Cool-season disease tips

The goal of every turfgrass manager is to create a healthy turfgrass ecosystem.

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Anyone that has ever taken a soil microbiology course comes away with a new appreciation of the abundance of microbes in the plant/soil rhizosphere.

One pound of soil and roots may contain over 900 billion organisms — bacteria, fungi, actinomycetes, nematodes, insects and other living creatures.

Turfgrass diseases result from the complex interaction of pathogen, host and environment. Turfgrass management practices can affect all three, greatly influencing disease development. Those practices that favor vigorous, but not lush, grass growth and are detrimental to growth of the pathogen result in less disease injury to the turf. Good turfgrass management is an effective disease deterrent.

The goal of every turfgrass manager should be to create a healthy turfgrass ecosystem. This is a challenge, since growing seasons in the northern latitudes are never the same. In 1996 the Northern Plains were relatively cool and wet. 1997, however, was just the opposite — hot, dry and windy. 1998 was the year of El Niño.

Because each season is different and because the relationship of host, pathogen and environment are so ecologically interwoven, disease predictions are difficult.

The chart below should provide some general information that can help you:

PREVENTIVE AND CURATIVE FUNGICIDE PROGRAMS FOR MAJOR DISEASES OF COOL-SEASON TURFGRASSES

Disease	Preventive/ Curative	Initial application	Products
Leaf spot/melting out	P	May	chlorothalonil, iprodione, mancozeb, propiconazole, vinclozolin
Stripe smut	P	April or October	cyproconazole, fenarimol, flutolanil, propiconazole, thiophanate-methyl, triadimefon
Necrotic ring spot	P	When soil temperatures reach 60°F at 2" depth	azoxystrobin, cyproconazole, fenarimol, iprodione, thiophanate-methyl
Fairy ring	C	At first symptoms of green ring	flutolanil
Dollar spot	P/C	June for ryegrass and bentgrass	chlorothalonil, cyproconazole, iprodione, mancozeb, propiconazole, thiophanate-methyl, triadimefon, vinclozolin
Brown patch	P/C	June for ryegrass and bentgrass	azoxystrobin, chlorothalonil, cyproconazole, flutolanil, iprodione, propiconazole, thiophanate-methyl, triadimefon, vinclozolin
Summer patch	P	When soil temperatures reach 65°F at 2" depth	azoxystrobin, cyproconazole, fenarimol, propiconazole, thiophanate-methyl, triadimefon
Pythium blight	P	June	azoxystrobin, chloroneb, ethazol, fosetyl-Al, metalaxyl, propamocarb
Rust	P/C	July	chlorothalonil, cyprocanazole, mancozeb, propiconazole, triadimefon
Typhula blight	P	October/November	chlorothalonil, cyproconazole, fenarimol, flutolanil, iprodione, PCNB, propiconazole, triadimefon, vinclozolin
Microdochium patch	P	October/November	azoxystrobin, chlorothalonil, cyproconazole, fenarimol, iprodione, PCNB, propiconazole, thiophanate-methyl, triadimefon, vinclozolin

This list is presented for information only and no endorsement is intended for products listed nor criticism meant for products not listed. Check with local specialists for specific recommendations and read and follow label instructions.

Warm-season solutions

Southern turfgrass diseases have distinctive symptoms.

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Some familiar foes to turfgrass managers in the South include the following diseases and their control strategies:

Anthracnose – Areas with disease are correlated to either poor fertility conditions or nematode populations. Minimizing stress conditions reduces development.

Bermudagrass decline – Pursue lab diagnosis to verify decline and separate this disease from similar appearing localized dry spots (fairy rings) and Rhizoctonia leaf and sheath spot disease. Raise mowing height by 50% to increase photosynthetic area and top-dress greens frequently.

Brown Patch – This spring/fall disease is most aggressive between 75-85°F. Disease is favored by thatch, excessive soil moisture and readily soluble N sources. Dethatch severely affected areas, apply slow release N, water deeply but infrequently.

Cottony Blight – Excessive rainfall in the fall through spring period results in a higher incidence of cottony blight in overseeded situations. Many greens and tees develop patches or streaks of greasy-green invaded turf as the fungus moves readily with surface water or traffic movement. Improve air circulation and drainage and

FUNGICIDE MANAGEMENT FOR WARM-SEASON TURFGRASSES

Disease	Common Fungicides	Comments
Algae	Chlorothalonil, mancozeb, maneb	Reduce watering and verticut algal mats
Anthracnose	Chlorothalonil, cyproconazole, propiconazole, triadimefon	Minimize thatch
Bermudagrass decline	Azoxystrobin, fenarimol, myclobutanil, propiconazole, thiophanate methyl, triadimefon	Preventative use and azoxystrobin has curative potential for golf course and sod farms
Brown patch	Azoxystrobin, chloroneb, chlorothalonil, cyproconazole, fenarimol, flutolanil, iprodione, maneb, mancozeb, myclobutanil, PCNB, propiconazole, thiophanate methyl, thiram, triadimefon	Mow into infested sites last and collect clippings to minimize mower spread
Cottony blight	Chloroneb, etridiazole, fosetyl aluminum, mancozeb, mefanoxam, propamocarb	Minimize traffic and irrigation on infested sites
Dollar spot	Chlorothalonil, cyproconazole, fenarimol, iprodione, mancozeb, maneb, myclobutanil, PCNB, propiconazole, thiophanate methyl, thiram, triadimefon	Minimize thatch and achieve a balanced fertility for long-term control
Fairy ring	Flutolanil	Some success with puffball caused rings from shallow depths
Gray leaf spot	Chlorothalonil, propiconazole	Repeated applications during rainy period needed
Helminthosporium spots	Chlorothalonil, iprodione, mancozeb, maneb, myclobutanil, PCNB, propiconazole, vinclozolin	Minimize thatch
Leptosphaerulina blight	Chlorothalonil, iprodione, vinclozolin	
Pythium root rot	Chloroneb, etridiazole, fosetyl aluminum, mefanoxam, propamocarb	Avoid excessive irrigation; Foliar fertilization may help
Rhizoctonia leaf and sheath spot	Chlorothalonil, flutolanil, iprodione, mancozeb, PCNB, thiram	Can be confused with decline and fairy ring or take all root rot
Rust	Cyproconazole, mancozeb, maneb, propiconazole, triadimefon	Usually not needed for control
Take all root rot	Fenarimol, myclobutanil, propiconazole, thiophanate methyl, triadimefon	Preventative use only

restrict traffic across infested sites.

Dollar Spot – Low fertility sites receiving excessive irrigation or under high moisture weather periods are prime sites for disease development. Achieve balanced fertility and minimize thatch.

Fairy Ring – Use of flutolanil for fairy ring suppression has been variable in performance. The species of fungus involved and the depth of the fungus colony in the soil may be two reasons for fungicide performance variation. Fairy ring on bermudagrass can be confused with decline and/or Rhizoctonia leaf and sheath spot. A clinical diagnosis can be helpful here.

Gray leaf spot – This common spot on St. Augustinegrass is most damaging during the hot, rainy summer period. Sites poorly adapted to turf often serve to sustain the fungus. Shady urban lawn sites with persistent leaf spot problems should be redesigned and converted to shade-tolerant ground covers, bedding plants or woody ornamentals. Affected lawns should be deeply watered in early morning hours. Avoid use of readily soluble N sources.

***Helminthosporium* blights** – Primarily damaging in spring and fall on ryegrass and bermuda and is favored by thatchy sites with low fertility and frequent irrigation. Can be mistaken for gray leaf spot on St. Augustine in late summer and early fall. Improve site fertility, reduce thatch, irrigate for longer periods with less frequency.

Pythium root rot – Occurs on all grasses and is caused by a group of related fungal species. Feeder root destruction occurs in sites with poor drainage or excessive irrigation causing turf yellowing and death with a bleached straw color. Improve soil drainage and restrict supplemental irrigation. Foliar fertilization may aid in recovery of slight to moderately damaged areas.

***Rhizoctonia* leaf and sheath spot** – A summer disease of bermuda only, until recent isolations from St. Augustinegrass. Can appear as a small ring, arc or patch. Lab diagnosis is important.

Rust – Disease develops in the cooler periods, especially in partially shaded turf. Affected turf is thin and chlorotic with obvious yellow to orange-red blisters on leaf surfaces. Collect infected clippings during mowing. Fungicides are infrequently used.

Take all root rot (patch) – Stress-related disease on urban St. Augustine-, centipede-, bahia- and zoysiagrasses. Develops in mid to late spring and continues through summer into early fall. Affected turf yellows, followed by a thinning to death. Fungal pathogen invades following stresses from disease, insects, nematodes, cultural or environmental factors. **LM**