Fenarimol	Rubigan	•	•					•
Iprodione	Chipco 26019 ProTurf, Fungicide VI	•	•		•			
Mancozeb	Fore, Tersan LSR Many Others	•			•		•	
Metalaxyl	Subdue					•		
PCNB (quintozene)	Terraclor Turfcide	•	•		•		•	
Propamocarb	Banol					•		
Propiconazole	Banner	•	•				•	•*
Thiophanate-ethyl	Cleary 3336	•	•		•			
Thiophanate-methyl	Fungo 50, Proturf Systemic Fungicide	•	•					
Thiophanate-methyl + Mancozeb	Duosan	•	•		•		•	
Thiram	Thiram, Tersan 75	•	•					
Triadimefon	Bayleton, ProTurf Fungicide 7	•	•				•	
Vinclozolin	Vorlan		•		•			

\* Label approved only in selected states. \*\* Combination of fungicide + fertilizer are not included. No endorsement of named products by author is intended, nor is criticism implied for products not mentioned.

## COOL-SEASON

by Bill Shane, Ohio State Univ.

Cool-Season Turf Diseases,  
Turf Disease and Controls

DISEASE	SEASON AND/OR SUSCEPTIBLE TURFGRASS <sup>2</sup>	CULTURAL	FUNGICIDE/NEMATOCIDE ACTIVE INGREDIENT <sup>4</sup>
Algae	All turfgrasses	Reduce shade. Avoid excessive fertilization. Improve soil drainage.	Mancozeb
Anthraxnose ( <i>Colletotrichum graminicola</i> )	July-August; ANNUAL BLUEGRASS, BENTGRASS, Fine Fescue	Fertilize and water to maintain vigor. Syringing may help to prevent stress.	Benomyl <sup>1</sup> , Triadimefon Thiophanate-Methyl <sup>3</sup> Propiconizol, Fenarimol, Chlorothalonil
Brown Patch	See Rhizoctonia blight		
Dollar Spot ( <i>Lanzia</i> and <i>Moellerodiscus</i> spp., formerly <i>Sclerotinia</i> <i>homeocarpa</i> )	Late June-Oct. BENTGRASSES BLUEGRASSES Fescues Ryegrasses	Avoid nitrogen deficiency. Remove dew from greens by mowing, dragging with a hose or pole. Choose more resistant grass varieties.	Chlorothalonil, Cadmium <sup>3</sup> , Benomyl <sup>1</sup> , Anilazine <sup>3</sup> , Fenarimol, Iprodione <sup>3</sup> , Propiconizol, Thiophanate-ethyl <sup>3</sup> , Triadimefon, Vinclozolin <sup>3</sup>
Fairy Rings (Basidiomycete soil fungi)	April-October All turfgrasses	Remove infested sod and soil, replace with clean soil and reseed or sod. Improve water penetration. Increase N fertilization.	Methyl bromide or Formaldehyde fumigation will eradicate fungus but will also kill turf
Fusarium Blight <sup>5</sup> ( <i>Fusarium poae</i> , <i>F. vulvorum</i> , <i>F. crookwellense</i> )	July-August Bluegrasses Bentgrasses Fescues	Reduce heat stress during dry periods by light, frequent watering. Do not cut Kentucky bluegrass or fescues under 2 inches. Reduce excessive thatch (over 3/8 inch).	Triadimefon, Fenarimol Benomyl <sup>1</sup> , Iprodione, Thiophanate-methyl <sup>3</sup> , Thiophanate-ethyl <sup>3</sup>
Fusarium Patch (Pink Snow Mold) ( <i>Fusarium nivale</i> )	Nov.-April Bluegrasses Bentgrasses Fescues Ryegrasses	Avoid late fall fertilizing. Rake leaves and cut short. Control drifting snow.	Triadimefon, Benomyl <sup>1</sup> , Fenarimol, Iprodione <sup>3</sup> , Mancozeb, Mercury chlorides, Pentachloronitrobenzene, Thiram, Thiophanate-methyl <sup>3</sup> , Vinclozolin
Grey Snow Mold	see Typhula blight		
Leafspot/Blight /Melting out ( <i>Drechslera</i> & <i>Bipolaris</i> ssp.)	Leafspot: Spring & fall; Blight & Melting out: June-Aug. KENTUCKY BLUEGRASS BENTGRASSES FINE FESCUE, ryegrasses, tall fescue	Remove clippings. Raise cutting height. Avoid excessive nitrogen. Avoid light, frequent watering.	Cycloheximide, Iprodione, Chlorothalonil, Mameb, Nancozeb, Vinclozolin, Pentachloronitrobenzene
Nematodes	All turfgrasses		Fenamiphos, Ethoprop

1 Before using any pesticide, read and follow label instructions.

2 Grass types listed in capital letters have been observed to be especially susceptible to the pathogen.

3 Continued or sole use of these materials may favor build-up or resistant fungal population.

4 Products containing these active ingredients are listed in the following table. Read the product label to see if it is labeled for the disease of concern. Follow all label instructions.

5 Necrotic ring spot and summer patch are known to cause symptoms once attributed solely to *Fusarium* blight.

6 Pink patch disease was recently found to be a disease distinct from red thread. Thus, there are few fungicides specifically registered for control of this disease at this time.

7 Another fungus, *Rhizoctonia zeae*, is also capable of causing brown patch-like symptoms on bluegrass and bentgrass. Benzimidazole type (Tersan 1991, Benomyl, Fungo 50, Cleary 3336) are not effective against this pathogen.

continued . . .

Cool-Season Turf Diseases,  
Turf Disease and Controls (cont.)

DISEASE	SEASON AND/OR SUSCEPTIBLE TURFGRASS <sup>2</sup>	CULTURAL	FUNGICIDE/NEMATICIDE ACTIVE INGREDIENT <sup>4</sup>
<b>Necrotic Ring Spot<sup>5</sup></b> ( <i>Leptosphaeria korrae</i> )	Spring & fall KENTUCKY BLUEGRASS, annual bluegrass ryegrasses	Avoid low mowing heights (below 2 inches). Reduce excessive thatch (over 3/8 inch). Use Kentucky bluegrass and perennial ryegrass mixtures.	Fenarimol, Propiconazole
<b>Pink Patch<sup>6</sup></b> ( <i>Limonomyces roseipellis</i> )	Spring & fall bentgrass, FINE FESCUE, PERENNIAL RYEGRASS	Follow balanced fertilization program.	Cadmium, Mancozeb
<b>Pink Snow Mold</b>	see Fusarium patch		
<b>Powdery Mildew</b> ( <i>Erysiphe graminis</i> )	July-Oct. KENTUCKY BLUEGRASS, fine fescue	Reduce shade. Increase air circulation by removing surrounding vegetation.	Triadimefon, Fenarimol, Propiconazole
<b>Pythium Blight</b> ( <i>Pythium aphanidermatum</i> , <i>P. graminicola</i> )	June-Sept. BENTGRASSES, ANNUAL BLUEGRASS, PERENNIAL RYEGRASS, Kentucky bluegrass	Improve soil drainage. Increase air circulation by removing surrounding vegetation. Avoid mowing wet grass. Avoid excess watering.	Chloroneb, Etridiazole, Propamocarb, Metalaxyl, Fosetyl-AI, Mancozeb
<b>Red Leaf Spot</b> ( <i>Drechslera erythrospila</i> )	June-Sept. BENTGRASSES	Remove clippings. Fertilize to maintain vigor.	Iprodione, Anilazine
<b>Red Thread</b> ( <i>Laetisaria luciformis</i> )	All seasons PERENNIAL RYEGRASS, FINE FESCUE, bentgrass, annual bluegrass, Kentucky bluegrass	Follow balanced fertilization program.	Vinclozolin, Cadmium, Chlorothalonil, Thiophanate-ethyl, Thiophanate-methyl, Mancozeb, Triadimefon, Propiconazole
<b>Rhizoctonia Blight (Brown patch)</b> ( <i>Rhizoctonia solani</i> - <i>Thanatephorus cucumeris</i> <sup>7</sup> )	July-August BENTGRASS, ANNUAL BLUEGRASS, TALL FESCUE, Kentucky bluegrass, fine fescue	Avoid excess nitrogen fertilization. Increase air circulation by removing surrounding vegetation. Avoid excessive watering.	Anilazine, Chlorothalonil, Mancozeb, Benomyl <sup>8</sup> , Maneb, Propiconazole, Pentachloronitrobenzene, Triadimefon, Thiophanate-methyl <sup>9</sup> , Thiophanate-ethyl <sup>9</sup> , Iprodione
<b>Rust (Puccinia spp.)</b>	August-Oct. PERENNIAL RYEGRASS, KENTUCKY BLUEGRASS	Avoid nitrogen deficiency. Use resistant varieties of Kentucky bluegrass and perennial ryegrass.	Mancozeb, Propiconazole, Cycloheximide, Chlorothalonil, Triadimefon, Fenarimol
<b>Slime Molds</b> ( <i>Myxomycete</i> <sup>9</sup> )	August-Sept. All Turfgrasses	Removing mechanically by mowing or raking.	Zineb, Mancozeb
<b>Snow Mold</b>	see Fusarium Patch and Typhula Blight		

1 Before using any pesticide, read and follow label instructions.

2 Grass types listed in capital letters have been observed to be especially susceptible to the pathogen.

3 Continued or sole use of these materials may favor build-up or resistant fungal population.

4 Products containing these active ingredients are listed in the following table. Read the product label to see if it is labeled for the disease of concern. Follow all label instructions.

5 Necrotic ring spot and summer patch are known to cause symptoms once attributed solely to Fusarium blight.

6 Pink patch disease was recently found to be a disease distinct from red thread. Thus, there are few fungicides specifically registered for control of this disease at this time.

7 Another fungus, *Rhizoctonia zeae*, is also capable of causing brown patch-like symptoms on bluegrass and bentgrass. Benzimidazole type (Tersan 1991, Benomyl, Fungo 50, Cleary 3336) are not effective against this pathogen.

continued ...



### Cool-Season Turf Diseases, Turf Disease and Controls (cont.)

DISEASE	SEASON AND/OR SUSCEPTIBLE TURFGRASS <sup>2</sup>	CULTURAL	FUNGICIDE/NEMATOCIDE ACTIVE INGREDIENT <sup>4</sup>
Strip Smut ( <i>Ustilago striiformis</i> )	Spring & fall KENTUCKY BLUEGRASS, Bentgrasses	Avoid drought stress. Avoid excess nitrogen.	Propiconazole, Triadimefon, Benomyl, Thiophanate-ethyl Notes: Apply extra water for crown penetration. Apply in late fall or early spring
Summer Patch <sup>5</sup> ( <i>Magnaporthe</i> spp., formerly <i>Phialophora graminicola</i> )	June-August ANNUAL BLUEGRASS, <sup>6</sup> KENTUCKY BLUEGRASS	Avoid low mowing height. Reduce excessive thatch. Light, frequent watering during dry periods to reduce heat stress. Use slow-release nitrogen to avoid nutrient depletion. Use Kentucky bluegrass and perennial ryegrass mix.	Fenarimol, Triadimefon. Materials must be applied preventatively.
Take-all Patch ( <i>Ophiobolus patchi</i> ) ( <i>Gaeumannomyces graminis</i> var <i>avenae</i> )	Spring & fall BENTGRASS	Avoid topdressing soil with pH greater than 6.0 Avoid use of lime, especially small particle type, where take-all is a problem. Use ammonium chloride, or second best, ammonium sulfate fertilizers.	PMA (not labelled for this disease, but may be effective)
Typhula Blight (Grey Snow Mold) ( <i>Typhula</i> spp.)	Nov.-April fine fescue, BENTGRASS, ANNUAL BLUEGRASS, Kentucky bluegrass, tall fescue, perennial ryegrass	Avoid heavy fall nitrogen promoting late lush growth. Rake leaves and cut short. Control drifting snow.	Triadimefon, Cadmium, Chloronob, Anilazine, Pentachloronitrobenzene, Mercury Chlorides, Thiram
Yellow Patch ( <i>Rhizoctonia cerealis</i> )	Spring & fall Bentgrasses Bluegrasses	Reduce excessive thatch. Avoid excessive watering	None
Yellow Tuft (Downy mildew) ( <i>Sclerophthora</i> spp.)	Spring & fall Bentgrass		Metalaxyl

<sup>1</sup> Before using any pesticide, read and follow label instructions.

<sup>2</sup> Grass types listed in capital letters have been observed to be especially susceptible to the pathogen.

<sup>3</sup> Continued or sole use of these materials may favor build-up or resistant fungal population.

<sup>4</sup> Products containing these active ingredients are listed in the following table. Read the product label to see if it is labeled for the disease of concern. Follow all label instructions.

<sup>5</sup> Necrotic ring spot and summer patch are known to cause symptoms once attributed solely to *Fusarium* blight.

<sup>6</sup> Pink patch disease was recently found to be a disease distinct from red thread. Thus, there are few fungicides specifically registered for control of this disease at this time.

<sup>7</sup> Another fungus, *Rhizoctonia zeae*, is also capable of causing brown patch-like symptoms on bluegrass and bentgrass. Benzimidazole type (Tersan 1991, Benomyl, Fungo 50 Clear 3336) are not effective against this pathogen.