

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
<p><b>Algae</b> (various species; primarily blue-green algae or cyanobacteria)</p> <p>All grasses</p> <p>Most prevalent on putting greens &amp; other turf mowed excessively low.</p>	<p>Turf areas in partially shaded, damp locations become weak and begin to thin. Traffic and close-mowing enhance potential for algae development. Long-term overcast, rainy weather periods encourage algae on putting greens. These algae are commonly green or brown in color and can be sheet-like, leaf-like, or cushion-like in appearance. Due to their high water content, algae are often quite slippery. Algae growth may become so prolific that they cover turf plants and inhibit water penetration. Improve air circulation and light exposure. Improve drainage and reduce irrigation frequency and amount. Reduce freely available nitrogen at site. On putting greens, verticut lightly, aerify, and/or topdress to disrupt and dry algal mats. Best curative results are with 5 gal water per 1,000 sq.ft. applied for 3 consecutive weeks when air temps. are at least 85 F.</p>	Daconil Action	chlorothalonil + acylbenzolar-S-methyl 6.112 F	2-5.4	7-14
		Daconil Weather Stik	chlorothalonil 6F	2-3.6	7-14 preventive
		Daconil Zn	chlorothalonil 4.16 F	4-5.5	14 curative
		Daconil Ultrex, Chlorothalonil DF	chlorothalonil 82.5% WDG, DF	3-6	7-14 preventive
		Renown	chlorothalonil + azoxystrobin 5.16SC	6-11	7-14 curative
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	1.8-3.2 3.6-5	7-14 preventive 14 curative
		Disarm C	chlorothalonil + fluoxastrobin 4.25 SC	2.5-4.5	10-14
		Reserve	chlorothalonil + triticonazole 4.8SC	2-5.76	7-14
		Secure	fluazinam 4.17 SC	3-5.4	7-14
		Xzemplar	fluxapyroxad 2.47SC	3.2-5.4	14-28
		Fore, Dithane, Pentathlon, others	mancozeb 80WP	0.5	14
		Protect DF, others	mancozeb 75DF	0.21-0.26	14-28
		Fore F, others	mancozeb 4LF	6.0	7-14
		Junction	mancozeb + copper hydroxide 60DF	6.0	7
		Kocide	copper hydroxide 53.8%	9.6	7-14
Maneb plus Zinc	maneb (37%)+ zinc F	4-8	7-14		
			16 oz in 5 gal water	variable	
			9.6	7-14	
		<p><i>note:</i> chlorothalonil formulations have maximum use rates in effect that depends on site - see current labels for details.  <i>note:</i> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.  <i>note:</i> fungicides are most effective when used preventative. Fungicides containing copper hydroxide may be phytotoxic; read label carefully and use precautions.</p>			
<b>Anthracoese leaf blight</b> and	The causal fungus can infect leaves, sheaths, and tillers.	Heritage	azoxystrobin 50WDG	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8TL	1-2	14-28

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<b>Anthracnose basal rot</b> ( <i>Colletotrichum cereale</i> )	In creeping bentgrass and <i>Poa annua</i> , stolons and crowns also may be rotted (anthracnose basal rot). Leaf infection appears as reddish-brown to brown lesions that are often surrounded by a yellow halo. Lesion size may span the blade width and often one lesion will cause complete yellowing of a blade. Tiller infection results in stem girdling and the subsequent appearance of small, yellow patches of turf. The causal fungus can sometimes be observed with a hand lens. It will appear as dark, cushion-like reproductive structures (acervuli) with black spines (setae) extending from the margin of the cushion. Plants with anthracnose basal rot may have deep-seated infections that are not readily diagnosed with only a hand lens.	Heritage G	azoxystrobin 0.31G	2-4 lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.3-0.725	14
<b>Anthracnose leaf blight and Anthracnose basal rot</b> ( <i>Colletotrichum cereale</i> ) Creeping bentgrass and Annual Bluegrass primarily	Avoid stressed turf caused by consistent low mowing and rolling of greens, other pests, fertility imbalances, or moisture extremes. Thatch removal will be helpful. In bentgrass greens, manage localized dry spots to prevent anthracnose basal rot from developing.	Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-2.5 lb	14
		Daconil Action	chlorothalonil + acylbenzolar-S-methyl 6.112 F	3-5.4	7-14
		Daconil Zn	chlorothalonil 4.16F	4.3-5.1	7-14 pre-disease
				>5.1-7.9	14 post-disease
		Daconil WeatherStik, Chlorothalonil 720 SFT, others	chlorothalonil 6 F	3-3.6	7-14 pre-disease
				>3.6-5.5	14 pre-disease
		Daconil Ultrex, Chlorothalonil DF	chlorothalonil 82.5% WDG, DF	2.7-3.2	7-14 pre-disease
				>3.2-5	14 post-disease
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	7-21
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-6	14-28
				chlorothalonil + potassium phosphite 5.27 SC	8
		Headway	chlorothalonil + propiconazole 4.3 SC	4.5-8.5	14
		Instrata	chlorothalonil + propiconazole + fludioxonil 3.6 SC	2.75-6	14-28
		Enclave	chlorothalonil + iprodione + thiophanate methyl + tebuconazole 5.3 SC	3-6	14-21
		Consyst	chlorothalonil + thiophanate methyl 67WDG	2-8	7-14
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3.72-5.76	7-14
		Rubigan AS	fenarimol AS	1.75-3.5	30
		Secure	fluazinam 4.17 SC	0.5	14
		Medallion	fludioxonil 50WP	0.25-0.5	14
Medallion	fludioxonil 1.04 SC	1-2	14		
Disarm	fluoxastrobin 4SC	0.18-0.36	14-28		
Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28		
Systar	flutolanil + thiophanate methyl 80WDG	2-3	14-30		
Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28		
26/36	iprodione + thiophanate methyl 3.8F	2-4	14-21		
Interface	iprodione + trifloxystrobin 2.27 SC	5-7	14-21		
Duosan	mancozeb + thiophanate methyl	3	5-14		
Tourney	metconazole 50WDG	0.28-0.37	14-21		
Eagle	myclobutanil 20 EW	1.2	14-21		
Affirm	polyoxin 11.3% WDG	0.88	7-14		
Endorse	polyoxin 2.5WP	4	7-14		
Banner Maxx, Propiconazole 14.3, others	propiconazole 1.3 ME	1-2	14-28		

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		Insignia	pyraclostrobin 20 WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28G	0.55-1.11	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Torque	tebuconazole 3.6 SC	0.6	14-28
		Mirage Stressgard	tebuconazole 2 SC	1-2	14-28
		3336	thiophanate methyl 50WSB	1-2	10-14
		3336F	thiophanate methyl 46%F	1-2	10-14
		3336	thiophanate-methyl 41%F	2-8 fl	7-14
		3336	thiophanate methyl 50WP	2-8	7-14
		Bayleton	triadimefon 50 WSP, 41.7 Flo	1.0	30
		Compass	trifloxystrobin 50WDG	0.15-0.25	14-21
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28
		Trinity	triticonazole 1.7SC	0.5-1	14-28
		Triton	triticonazole 70WDG	0.15-0.225	14-28
		Triton Flo	triticonazole 3F	0.41-1.1	14-28
<b>Brown Ring Patch</b> ( <i>Rhizoctonia circinata</i> var. <i>circinata</i> )	Affecting <i>Poa annua</i> or <i>Poa trivialis</i> overseedings during late spring/ early fall mild weather conditions. Symptoms resemble Yellow Patch, but the causal agent is more closely related to <i>R. zea</i> and <i>R. oryzae</i> than to <i>R. cerealis</i> . Yellow patches or rings of affected turf occur and may be somewhat depressed at the margins. Infections occur on leaf sheaths in the crown region, with no leaf lesions.	Heritage	azoxystrobin 50% WG	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8TL	1-2	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.3-0.725	14-28
		Heritage G	azoxystrobin 0.31 G	2-4 lb	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	14-28
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-5.4	14-28
		Secure	fluazinam 4.17 SC	0.5	14
		Medallion	fludioxonil 50% WP	0.25-0.5	7-14
		Medallion	fludioxonil 1.04 SC	1-2	14
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Tourney	metconazole 50WDG	0.37	14-21
		Affirm	polyoxin 11.3% WDG	0.88 oz	7-14
		Endorse	polyoxin 2.5WP	4	7-14
		Insignia Intrinsic	pyraclostrobin 2.08SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WDG	1.11	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81 G	3.0 lb	28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	14-28
		Trinity	triticonazole 1.7SC	1-2	14-28
		Triton Flo	triticonazole 3F	0.5-1.1	14-28
		Xzemplar	fluxapyroxad 2.47 SC	0.26	14-28
		<b>Brown Patch, Rhizoctonia Blight</b>	Grass is killed in circular to irregular areas that may	Heritage	azoxystrobin 50% WG
Heritage TL	azoxystrobin 0.8 TL			1-2	14-28

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<b>Brown Patch, Rhizoctonia Blight</b> ( <i>Rhizoctonia solani</i> )	expand to several feet in diameter. In close-cut cool season grasses, a darkened "smoke ring" border may be apparent. Brown patch in cool season grasses occurs during humid weather at >75°F. High N, thatch buildup, and excessive moisture favor disease.  Maintain adequate fertility. Avoid excess fast-release nitrogen. Irrigate deeply. Reduce thatch  <i>note:</i> chlorothalonil formulations have new maximum use rates that depend on site - see new labels for details  <i>note:</i> Fungicides containing copper hydroxide may be phytotoxic; read label carefully & use precautions.	Briskway	azoxystrobin + difenoconazole 1.67 SC	0.3-0.725	14-28
		Heritage G	azoxystrobin 0.31G	2-4 lb	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Terraneb 65WP	chloroneb 65WP	3-4	7-10
		Terraneb SP	chloroneb 2.9F	5-7	7-10
		Daconil Action	chlorothalonil + acylbenzolar-S-methyl 6.112 F	2-5.4	7-14
		Daconil Weather Stik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	2-3.6	7-14 pre-disease
				4-5.5	14 post-disease
		Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil 4.17F	2.9-5.1	7-14 pre-disease
				5.8-7.9	14 post-disease
		Daconil Ultrex, Chlorothalonil DF	chlorothalonil 82.5% WG,DF	1.8-3.2	7-14 pre-disease
				3.6-5	14 post-disease
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
				chlorothalonil + fenarimol F	3-6
		Disarm C	chlorothalonil + fluoxastrobin 4.25 SC	1.5-5.9	14-28
		Vitalonil	chlorothalonil + potassium phosphite 5.27SC	5.75-8	7-14
		Concert	chlorothalonil + propiconazole 4.3SC	3-8.5	7-28
		Consyst	chlorothalonil + thiophanate methyl 67WDG	2-8	7-14
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3.72-5.76	7-14
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-5.4	21-28
		Enclave	chlorothalonil + iprodione + thiophanate methyl + tebuconazole 5.3 SC	3-6	14-21
		Rubigan AS	fenarimol 11.6% AS	1.5	7-14
		Secure	fluazinam 4.17 SC	0.5	14
		Medallion	fludioxonil 50% WP	0.25 -0.5	7-14
		Medallion	fludioxonil 1.04 SC	1-2	14
		Disarm	fluoxastrobin 4SC	0.09-0.36	14-28
		Disarm G	fluoxastrobin 0.25G	1.2-4.6lb	14-28
		Prostar	flutolanil 70% WP, WDG	1.5-3	14-21
		Systar	flutolanil + thiophanate methyl	2-3	14-21
		Xzemplar	fluxapyroxad 2.47 SC	0.21-0.26	14-21
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Chipco 26019	iprodione 50% WP	1.5-2	14-28
Chipco 26GT, Iprodione Pro, others	iprodione 2SC	3-4	14-28		
26/36	iprodione + thiophanate methyl 3.8F	2-4	14-21		
Interface	iprodione + trifloxystrobin 2.27 SC	2-6	14-28		
Fore, Dithane, Pentathlon, others	mancozeb 80% WP	4	7-14		
Protect DF, others	mancozeb 75% DF	4	7-14		
Junction	mancozeb + copper hydroxide 60DF	2-4	7		
Maneb plus Zinc	maneb (37%)+ zinc F	4.8	7-14		
Tourney	metconazole 50WDG	0.28-0.37	14-21		

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		Eagle, Myclobutanil 20EW	myclobutanil 20 EW	1.2	14
		Affirm	polyoxin 11.3%WDG	0.88	7-14
		Endorse	polyoxin 2.5WP	4	7-14
		Banner Maxx, Propiconazole 14.3, others	propiconazole 1.3ME	1-2	14-21
		Insignia	pyraclostrobin 20 WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28G	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	14-28
		3336	thiophanate methyl 50WSB	2	5-14
		3336F	thiophanate methyl 46%F	1-2	5-14
		3336	thiophanate methyl 50% WP	2-4	7-14
		3336F	thiophanate methyl 41%F	2-4	7-14
		Spotrete	thiram 4F	3.75-7.5	3-10
		Bayleton	triadimefon 50% WSP, 4.15F	0.5-1.0	15-30
		Compass	trifloxystrobin 50% WDG	0.1-0.25	14-21
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28
		Triton	triticonazole 70WDG	0.15-0.3	14-28
		Triton Flo	triticonazole 3F	0.41-1.1	14-28
		Trinity	triticonazole 1.7SC	0.75-2.0	14-28
		Curalan	vinclozolin 50 WG or DF	1.0	14-28

**note:** Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.

**Cercospora Leaf Spot** (*Cercospora fusimaculans*)

St. Augustinegrass

Brown to purple leaf spots in patches 2-3" in diameter. In high disease severity, entire leaves will yellow, wither and die. Warm, humid weather favors disease incidence. Confused with gray leaf spot. N may reduce disease. Water deeply only when needed in mornings. 'Bitter-blue' selections are more resistant.

None available. Fungicides used to control other leaf spot diseases will provide suppression.

**Copper Spot**

(*Gloeocercospora sorghi*)  
Creeping bentgrass

Small bronze patches about the size of dollar spot occur in humid but mild temperatures. A minor disease in SC, nevertheless it does occasionally occur

Manage moisture so that

Daconil Ultrex	chlorothalonil 82.5 WDG	3.2	7-10
Daconil Action	chlorothalonil + acylbenzolar-s-methyl 6.112 F	4-5.4	14
Chlorothalonil DF	chlorothalonil 82.5 DF	3.2	7-10
Daconil WeatherStik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	3.7-5	14
Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil + Zn 4.16F	4-5.5;6-8	14

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	leaf wetness periods are limited. Limit soluble N fertilization.	Renown	chlorothalonil + azoxystrobin 5.16SC	5.9	7-14
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	2.5	14
		Concert	chlorothalonil + propiconazole 4.3SC	5.5-8.5	14
		Consyst	chlorothalonil + thiophanate methyl 67WDG	3-8	14
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3-5.76	7-14
		Rubigan AS	fenarimol 1AS	0.75-1.5	14
		Systar	flutolanil + thiophanate methyl 80WDG	2-3	10-28
		26/36	iprodione + thiophanate methyl 3.8F	2-4	14-21
		Protect DF	mancozeb 75DF	4-8	14-21
		Fore, Dithane, others	mancozeb 80WP	4-8	10
		Fore F, others	mancozeb 4LF	7-10	7-14
		Junction	mancozeb + copper hydroxide 60DF	2-4	7-14
		Tourney	metconazole 50WDG	0.28-0.37	7-14
		Eagle	myclobutanil 20EW	1.2	14-21
		Torque	tebuconazole 3.6F	0.6	28
		3336, TM 4.5F, others	thiophanate methyl 50WP, 4F, 4.5F	2-4	14
		3336 plus	thiophanate methyl 2F	2-4	14
		TM 85WDG	thiophanate methyl 85WDG	0.67-1.3	14
		3336G	thiophanate methyl 2G	1.5-6 lb	14
		Spotrete	thiram 4F	3.75-7.5	14
	Bayleton	triadimefon 50WSP, 4.15 F	0.5-1	3-10	
<i>note:</i> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.					
<b>Curvularia Blight</b> ( <i>Curvularia</i> spp.)	Usually associated with stressed plants from heat, excess moisture, drought, compaction, or other causes. Alleviate stress conditions	3336F	thiophanate methyl 41%F	4-8	7-14
		3336 WP	thiophanate methyl 50WP	4-8	7-14
Bermudagrass		26/36	iprodione + trifloxystrobin 2.27 SC	5-7	14
<b>Dead Spot</b> ( <i>Ophiosphaerella agrostis</i> ) Creeping bentgrass, rarely Poa trivialis and bermudagrass greens	Small red or bronze spots develop during late spring or early fall that resemble ball marks. Spots die in the center and become tan, with black pepper-like pseudothecia fruiting bodies developing. May be mistaken for dollar spot initially. Generally a problem on young stands of bentgrass (1-4 yrs age). Fertilize with ammonium sulfate to suppress the disease.	Headway	azoxystrobin + propiconazole 1.4ME	1.5-3	14
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Emerald	boscalid 70WG	0.13-0.18	14-28
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3.72-5.76	7-14
		Medallion	fludioxonil 50% WP	0.3-0.5	14
		Medallion	fludioxonil 1.04 SC	1.15-2	14
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Insignia	pyraclostrobin 20 WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		3336 F, 3336 plus	thiophanate methyl 4F, 2F	4-6	14
		3336	thiophanate methyl 50WP	4-6	14
	3336G	thiophanate methyl 2G	6-9 lb	14	
<b>Dollar Spot</b>	On fine textured grasses,	Headway	azoxystrobin (5.73%) + propiconazole 1.4ME	0.75-3.0	7-28

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<i>(Sclerotinia homoeocarpa)</i>  bahiagrass bermudagrass centipedegrass creeping bentgrass ryegrass rough bluegrass St. Augustinegrass tall fescue zoysiagrasses	spots appear 1-2" in diameter. On tall or coarse grasses, patches may reach 5 or more inches in diameter. Often, straw-colored lesions move in from leaf margins or occur as distinct bands across the leaf. Most active during 60-80°F in spring and fall. Moisture from fog, dew, or irrigation initiates disease. Low soil moisture, thatch, low N and K favor disease. Avoid N deficiency. Reduce leaf wetness periods by altering irrigation timing. Avoid thatch buildup. Wipe heavy dew off in mornings. <b>note:</b> chlorothalonil formulations have maximum use rates in effect that depends on site .  <b>note:</b> Fungicides containing copper hydroxide may be phytotoxic; read label carefully and use precautions.	Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.3-0.725	14-21
		Emerald	boscalid 70WDG	0.13-0.18	14-28
		Daconil Action	chlorothalonil + acylbenzolar-s-methyl 6.112F	1-5.4	7-14
		Daconil WeatherStik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	1-2	7-10 pre-disease
				2-3.6	7-21 pre-disease
				4-5.5	14 post-disease
		Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil 4.16F	1.4-2.9	7-10 pre-disease
				2.9-5.1	7-21 pre-disease
				5.8-7.9	14 post-disease
		Chlorothalonil DF	chlorothalonil 82.5% DF	0.9-1.8	7-10 pre-disease
				1.8-3.2	7-21 pre-disease
				3.6-5	14 post-disease
		Daconil Ultrex	chlorothalonil 82.5 WDG	1.8-3.2	7-10
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	7-14
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-5.9	14-21
		Vitalonil	chlorothalonil + potassium phosphite 5.27 SC	2.8-5.75	7-10
		Concert	chlorothalonil + propiconazole 4.3SC	1.5-3	7-10 pre-disease
				3-5.5	14-21 pre-disease
				5.5-8.5	14-28 post-disease
		Consys	chlorothalonil + thiophanate methyl 67WDG	2-8	7-21
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	2-5.76	7-21
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-4.5	14-28
		Enclave	chlorothalonil + iprodione + thiophanate methyl + tebuconazole 5.3 SC	3-8	14-28
		Rubigan AS	fenarimol 1AS	0.75-1.5	10-28
		Secure	fluazinam 4.17 SC	0.5	14
		DisArm	fluoxastrobin 4SC	0.18-0.36	14-21
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-21
Systar	flutolanil + thiophanate methyl 80WDG	2-3	14-30		
Xzemplar	fluxapyroxad 2.47 SC	0.16-0.26	14-28		
Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28		
Chipco 26GT, Iprodione Pro, others	iprodione 2F, 2SC	2-4	14-28		
		1-4	14-21		
26/36	iprodione + thiophanate methyl 3.8F	1-4	14-21		
Interface	iprodione + trifloxystrobin 2.27 SC	2-6	14-28		
Protect DF	mancozeb 75DF	6-8	7-14		
Fore, Dithane, Pentathlon, others	mancozeb 80WP	6-8	7-14		
Fore Flo	mancozeb 4LF	10-14	7-14		
Junction	mancozeb + copper hydroxide 60DF	2-4	7-14		
Maneb plus Zinc	maneb (37%)+ zinc F	9.6-12.8	7-14		
Tourney	metconazole 50WDG	0.18-0.37	14-21		
Eagle	myclobutanil 20 EW	1.2	14-28		

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
		Banner Maxx	propiconazole 1.3ME	0.5-2	7-28
		Insignia	pyraclostrobin 20WDG	0.9	14 (suppression)
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28(suppression)
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.83-1.1	14-21
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	14-28
		3336 WP	thiophanate methyl 50WP	2-4	14
		3336 F, 3336 plus	thiophanate methyl 4F,2F	2-4	14-28
		TM 85WDG	thiophanate methyl 85WDG	0.67-1.3	14
		3336G	thiophanate methyl 2G	1.5-6 lb	14
		Spotrete	thiram 75WDG	2.5-5	7-10
		Bayleton	triadimefon 50WSP, 4.15F	0.25-1	14-30
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28
		Trinity	triticonazole 1.7SC	1-2	14-28
		Triton Flo	triticonazole 3F	0.28-1.1	14-28
		Triton	triticonazole 70WDG	0.15-0.3	14-28
		Curalan	vinclozolin 50WP or DF	1.0	21-28
<b>note:</b> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.					
<b>Fairy Ring</b> ( <i>Agrocybe</i> , <i>Chlorophyllum</i> , <i>Lycoperdon</i> , <i>Marasmius</i> , <i>Tricholoma</i> spp., + other mushroom fungi). All grasses Irregularly sized circular to semi-circular bands of lush green turf become apparent. Turf within circular area may decline, turn brown and thin. Toxins may be involved, but hydrophobic soil is a major problem. Mushrooms may be associated with the rings. Rings may persist for years. Difficult to control. Plugging or aerating to allow more water and fertilizer to reach the roots may help. Some surfactants have helped water penetration.		Heritage	azoxystrobin 50WDG	0.4	28
		Heritage TL	azoxystrobin 0.8 TL	2	28
		Heritage G	azoxystrobin 0.31G	2-4 lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Xzemplar	fluxapyroxad 2.47 SC	0.26	14-28
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	4.5-.5.9	21-28
		Disarm	fluoxastrobin 4SC	0.28-0.36	21-28
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	28
		Prostar	flutolanil 70WP, 70 WDG	2.2-4.5	21-30
		Systar	flutolanil + thiophanate methyl 80WDG	3-6.12	21-28
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.47	28
		Tourney	metconazole 50WDG	0.37	21
		Affirm	polyoxin 11.3% WDG	0.88	7
		Endorse	polyoxin 2.5WP	4	7
		Insignia	pyraclostrobin 20WDG	0.9	28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	1.1	28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
	Torque	tebuconazole 3.6 F	0.6	28	



Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
		Mirage Stressgard	tebuconazole 2 SC	1-2	28
		Bayleton	triadimefon 50DF,4.15F	1-2	14-21
		Tartan (2ee SC)	triadimefon + trifloxystrobin	2.0	28
<b>Microdochium Patch and Pink Snow Mold</b> ( <i>Microdochium nivale</i> )  Cool season grasses, including bentgrass bluegrasses, ryegrasses, and fescues; also non-overseeded bermudagrass putting greens and zoysia greens	Fusarium Patch: Begins in late fall and early winter in wet, humid weather as small, water-soaked spots of 2 inches up to 8 inches in diameter. Patches may appear wet or slimy. Gray to pinkish colored mycelium may be noticeable in patches. Snow is not required for development of Fusarium Patch. The disease may kill grasses in these patches; frequently mis-diagnosed as cool weather Pythium. Pink Snow Mold: Same causal agent as Fusarium Patch, but the disease occurs under snow cover. Preventive fungicide applications must be made prior to persistent snow cover. Avoid excess nitrogen fertilization, irrigate infrequently but thoroughly, avoiding light frequent irrigations. Protect newly seeded areas that are highly susceptible. Reduce shade and increase air movement around greens. <i>note:</i> chlorothalonil formulations have new maximum use rates in effect that depends on site.  <i>note:</i> Fungicides containing copper hydroxide may be phytotoxic; read label carefully and use precautions.	Heritage	azoxystrobin 50WDG	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8 TL	1-2	14-28
		Heritage G	azoxystrobin 0.31G	2-4 lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	10-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Renown	chlorothalonil + azoxystrobin 5.17SC	2.5-4.5	14-21
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-5.9	28
		Concert	chlorothalonil + propiconazole 4.3SC	3-8.5	7-21
		Instrata	chlorothalonil + propiconazole + fludioxonil 3.6SC	2.75-6	10-14
		Consys	chlorothalonil + thiophanate methyl 67WDG	6-8	Single application
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3.72-5.76	14
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-5.4	10-28
		Enclave	chlorothalonil + iprodione + thiophanate methyl +tebuconazole 5.3 SC	7-8	28
		Daconil Action	chlorothalonil + acylbenzolar-s-methyl 6.112F	5.4	21-28
		Daconil WeatherStik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	2.12-5.5	7-14
		Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil 4.17F	3-7.9	7-14
		Daconil Ultrex	chlorothalonil 82.5% WDG	1.8-5	7-14
		Chlorothalonil DF	chlorothalonil 82.5 DF	1.8-3.2	7-10
		Rubigan AS	fenarimol 1AS	4-8	1-2 applications
		Secure	fluzazinam 4.17 SC	0.5	14
		Medallion	fludioxonil 50% WP	0.25-0.5	14
		Medallion	fludioxonil 1.04 SC	1-2	14
		Disarm	fluoxastrobin 4SC	0.18-0.36	14-28
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28
		Systar	flutolanil + thiophanate methyl 80WDG	2-3	14-21
		Xzemplar	fluxapyroxad 2.47 SC	0.26	14-28
Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28		
Chipco 26GT, iprodione pro, Ipro 2SE, others	iprodione 2F, 2SC	4-8	1-2 applications		
26/36	iprodione + thiophanate methyl 3.8F	1-4	14-21		
Interface	iprodione + trifloxystrobin 2.27 SC	5-7	14-21		
Protect DF	mancozeb 75DF	6-8	2-6 wk		
Fore, Dithane, Pentathlon, others	mancozeb 80WP	6-8	14-42		
Fore Flo	mancozeb 4LF	10-14	14-42		
Junction	mancozeb + copper hydroxide 60DF	2-4	14-42		

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
		Tourney	metconazole 50WDG	0.37-0.44	Late fall
		Eagle	myclobutanil 20 EW	1.2-2.4	Fall/winter
		Maneb + zinc	maneb (37%)+ zinc F	9.6-12.8	14-42
		Junction	mancozeb (15%) + copper hydroxide (46%)	4-8	7-14
		Affirm	polyoxin 11.3% WDG	0.88	7-14
		Endorse	polyoxin 2.5WP	4	7-14
		Banner Maxx, others	propiconazole 1ME	2-4	Single application
		Insignia	pyraclostrobin 20WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	10-14
		Spotrete F	thiram 4F	3-12	Fall and spring
		Spotrete 75WDG	thiram 75WDG	3-8	Fall and spring
		3336, 3336 plus	thiophanate methyl 4F, 2F, 50WP	2-4	14
		TM 85WDG	thiophanate methyl 85WDG	0.67-1.3	14
		Bayleton	triadimefon 50WSP,4.15F	1-2	60-90
		Compass	trifloxystrobin 50WG	0.2-0.25	10-21
		Tartan	trifloxystrobin+ triadimefon 2SC	2	fall/ early spring
		Armada	trifloxystrobin + triadimefon 50WP	1.2	fall/ early spring
		Trinity	triticonazole 1.7SC	0.5-2	14-28
		Triton	triticonazole 70WDG	0.15-0.3	Late fall
		Triton Flo	triticonazole 3F	0.28-1.1	10-14
		Curalan	vinclozolin 50EG	1	10-21
<b>note:</b> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.					
<b>Gray Leaf Spot</b> ( <i>Pyricularia grisea</i> )  bahagrass bermudagrass centipedegrass ryegrass St. Augustinegrass tall fescue	Small brown to ash-colored leaf spots with purple to brown margins. Lesions become covered with the gray, velvety, fungal mycelium of <i>Pyricularia grisea</i> . In severe cases leaves appear scorched. Prevalent during rainy, summer months. Mainly on St. Augustinegrass, but recently epidemics have occurred on tall fescue and perennial ryegrass. Avoid excess N. Irrigate deeply in early morning. Reduce traffic. Mostly a problem on newly planted St. Augustinegrass, especially in shade, or atrazine-treated St.	Heritage	azoxystrobin 50WG ; no more than 2 sequential treatments	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8 TL	1-2	14-28
		Heritage G	azoxystrobin 0.31G	2-4 lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-21
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Daconil Action	chlorothalonil +acylbenzolar-s-methyl	2-5.4	7-14
		Daconil WeatherStik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	2-3.6	7-10 pre-disease
				4-5.5	14 post-disease
		Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil 4.16%F	3-51	7-10 pre-disease
				6-8	14 post-disease
		Daconil Ultrex	chlorothalonil 82.5%WDG	1.8-3.2	7-10 pre-disease
				3.6-5	14 post-disease
		Chlorothalonil DF	chlorothalonil 82.5 DF	1.8-3.2	7-10
Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	10-14		
TwoSome Flowable Fungicide	chlorothalonil + fenarimol	3	7-10		

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
	Augustinegrass.	Disarm C	chlorothalonil + fluoxastrobin 4.25 SC	3-5.9	14-28
	<i>note:</i> chlorothalonil formulations have new maximum use rates in effect that depends on site.	Vitalonil	chlorothalonil + potassium phosphite 5.27 SC	5.75	7-10
		Concert	chlorothalonil + propiconazole 4.3SC	3-8.5	7-21
		Instrata	chlorothalonil + propiconazole + fludioxanil 3.6SC	2.75-6	10-14
		Consyst	chlorothalonil + thiophanate methyl 67WDG	2-8	7-14
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3.72-5.76	7-14
		Enclave	chlorothalonil + iprodione + thiophanate methyl +tebuconazole 5.3 SC	3-8	14-28
		Medallion	fludioxanil 50WP	0.25-0.50	14
		Medallion	fludioxanil 1.04 SC	1-2	14
		Disarm	fluoxastrobin 4SC	0.18-.36	14-28
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Fore, Dithane, Pentathlon, others	mancozeb 80WP	8	14
		Protect DF, others	mancozeb 75DF	6.4-12.8	7-14
		Fore Flo, others	mancozeb 4LF	9-14	5
		Duosan	mancozeb + thiophanate methyl	3-9	7-14
		Tourney	metconazole 50WG	0.37	14
		Eagle	myclobutanil 20EW	1.2-2.4	14
		Affirm	polyoxin 11.3% WDG	0.88	7-14
		Endorse	polyoxin 2.5WP	4	7-14
		Banner Maxx, others	propiconazole 1.3ME	1-2	14
		Insignia	pyraclostrobin 20WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	14-28
		3336	thiophanate methyl 50WP, 4F	4-6	10-14
		3336 plus	thiophanate methyl 2F	4-8	14-28
		TM 85WDG	thiophanate methyl 85WDG	2.35-3.53	14
		Bayleton	triadimefon 50WSP, 4.15 Flo	0.5-1	14
		Compass	trifloxystrobin 50WDG	0.15-0.25	14-21
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28
		<i>note:</i> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.			
"Helmintho-sporium" Leaf Spot/ Melting Out ( <i>Bipolaris</i> , <i>Drechslera</i> spp.)	Symptoms include leaf spotting and 'melting-out' phases. Leaves have circular to elongated, purplish or brown spots with straw-colored centers on older lesions. Numerous lesions	Heritage	azoxystrobin 50WDG	0.2-0.4	14-21
		Heritage TL	azoxystrobin 0.8 TL	1-2	14-21
		Heritage G	azoxystrobin 0.31G	2-4lb	14-21
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-21
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	14-21
bahiagrass		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-21

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
bermudagrass bluegrass creeping bentgrass ryegrass St. Augustinegrass zoysiagrasses	cause leaves to turn reddish-brown, then yellow, and die. Sheath and crown rot may be present. Ryegrass, bluegrasses ( <i>Poa pratensis</i> and <i>P. trivialis</i> ) and bermudagrass are most susceptible. Most prevalent when temperatures range from 68-95°F during mild periods of spring and fall. Maintain a balanced fertility. Irrigate deeply in the mornings. Raise mower height during disease outbreaks. Reduce thatch. <b>note:</b> chlorothalonil formulations have new maximum use rates in effect that depends on site. <b>note:</b> Fungicides containing copper hydroxide may be phytotoxic; read label carefully and use precautions.	Daconil Action	chlorothalonil + acylbenzolar-s-methyl 6.112F	2-5.4	7-14
		Daconil WeatherStik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	2	7-10 pre-disease
				2-3.6	7-21 post-disease
				4-5.5	14 post-disease
		Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil 4.16F	2.9	7-10 pre-disease
				2.9-5.1	7-21 post-disease
				5.8-7.9	14 post-disease
		Daconil Ultrex	chlorothalonil 82.5% WDG	1.8 -3.2	7-21
				3.2-5	14-21
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-5.9	14-21
		Vitalonil	chlorothalonil + potassium phosphite 5.27SC	5.75	7-10
		Concert	chlorothalonil + propiconazole 4.25SC	3-8.5	7-21
		Instrata	chlorothalonil + propiconazole + fludioxonil 3.6SC	2.75-6	10-21
		Consyst	chlorothalonil + thiophanate methyl 67WDG	2-8	7-21
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3.72-5.76	14
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-4.5	14-28
		Medallion	fludioxonil 50% WP	0.25-0.5	14-21
		Medallion	fludioxonil 1.04 SC	1-2	14
		Xzemplar	fluxapyroxad 2.47 SC	0.26	14-21
		Disarm	fluoxastrobin 4SC	0.18-.36	14-21
		Disarm G	fluoxastrobin 0.25 G	2.3-4.6 lb	14-21
		Systar	flutolanil + thiophanate methyl 80WDG	2-3	14-28
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Chipco 26GT, iprodione pro, others	iprodione 2F, 2SC	3-4	14-28
		26/36	iprodione + thiophanate methyl 3.8F	1-4	14-21
		Interface	iprodione + trifloxystrobin 2.27 SC	2-6	14-28
		Duosan	mancozeb + thiophanate methyl	3	5-14
		Fore, Dithane, Pentathlon, others	mancozeb 80WP	4	7-14
		Protect DF, others	mancozeb 75DF	4	7-14
Fore Flo, others	mancozeb 4LF	5-14	7-14		
Junction	mancozeb + copper hydroxide 60DF	2-4	7-14		
Maneb plus Zinc	maneb (37%)+ zinc F	4.8-6.4	7-14		
Eagle	myclobutanil 20 EW	1.2	14		
Affirm	polyoxin 11.3% WDG	0.88	7-14		
Endorse	polyoxin 2.5WP	4	7-14		
Banner Maxx, others	propiconazole 1.3ME	1-2	14		
Insignia	pyraclostrobin 20WDG	0.5-0.9	14-28		
Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28		
Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28		

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)		
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28		
		3336	thiophanate methyl 50WP, 4F	4-6	7-14		
		3336 plus	thiophanate methyl 2F	4-8	7-14		
		3336G	thiophanate methyl 2G	6-9lb	14		
		Spotrete	thiram 4F	3.75-7.5	3-10		
		Compass	trifloxystrobin 50WDG	0.1-0.25	14-28		
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28		
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28		
		Triton	triticonazole 70WDG	0.15-3.0	14-28		
		Triticonazole	triticonazole 1.7SC	0.5-2.0	14-28		
		Curalan	vinclozolin 50WP or DF	1-2	12-28		
		<i>note: Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.</i>					
		<b>Large Patch</b> (brown patch in warm season grasses; <b>Zoysia patch</b> , large patch of zoysia) ( <i>Rhizoctonia solani</i> AG 2, 2 LP)  zoysiagrass bermudagrass St. Augustinegrass Centipedegrass Seashore Paspalum	With Large Patch disease of warm season grasses, leaf fascicles pull easily from plant due to rot at leaf base. Initial infections are in the fall, but symptoms are usually most apparent in the spring as grasses emerge from winter dormancy.  Maintain adequate fertility. Avoid excess fast-release nitrogen. Irrigate deeply. Reduce thatch. Correct compaction and areas of poor drainage	Heritage	azoxystrobin 50WDG	0.4	14-28 (1, 2 or 3 applications in fall)
				Heritage TL	azoxystrobin 0.8TL	1-2	14-28
				Heritage G	azoxystrobin 0.31G	2-4lb	14-28
Briskway	azoxystrobin + difenoconazole 1.67 SC			0.3-0.725	14-28		
Headway	azoxystrobin + propiconazole 1.4ME			1.5-3.0	14-28		
Headway G	azoxystrobin + propiconazole 1.06G			2-4 lb	14-28		
Terraneb 65WP	chloroneb 65 WP			5	21-28		
Terraneb SP	chloroneb 2.9F			9	21-28		
Renown	chlorothalonil + azoxystrobin 5.16SC			2.5-4.5	14-21		
Disarm C	chlorothalonil + fluoxastrobin 4.25SC			3-5.9	14-28		
Consyst	chlorothalonil + thiophanate methyl 67WDG			2-8	7-14		
Reserve	chlorothalonil + triticonazole 4.8SC			3.2-5.4	14-28		
Secure	fluazinam 4.17 SC			0.5	14		
Disarm	fluoxastrobin 4SC			0.367	28		
Disarm G	fluoxastrobin 0.25G			2.3-4.6lb	14-28		
Prostar	flutolanil 70WP, 70 WDG			2.2	30		
Xzemplar	fluxapyroxad 2.47 SC			0.21-0.26	14-28		
Lexicon	fluxapyroxad + pyraclostrobin 4.17SC			0.34-0.47	14-28		
Chipco 26GT, iprodione pro, others	iprodione 2F, 2SC			4	14-21		
26/36	iprodione + thiophanate methyl 3.8F			2-4	14-21		
Interface	iprodione + trifloxystrobin 2.27 SC			4	14-21		
Tourney	metconazole 50WG			0.37	14		
Eagle	myclobutanil 20 EW	2.4	Apply in fall before dormancy, repeat 28 days				
Affirm	polyoxin D 11.3%WDG	0.88	7-14				
Endorse	polyoxin D 2.5WP	4	7-14				

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
		Banner Maxx, others	propiconazole 1.3ME	3-4	1 application in early fall, prior to symptoms
		Insignia	pyraclostrobin 20WG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	28
		3336, others	thiophanate methyl 4F, 50WP	2-4	7 to 14
		3336 plus	thiophanate methyl 2F	2-4	7-14
		Systar	thiophanate methyl +flutolanil 80WDG	2-3	14-21
		Trinity	triticonazole 1.7SC	1-2	14-28
		Triton	triticonazole 70WDG	0.15-0.3	14-28
		Triton Flo	triticonazole 3SC	0.55-1.1	14-28
		Heritage	azoxystrobin 50WDG	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8TL	1-2	14-28
		Heritage G	azoxystrobin 0.31G	2-4lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3	14-28
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
		Disarm C	chlorothalonil + fluoxastrobin 4.3SC	3-5.9	14-28
Concert	chlorothalonil + propiconazole 4.3SC	4.5-8.5	14-28		
Reserve	chlorothalonil + triticonazole 4.8SC	3.2-4.5	14-28		
Secure	fluzinam 4.17 SC	0.5	14		
Disarm	fluoxastrobin 4SC	0.18-0.36	14-28		
Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28		
Prostar	flutolanil 70WP, 70WDG	1.5	21-28		
Systar	flutolanil + thiophanate methyl 80WDG	2	21-28		
Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28		
Interface	iprodione + trifloxystrobin 2.27 SC	4	14		
Banner Maxx, others	propiconazole 1.3ME	1-2	14-28		
Insignia	pyraclostrobin 20WG	0.5-0.9	14-28		
Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28		
Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28		
Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28		
Torque	tebuconazole 3.6F	0.6	28		
Mirage Stressgard	tebuconazole 2 SC	1-2	14-28		
Compass	trifloxystrobin 50WDG	0.1-0.25	14-21		
Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28		
Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28		
Trinity	triticonazole 1.7 SC	1-2	14-28		
Curalan	vinclozolin 50EG	1	14-28		
<b>Powdery Mildew</b>	White, powdery like growth	Heritage	azoxystrobin 50WDG	0.2-0.4	14-28

**Pink Patch/Cream Leaf Blight**  
(*Limonomyces roseipellis*)

Cool season grasses, but occasionally on warm season such as centipedegrass or bermudagrass

Mats of mycelium that aggregate in clusters occur on leaves during cool, humid weather. Patches of affected turf range in size up to 6-8 inches diameter and has a pink color. Not severely damaging to turf, but the disease is unsightly. The causal agent is a basidiomycete with clamp connections visible on hyphae when viewed microscopically.

Judiciously increase nitrogen fertility. Irrigate infrequently but thoroughly to prevent drought stress.

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
<i>Blumeria graminis</i>  Most grasses; Kentucky bluegrass especially susceptible.	on the upper and lower leaf surfaces of grasses. The disease is most common in excessively shaded areas with high humidities.  Improve sunlight penetration and air movement or landscape the area with non-turfgrass plants that are shade tolerant.	Heritage TL	azoxystrobin 0.8TL	1-2.	14-28
		Heritage G	azoxystrobin 0.31G	2-4lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
		Disarm C	chlorothalonil + fluoxastrobin 4.3SC	3-5.9	14-28
		Concert	chlorothalonil + propiconazole 4.3SC	4.5-8.5	14-28
		Consyst	chlorothalonil + thiophanate methyl 67WDG	2-8	7-21
		Spectro 90	chlorothalonil + thiophanate methyl 90WDG	3.72-5.76	14
		Rubigan AS	fenarimol AS	2-4	Single application
		Disarm	fluoxastrobin 4SC	0.18-0.36	14-28
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Junction	mancozeb + copper hydroxide 60DF	2-4	7-14
		Eagle	myclobutanil 20 EW	1.2	14-28
		Banner Maxx, others	propiconazole 1ME	1-2	14-28
		Insignia	pyraclostrobin 20WG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28
Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28		
Bayleton	triadimefon 50WP, 4.15 Flo	0.5-1	15-30		
<b>Pythium Blight</b> <i>(Pythium spp.)</i>  All grasses	Grass dies in spots or streaks. Initially, the affected grass has a dark color and a greasy appearance, particularly in spots. Spots may develop a copper color and eventually a bleached, straw color as affected tissues die and dry. After prolonged moist or foggy periods, the cottony mycelium may be seen on the turf (note: this symptom is NOT always evident). Pythium can be spread by foot traffic or mowers passing over infected grasses. Occurs during warm, humid, foggy weather in poorly drained soils. Ryegrass, rough bluegrass, and bentgrass used for overseeding are most susceptible.	Heritage	azoxystrobin 50WG; no more than 2 sequential sprays	0.4	10-14
		Heritage TL	azoxystrobin 0.8TL; no more than 2 sequential sprays	1-2.	10-14
		Heritage G	azoxystrobin 0.31G	2-4 lb	10-14
		Headway	azoxystrobin + propiconazole 1.4ME	3	10-14
		Headway G	azoxystrobin + propiconazole 1.06G	2-2.5 lb	14
		Terraneb 65SP	chloroneb 65 SP	4	5-7
		Terraneb F	chloroneb 2.9F	7	5-7
		Disarm C	chlorothalonil + fluoxastrobin 4.25 SC	3-5.9	7-14
		Vitalonil	chlorothalonil + potassium phosphite 5.27 SC	5	7-14
		Segway	cyazofamid 3.3SC	0.45-0.9	14-21
		Koban	ethazole 30WP	2-4.5	10
		Terrazole	ethazole 35WP	2-4	10-14
		Disarm	fluoxastrobin 4SC	0.18-0.36	7-14
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14
		Stellar	fluopicolide + propamocarb 5.7SC	1.2	14
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.47	14
		Signature, Prodigy, Fosetyl AI 80WDG	fosetyl AI 80WDG	4-8	14-21
Protect DF	mancozeb 75DF	8	5-10		
Fore F	mancozeb 4LF	14	5		

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
	Improve aeration and drainage. Avoid frequent, shallow irrigation. Reduce mowings and minimize equipment or foot traffic across infected turf. Wash equipment that passes from infected to non-infected grass areas.	Junction	mancozeb + copper hydroxide 60DF	2-4	5
		Maneb plus Zinc	maneb (37%)+ zinc F	12.8	5
		Subdue Maxx	mefanoxam 2ME	0.5-1	10-21
		Subdue WSP	mefanoxam 43WSP	0.28-0.56	10-21
		Subdue G	mefanoxam 1G	12.5-25 lb	10-14
		Subdue	metalaxyl 2MEC	1-2	10-21
		Biophos	phosphorous acid salts 4.52	8-16	14-21
		Alude	phosphorous acid salts 5.17F	5-10	7-14
		Appear	potassium phosphite 4.1 lb/gal	3-6	7-14
		Banol	propamocarb 6S	1.3-4	7-21
		Insignia	pyraclostrobin 20 WDG	0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	1.1	10-14
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14
<i>Note: Fungicides containing copper hydroxide may be phytotoxic; read label carefully &amp; use precautions. To minimize the potential for resistance, alternate between classes of fungicides.</i>					
<i>Note: Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.</i>					
<b>Pythium Root Rot</b> /Pythium Root Dysfunction ( <i>Pythium arrhenomanes</i> , <i>P. aristosporum</i> , <i>P. volutum</i> )  Creeping bentgrass primarily	Roots are off color, tan or light brown, water-soaked appearance with few or no feeder roots present. Sometimes, new roots may be initiated from crown regions as older roots become diseased. Root rot is favored in poorly drained or continuously wet soils but can occur in sand-based rootzones with excellent drainage. Areas will appear chlorotic and be less vigorous in growth, but usually do not die. Can occur year around, especially on over-irrigated sites. Avoid overwatering. Aerate compacted and poorly drained soils. Foliar fertilizer treatments may be useful.	Heritage	azoxystrobin 50WG; no more than 2 sequential sprays	0.4	10-14
		Heritage TL	azoxystrobin 0.8TL; no more than 2 sequential sprays	2	10-14
		Heritage G	azoxystrobin 0.31G	2-4 lb	10-14
		Headway	azoxystrobin + propiconazole 1.4ME	3	10-14
		Headway G	azoxystrobin + propiconazole 1.06G	2-2.5 lb	14
		Terraneb 65SP	chloroneb 65SP	2-5	7-14
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-5.9	7-10
		Segway	cyazofamid 3.33SC	0.45-0.9	14-21
		Koban	ethazole 30WP	2-5	7-14
		Terrazole	ethazole 35WP	2-4	10-14
		Disarm	fluoxastrobin 4SC	0.18-.36	7-10
		Disarm G	fluoxastrobin 0.25G	2.3-4.6lb	14
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.47	14-28
		Signature, Prodigy, Fosetyl AI 80WDG	fosetyl AI 80WG	4-8	14-21
		Appear	potassium phosphite 4.1 lb/gal	6-8	7-14
		Banol	propamocarb 6S	1.3-4	7-21
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.7	14-28
		Insignia	pyraclostrobin 20WG	0.9	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14
<i>Note: Water into the root-zone., except fosetyl AI formulations. To minimize the potential for resistance, alternate between classes of fungicides.</i>					
<b>Rapid Blight</b> ( <i>Labyrinthula terrestris</i> )	Patches from a few inches up to a foot in diameter occur most commonly in	Interface	iprodione + trifloxystrobin 2.27 SC	2-6	14-28
		Fore	mancozeb 80WP	8	14
		Protect	mancozeb 75WP	8	14



Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
	salinity-stressed cool season grasses. Affected turf can be chlorotic and water-soaked. Individual leaves appear blotchy. The organism does not form a mycelium. Manage salinity by core aeration, gypsum applications and leaching regime.	Insignia	pyraclostrobin 20 WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28G	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14
		Compass	trifloxystrobin 50 WDG	0.15-0.25	14-21
		Tartan	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28
		<b>note:</b> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.			
<b>Red Thread</b> ( <i>Laetisaria fuciformis</i> )  fescues and ryegrasses	In winter and early spring, leaf tips appear shriveled and ragged, occurring in patches up to 6 inches in diameter. Red to orange-colored fungal “threads” appear to grow from affected leaf tips. Turf appears as if it has been cut with a dull rotary mower. The disease is favored by cloudy, cold, humid weather. Maintain adequate fertility, and avoid transient drought conditions. Mow frequently at the correct cutting height.  <b>Note:</b> chlorothalonil formulations have new maximum use rates in effect that depends on site - see new labels for details.  <b>Note:</b> Fungicides containing copper hydroxide may be phytotoxic; read label carefully and use precautions.	Heritage	azoxystrobin 50WDG	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8TL	1-2	14-28
		Heritage G	azoxystrobin 0.31G	2-4lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3	14-28
		Daconil Action	chlorothalonil + acylbenzolar-s-methyl 6.112 F	2-5.4	7-14
		Daconil Weather Stik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	2-3.6	7-10 pre-disease
				>3.6-5.5	14 post-disease
				5.5	14 post-disease
		Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil 4.16F	2.9-5.1	7-10 pre-disease
				>5.1-7.9	14 post-disease
				7.9	14 post-disease
		Daconil Ultrex, Chlorothalonil DF	chlorothalonil 82.5% WDG, DF	1.8-3.2	7-10 pre-disease
				>3.2-5	14 post-disease
				5	14 post-disease
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-5.9	14-28
		Vitalonil	chlorothalonil + potassium phosphite 5.27SC	5.75	7-10
		Concert	chlorothalonil + propiconazole 4.3SC	3-5.9	14-28
		Instrata	chlorothalonil + propiconazole + fludioxanil 3.5SC	2.75-6	14-21
		Consyst	chlorothalonil + thiophanate methyl 67WG	3-8	7-21
Spectro 90	chlorothalonil + thiophanate methyl 90WG	3.72-5.76	14		
Reserve	chlorothalonil + triticonazole 4.8SC	3.2-4.5	14-28		
Rubigan AS	fenarimol 1AS	8	30		
Secure	fluazinam 4.17 SC	0.5	14		
Disarm	fluoxastrobin 4SC	0.18-.36	14-28		
Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28		
Prostar	flutolanil 70WP, 70WDG	1.5	21-28		
Systar	flutolanil + thiophanate methyl 80WG	2-3	14-21		
Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28		
Chipco 26GT, iprodione pro, others	iprodione 2F, 2SC	4	14		
		26/36	iprodione + thiophanate methyl 3.8F	2-4	14-21

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
		Interface	iprodisone + trifloxystrobin 2.27 SC	4	14
		Fore	mancozeb 80WP	4-8	7-14
		Protect	mancozeb 75DF	4-8	7-14
		Fore F	mancozeb 4LF	7-14	7-14
		Junction	mancozeb + copper hydroxide 60DF	2-4	7-14
		Maneb plus Zinc	maneb (37%)+ zinc F	6.4-12.8	7-14
		Tourney	metconazole 50WDG	0.37	14-21
		Eagle	myclobutanil 20 EW	1.2	14-21
		Affirm	polyoxin 11.3% WDG	0.88	7-14
		Endorse	polyoxin 2.5WP	4	7-14
		Banner Maxx	propiconazole 1.3ME	2	14-21
		Insignia	pyraclostrobin 20WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	14-28
		3336 WSP	thiophanate methyl 50WSP	2-4	14
		3336F	thiophanate methyl 4F	2-4	14
		TM 85WDG	thiophanate methyl 85WG	0.67-1.3	14
		Spotrete	thiram 4F	3.75-7.5	3-10
		Bayleton	triadimefon 50WSP, 4.17 Flo	0.5-1	15-30
		Compass	trifloxystrobin 50WDG	0.1-0.25	14-21
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28
		Trinity	triticonazole 1.7SC	0.5-1	14-28
		Triton	triticonazole 70WDG	0.15-0.3	14-28
		Curalan	vinclozolin 50EG	1	14-28
		<i>note:</i> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.			
<b>Rust</b> ( <i>Puccinia</i> and <i>Uromyces</i> spp.)	Small yellow to orange or reddish-brown pustules on the leaves. Heavily infected area appears thin and chlorotic. Ryegrass and zoysiagrasses are most susceptible. Plant resistant or tolerant varieties. Maintain growth by fertilizing and irrigating adequately. Mow frequently and remove clippings. Humid weather following a drought period favors epidemics.	Heritage	azoxystrobin 50WDG	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8TL	1-2	14-28
		Heritage G	azoxystrobin 0.31G	2-4lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3.0	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Daconil Weather Stik, Chlorothalonil 720 SFT, others	chlorothalonil 6F	4-5.5	14 pre-disease
				5.5	14 post-disease
		Daconil Zn, Chlorothalonil 500 Zn, others	chlorothalonil 4.16 F	5.8-7.9	14 pre-disease
				7.9	14 post-disease
		Daconil Ultrex	chlorothalonil 82.5% WDG	3.6-5	14 pre-disease
				5	14 post-disease
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-5.9	14-28

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
	<i>note:</i> chlorothalonil formulations have new maximum use rates in effect that depends on site - see new labels for details.	Concert	chlorothalonil +propiconazole 4.3SC	3-8.5	7-28
		Instrata	chlorothalonil +propiconazole + fludioxanil 3.6SC	2.75-6	14-28
		Consyst	chlorothalonil + thiophanate methyl 67WG	3-8	7-14
		Spectro 90	chlorothalonil +thiophanate methyl 90WG	3.72-5.76	14
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-4.5	14-28
		Secure	fluazinam 4.17 SC	0.5	14
		Disarm	fluoxastrobin 4SC	0.18-0.36	14-28
		Disarm G	fluoxastrobin 0.25G	2.3-4.6lb	14-28
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Interface	iprodione + trifloxystrobin 2.27 SC	2-6	14-28
		Protect DF	mancozeb 75DF	4	7-14
		Fore, others	mancozeb 80WP	4	7-14
		Fore F, others	mancozeb 4LF	5-7	7-10
		Junction	mancozeb + copper hydroxide 60DF	2-4	7-14
		Maneb plus Zinc	maneb (37%)+ zinc F	1.76	7-14
		Tourney	metconazole 50WDG	0.37	14-21
		Eagle	myclobutanil 20 EW	1.2	14-28
		Banner Maxx, others	propiconazole 1.3ME	1-2	14-28
		Insignia	pyraclostrobin 20 WDG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	14-28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	2.0	28
		3336 plus	thiophanate methyl 2F	4-8	14-28
		3336	thiophanate methyl 50WP, 4F	4-6	14
		TM 85WDG	thiophanate methyl 85WG	2.35-3.53	14
		Spotrete	thiram 4F	3.75-7.5	3-10
		Bayleton	triadimefon 50WSP, 4.17 Flo	0.5-1	15-30
		Compass	trifloxystrobin 50WDG	0.1-0.25	14-21
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14-28
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14-28
		Trinity	triticonazole 1.7SC	0.5-1	14-28
	Triton	triticonazole 70WG	0.15-0.225	14-28	
	Triton Flo	triticonazole 3SC	0.28-0.55	14-28	
		<i>note:</i> Fore mancozeb formulations now have restrictions on use rates and maximum seasonal rates – see current label for details.			
<b>Southern Blight</b> ( <i>Sclerotium rolfsii</i> )  Creeping bentgrass, bluegrasses, fescues, and ryegrasses	Yellow, circular or crescent shaped patches up to 1 ft in diameter, sometimes with “frog-eye” symptoms or less affected grass in the center of patches. Affected turf is a reddish-brown or bronze	Heritage	azoxystrobin 50WDG	0.2-0.4	14-28
		Heritage TL	azoxystrobin 0.8TL	1-2	14-28
		Heritage G	azoxystrobin 0.31G	2-4lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
	coloration, turning brown as it dies. Off-white or tan fungi sclerotia may be visible in the mat or thatch with a hand lens. Avoid drought conditions preceding hot, humid or wet weather; improve poorly drained soils and improve aeration to roots and crowns.	Terraneb SP	chloroneb 65SP	4	5-7
		Disarm	fluoxastrobin 4SC	0.18-.36	14-28
		Disarm G	fluoxastrobin 0.25G	2.3-4.6lb	14-28
		Prostar	flutolanil 70WP, 70WDG	1.5	21-28
		Systar	flutolanil + thiophanate methyl 80WG	2	21-28
		Bayleton	triadimefon 50WSP, 4.15 Flo	0.5-2	14-28
		Tartan	trifloxystrobin + triadimefon 2SC	1-2	14
		Armada	trifloxystrobin + triadimefon 50WP	0.6-1.2	14
<b>Slime Mold</b> ( <i>Physarum</i> sp., and <i>Fuligo</i> sp.) All grasses	Bluish-gray encrustations on leaf blades. In spring and summer during heavy rain, prominent white or yellow slimy masses may develop. Slime molds are not parasites of turf. Brush off or wash off mold with a strong stream of water. Mow.	Fore, others	mancozeb 80WP	4-8	7-14
		Protect	mancozeb 75DF	4-8	7-14
		Fore F, others	mancozeb 37%F	6.4-12.8	7-14
<b>Spring Dead Spot -</b> ( <i>Ophiosphaerella korrae</i> , <i>O. narmari</i> , or <i>O. herpotricha</i> )  bermudagrass, especially sterile hybrids	First appears as circular dead areas 6 inches up to 2 feet in diameter in the spring when the rest of the turf area turns green with new growth. Normally bermudagrass does not invade the dead areas as the growing season progresses nor do the dead areas increase in size until the next spring. <i>note:</i> scout and map diseased spots in spring, treat with fungicides in late summer through early fall. In established bermudagrass, thorough cultivation of dead areas may provide temporary recovery. Manage thatch by cultural methods, and avoid excess, unbalanced N fertilization in late summer or early fall.	Heritage	azoxystrobin 50WDG	0.4	Fall, 1 or 2 applications 1 month prior to dormancy, reapply 14-28 days later.
		Heritage TL	azoxystrobin 0.8TL	2	Fall, 1 or 2 applications 1 month prior to dormancy, reapply 14-28 days later.
		Headway	azoxystrobin + propiconazole 1.4ME	3	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Enclave	chlorothalonil + iprodione + thiophanate methyl +tebuconazole 5.3 SC	3-8	14-28
		Rubigan AS	fenarimol 1AS	6	1 application
				4	2 applications 14-30 days apart
		Lexicon	fluxapyroxad + pyraclostrobin 4.17 SC	0.47	28 day
		Disarm	fluoxastrobin 4SC	0.36	14-28 fall
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28 fall
		Eagle, Myclobutanil 20EW	myclobutanil 20 EW	2.4	Fall, 28 days
		Banner Maxx, Propiconazole 14.3, others	propiconazole 1.3ME	4	1-3 applications, 30 day interval
		Torque	tebuconazole 3.6F	0.6	28
Mirage Stressgard	tebuconazole 2 SC	2.0	28		

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
		3336	thiophanate methyl 4F, 50WP	4-8	Apply in fall before dormancy/reapply in spring when soil temperatures reach 55-60F.
<b>Stripe Smut</b> ( <i>Ustilago striiformis</i> )	Tall fescue and Kentucky Bluegrass stands may become clumpy in appearance. Individual leaves appear shredded, with black linear streaks evident in the shredded leaves.	Headway	chlorothalonil + propiconazole 4.3SC	4.5-8.5	Fall or spring
		Enclave	chlorothalonil + iprodione + thiophanate methyl +tebuconazole 5.3 SC	3-8	14-28
		Eagle	myclobutanil 20 EW	1.2	14
		Banner Maxx, Propiconazole 14.3, others	propiconazole 1.3ME	1-2	Fall or Spring.
		Torque	tebuconazole 3.6F	0.6	28
		3336	thiophanate methyl 50WSB, 4F	4-8	14
		TM 85WDG	thiophanate methyl 85WG	3-3.53	14-21
		3336G	thiophanate methyl 2G	6-9lb	14
		Bayleton	triadimefon 50WSP	1	See label
		Tartan	trifloxystrobin + triadimefon 2SC	1	3 apps per season/ see label
		Armada	trifloxystrobin + triadimefon 50WP	0.6	See label
<b>Bermudagrass Decline</b> ( <i>Gaeumannomyces graminis</i> var. <i>graminis</i> ) Bermudagrass	Disorder first appears as chlorotic patches 8-24" in diameter, usually in late summer during prolonged cloudy weather. Without control, patches will expand. Grass thins and develops bare areas. Green shoots next to chlorotic ones are common. Plants in the affected areas have poor root system, no rhizomes and very few stolons. Usually observed first on outside edge of golf course putting greens. Associated with consistent, low mowing heights. Raise cutting height to increase photosynthetic area. Do not scalp St. Augustinegrass when mowed. Increased fertility may help by encouraging rapid cover of affected areas. Topdress golf course greens frequently. Alleviate all stresses on the grass.	Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	spring/fall see label
		Insignia	pyraclostrobin 20WG	0.9	spring/fall see label
		Insignia Intrinsic	pyraclostrobin 2.08SC	0.7	spring/fall see label
		Honor Intrinsic	pyraclostrobin + boscalid 28WDG	1.1	spring/fall see label
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	28
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	2.0	28
		3336F	thiophanate methyl 41%F	4-8	7-14 in mid-July
		3336WP	thiophanate methyl 50WP	4-8	7-14 in mid-July
		Bayleton	triadimefon 50WSP, 4.17 Flo	1-2	21-28 Irrigate thoroughly after fungicide application to move into the root zone.
<b>Take-all Root Rot</b> (same pathogen as above) St. Augustinegrass					

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
<b>Take-all Patch</b> ( <i>Gaeumannomyces graminis</i> var. <i>avenae</i> )	This is a disease primarily of creeping bentgrass. Disease appears in spring or summer as patches of discolored turf which may or may not exhibit a “frog-eye” symptom; more common on fairways than greens. In severe cases, nonsusceptible ryegrass or bluegrasses may colonize the center of patches, giving the “frog-eye” symptom. Roots and crowns are rotted and symptoms may become more severe as heat and water stresses become greater. More common on newly constructed sand-based greens, fumigated greens, and/or soils with pH levels > 6.0.  Utilized acidifying fertilizers, such as ammonium sulfate or ammonium chloride, but at rates of N agronomically acceptable for bentgrass growth. Apply Mn at rates recommended by soil tests. Improve root health by aeration and other accepted cultural practices.	Heritage	azoxystrobin 50% WG	0.4	2 applications, 28 days apart in spring & fall.
		Heritage TL	azoxystrobin 0.8TL	2.	2 applications, 28 days apart in spring & fall.
		Heritage G	azoxystrobin 0.31G	2-4lb	28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	28
		Headway	azoxystrobin + propiconazole 1.4ME	3	14-28
		Headway G	azoxystrobin + propiconazole 1.06G	3.5-4 lb	28
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	5.9	28
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-5.4	14-28
		Rubigan AS	fenarimol 1AS	4-8	1-2 applications 30 day apart in fall.
		Disarm	fluoxastrobin 4SC	0.36	28 fall and spring
		Disarm G	fluoxastrobin 0.25G	2.3-4.6lb	28
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.47	28
		Tourney	metconazole 50WDG	0.37	1-2 apps/ fall
		Eagle	myclobutanil 20EW	2.4	Fall/spring 28 day
		Banner Maxx, Propiconazole 14.3, others	propiconazole 1.3ME	2-4	Up to 2 applications in spring & fall.
		Insignia	pyraclostrobin 20WDG	0.9	2 applications, 28 days apart in spring & fall
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.7	28
		Honor Intrinsic	pyraclostrobin + boscalid 28WG	1.1	28
		Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	28
		Torque	tebuconazole 3.6F	0.6	28
Mirage Stressgard	tebuconazole 2 SC	2.0	14-28		
3336	thiophanate methyl 50WP, 4F	4-6	When disease symptoms appear, 7-14 day interval.		
3336 plus	thiophanate methyl 2F	4-8	14-28		
3336G	thiophanate methyl 2G	6-9lb	14		
Bayleton	triadimefon 50% WSP, 4.17 Flo	1-2	Early fall & early spring.		
Trinity	triticonazole 1.7SC	1.0-2.0	14-28 (fall and spring)		
Triton	triticonazole 70WG	0.15-0.3	14-28		

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
<b>Rhizoctonia Leaf and Sheath Spot</b> ( <i>R. zeae</i> and <i>R. oryzae</i> )  bermudagrass centipede grass creeping bentgrass St. Augustine grass tall fescue	Occurs during summer months when weather is hot and humid. In cool season grasses, symptoms can closely mimic brown patch, caused by <i>R. solani</i> . In bermudagrass, the most commonly observed symptoms are necrotic rings or partial rings that vary from a few inches to a few feet in diameter. Spots may be observed on leaves at edge of rings. Dry soil may be present under ring. If rings are associated with very dry soil, see section on Localized Dry Spots.	Triton Flo	triticonazole 3SC	0.55-1.1	14-28
		Heritage	azoxystrobin 50WDG	0.4	14-28
		Heritage TL	azoxystrobin 0.8ME	2	14-28
		Heritage G	azoxystrobin 0.31G	2-4lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	1.5-3	14-28
		Daconil Weather Stik	chlorothalonil 6F	2-3.6	7-14 pre-disease.
				4-5.5	14 post-disease.
		Daconil Zn	chlorothalonil 4F	2.9-5.1 5.8-7.9	7-14 pre-disease.
		Daconil Ultrex	chlorothalonil 82.5% WG	5.8-7.9	14 post-disease.
				1.8-3.2	7-14 pre-disease.
				3.6-5	14 post-disease
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-21
		Vitalonil	chlorothalonil + potassium phosphite 5.27SC	5.75-8	7-14
		Instrata	chlorothalonil + propiconazole + fludioxanil 3.59SC	2.75-6	14-21
		Spectro 90	chlorothalonil + thiophanate methyl 9090WG	3-5.76	14-21
		Medallion	fludioxonil 50% WP	0.25-0.5	14-21
		Prostar	flutolanil 70WG	2.2-4.5	14-21
		Xzemplar	Fluxapyroxad 2.47 SC	0.21-0.26	14-21
		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
Insignia	pyraclostrobin 20WG	0.5-0.9	14-28		
Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28		
Honor Intrinsic	pyraclostrobin + boscalid 28WG	1.1	14-28		
Pillar G	pyraclostrobin + triticonazole 0.81G	3.0 lb	28		
<i>note:</i> chlorothalonil formulations have new maximum use rates in effect that depends on site - see new labels for details. Some other active ingredients may be useful for control but are not specifically labeled for this disease – thiophanate methyl and other fungicides in the benzimidazole class are ineffective.					
<b>Yellow Patch</b> (Cool weather brown patch) ( <i>Rhizoctonia cerealis</i> )  bermudagrass, rough bluegrass, perennial ryegrass, zoysiagrass	Common in cold weather under prolonged cloudy conditions on bentgrass greens or overseeded bermudagrass greens. Yellow to orange irregular rings, with few leafspots in cool season grasses. Also in zoysia in early fall, causing leafspot symptoms in a ring-shaped pattern. Improve drainage, manage thatch	Heritage	azoxystrobin 50WG	0.4	28
		Heritage TL	azoxystrobin 0.8TL	2	28
		Heritage G	azoxystrobin 0.31G	2-4lb	14-28
		Briskway	azoxystrobin + difenoconazole 1.67 SC	0.5-0.725	14-28
		Headway	azoxystrobin + propiconazole 1.4ME	3.0	28
		Headway G	azoxystrobin + propiconazole 1.06G	2-4 lb	14-28
		Renown	chlorothalonil + azoxystrobin 5.16SC	2.5-4.5	14-28
		Disarm C	chlorothalonil + fluoxastrobin 4.25SC	3-5.9	14-28
		Instrata	chlorothalonil + propiconazole + fludioxanil 3.6SC	8-11	late fall
		Reserve	chlorothalonil + triticonazole 4.8SC	3.2-5.4	21-28

Disease & Affected Grasses	Symptoms & Cultural Controls	Trade Name	Fungicides <sup>1</sup>	Rate (oz/1000 ft <sup>2</sup> )	Application Interval (Days)
	accumulations	Medallion	fludioxonil 50%WP	0.5	late fall.
		Medallion	fludioxonil 1.04SC	2	Spring/Fall
		Disarm	fluoxastrobin 4SC	0.36	28
		Disarm G	fluoxastrobin 0.25G	2.3-4.6 lb	14-28
		Prostar	flutolanil 70WP, 70WDG	1.5	30 days
		Systar	flutolanil + thiophanate methyl 80WG	1.5	21-28
		Tourney	metconazole 50WDG	0.37-0.44	Late fall
		Affirm	polyoxin 11.3% WDG	0.88	Late fall
		Endorse	polyoxin 2.5WP	4	7-14
		Banner Maxx, Propiconazole 14.3, others	propiconazole 1.3ME	3-4	Late fall
		Torque	tebuconazole 3.6F	0.6	28
		Mirage Stressgard	tebuconazole 2 SC	1-2	21-28
		3336	thiophanate methyl 4F, 50WP	4-8	Late fall
		3336G	thiophanate methyl 2G	6-9 lb	Late fall
		Triton Flo	triticonazole 3F	0.55-1.1	21-28
		Trinity	triticonazole 1.75SC	1-2	21-28
<b>Yellow Tuft</b> (downy mildew) ( <i>Sclerophthora macrospora</i> )	In creeping bentgrass, the disease is usually associated with compacted, overly wet areas. In cool season grasses, individual plants will be yellow in color, with excessive proliferation of shoots, giving a "bunchy" appearance. In St. Augustinegrass, linear, gray raised pustules can be seen in the leaves, and leaves will shred longitudinally. Improve drainage, sunlight penetration; relieve compaction; provide good growing conditions.	Signature	fosetyl AI 80WDG	4-8	14-21
Creeping bentgrass, St. Augustinegrass		Lexicon	fluxapyroxad + pyraclostrobin 4.17SC	0.34-0.47	14-28
		Subdue Maxx, Mefanoxam 2AQ	mefanoxam 2ME	0.5-1	10-21
		Subdue G	mefanoxam 1G	12.5-25lb	10-14
		Subdue	metalaxyl 2MEC	1-2	10-21
		Insignia	pyraclostrobin 20WG	0.5-0.9	14-28
		Insignia Intrinsic	pyraclostrobin 2.08 SC	0.4-0.7	14-28
		Honor Intrinsic	pyraclostrobin + boscalid 28G	0.55-1.1	14-28
		Pillar G	pyraclostrobin + triticonazole	3.0 lb	14-28

<sup>1</sup> Presence of a fungicide in this list does not constitute a recommendation. Trade names are used with the understanding no endorsement is intended nor is criticism implied of similar products not mentioned. All chemicals should be used in accordance with the manufacturer's instructions. Do not add adjuvants, surfactants, etc. to fungicides unless specified by the label. Check labels carefully to determine usage on residential, or commercial turf areas and other restrictions.