

# TURF DISEASE GUIDE

The southeastern United States is blessed with a wide range of choices when it comes to turfgrass varieties.

The predominant turf species used in this region is bermudagrass; however, there are five other warm season grasses used extensively for turf purposes. These include St. Augustine, zoysiagrass, centipedegrass, carpetgrass and bahiagrass.

During the winter months, when warm season grasses are brown and dormant, various annual and perennial turfgrasses are used as temporary overseeded grasses.

Although most of the serious

diseases of southern turf are caused by fungi, other agents such as bacteria, viruses, and nematodes can cause serious problems to certain grasses.

Turf producers in the south cannot depend solely on fungicides for disease control. Good variety selection, cultural and fertility practices are very important in disease control. No amount of fungicide will compensate for poor fertility and cultural practices.

## Brown patch

Brown patch is the most common turf disease occurring in the southeastern United States. Al-

though St. Augustine and zoysiagrass are the most susceptible cultivars, even the more tolerant centipede, bermudagrass and ryegrass are frequently damaged by this fungus.

Brown patch is favored by warm, moist weather when nighttime temperatures are relatively cool. Therefore, in certain areas of the south, brown patch can and does occur any month of the year.

In the upper regions of the south the most favorable conditions for disease development usually occur from late April through mid-October.

Symptoms of brown patch on warm season grasses are some-

## Southern Turf Diseases

by Don Blasingame, extension plant pathologist, Mississippi State University



what different from the symptoms that are described for cool season grasses. Even though the grass is usually killed in a circular pattern, many times the characteristic smoke ring is not seen on southern turf. Also, under certain environmental conditions the fungus may cause a gradual thinning of the turf over a rather large area instead of killing in a circular pattern.

There are several factors that tend to make the grass more susceptible to brown patch. One of these is the excessive application of nitrogen fertilizer. This promotes a lush growth of grass that is readily attacked. Another condition that leads to severe disease development is watering late in the afternoon and allowing the grass to remain wet for long periods of time. The excessive accumulation of thatch creates a most favorable environment for development of brown patch and many other diseases that are caused by fungi.

Fungicides are best used on a preventive schedule. Once symptoms develop control can be difficult.

### Dollar spot

Dollar spot is a fungus disease common in the southeast on many species of grasses, particularly on bentgrass, bermudagrass, zoysiagrass, and annual and perennial bluegrasses.

Dollar spot is a disease in which symptoms are different on certain warm season grasses than those noted on cool season grasses.

On the finer textured grasses, such as bermudagrass and zoysiagrass, the grasses are killed in small patches two to three inches in diameter. Under severe conditions these patches may coalesce so that the turf has a mottled appearance. Blades of grass at

### Spring dead spot attacks

bermudagrass and zoysiagrass while dormant, becoming evident during spring greenup.



**Brown patch** is the most common turf disease in the Southeast. It affects primarily St. Augustine and zoysiagrass in the South and bentgrass and perennial ryegrasses in the North. It is prevalent during warm, moist days with cool nights.

the outer edges of the infected area develop tan spots with reddish-brown margins.

On the coarser warm-season grasses the turf is killed in larger patches that may range up to a foot in diameter.

Dollar spot is prevalent during periods of mild weather during the spring and fall months. Unlike brown patch, dollar spot is retarded by high levels of nitrogen fertilizer.

Because excess nitrogen tends to favor the development of brown patch and other diseases, discretion must be used in applying nitrogen. Watering should be performed only in the early morning so the foliage can dry quickly. Fungicides can be used to help bring the diseases under control once it gets established.

### Leaf spots

There are a number of fungi that cause leaf spots on many of the southern grasses. Regardless of the causal agent, these leaf spots on southern grasses are similar

and so are the control measures.

**Helminthosporium leaf spots (Melting Out)** Bermudagrass and ryegrass are most severely affected by helminthosporium infections, although the fungus can survive on centipedegrass and St. Augustine.

Infection can occur over a wide range of temperature but usually is more severe when temperatures are 70° to 95°. Milder temperatures in the spring and fall are more favorable for infection.

Helminthosporium causes small, dark colored spots or flecks on the leaves and sheaths. Leaf spots are usually more numerous near the collar of the leaf blades. Severely affected leaves wither and die and the turf frequently becomes brown and thin.

Symptoms on overseeded ryegrass are altogether different. Although leaf spots may occur, this same helminthosporium can cause severe crown rot. This causes a yellowing and discoloration of the grass and a general

# TURF

thinning of the turf.

Fertilize with adequate levels of nitrogen and potassium if helminthosporium diseases become a problem. With careful management, apply fungicides recommended for helminthosporium blight control.

**Gray leaf spots** St. Augustine is the primary host for gray leaf spot. The disease occurs throughout the lower south during warm, humid weather.

Spots on the leaf blades are the most visible symptom but sheath and stem lesions also occur. Leaf spots begin as olive green to brown, water-soaked spots as small as a pin head. These enlarge rapidly and form a circular to elongate lesion that are brown to ash colored with purple margins.

The disease occurs during moderate to warm weather accompanied by high relative hu-

midity. Severity of the disease is enhanced by applications of nitrogen fertilizer and is more of a problem in shaded areas where the grass remains wet from dew.

Treatment with a fungicide may become necessary if the disease outbreak is severe and accompanied by prolonged periods of wet favorable weather.

## Rust

*Puccinia* species infect a number of grasses grown in the south, including ryegrass, zoysiagrass, bluegrass, fescue, bermudagrass and St. Augustine. Zoysiagrass and bluegrass are the most often affected grasses.

Susceptibility varies with the variety. Fungus infection is favored by minimum and maximum temperatures of 50° to 70° F. respectively. For this reason, the disease does not usually cause

severe damage over an extended period. It is likely to be more severe in shaded areas during rainy, humid weather. Affected turf will appear unthrifty and begin to thin.

The disease is characterized by the presence of pustules on the leaf blades. These pustules range from bright orange to cinnamon-brown in color depending upon the species of fungus present.

Certain varieties of ryegrass are extremely susceptible to rust and sometimes severe damage can occur. On warm season grasses, zoysiagrass, especially Meyer and Emerald varieties, are most severely affected by rust.

Fertilize to stimulate grass growth, mow on a four to five day schedule and catch clippings. If necessary, a fungicide may be applied to help reduce the amount of disease present.

## SOLO'S JET SET

THE JET SET IS "IN" —  
WE WANT YOU IN TOO!

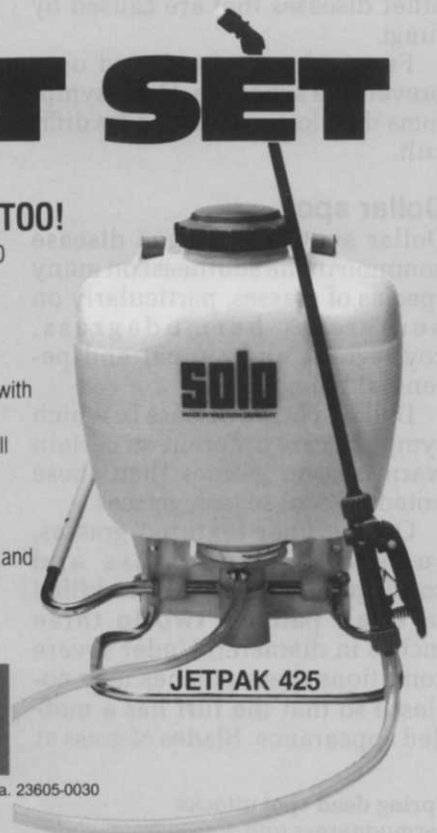
Right now, people all over the country are asking for SOLO quality sprayers, because they are:

- I**Nvaluable for agriculture, horticulture, pest control, sanitary and industrial application, or just around the house and campsite.
- I**Ndifferent to corrosion - made of high-impact plastic with VITON seals.
- I**NDispensable for applying many cleaning solutions, all approved pest control and agri-chemical formulas, including herbicides.
- I**Ncomparable in capabilities and service.

SOLO products, supported by strong marketing programs and co-operative advertising support will boost your sales. Contact us today for detailed information.



HANJET 455



JETPAK 425

# SOLO

SOLO INC., 5100 Chestnut Ave., P.O. Box 5030, Newport News, Va. 23605-0030  
(804) 245-4228 Telex 823-664

Circle No. 135 on Reader Inquiry Card

# TURF

## Spring dead spot

Spring dead spot is a serious disease of bermudagrass in certain parts of the upper Sunbelt. Generally speaking, it is found on bermudagrass or zoysiagrass under high maintenance.

Damage to the turf apparently occurs during the dormant season, and when greenup occurs in the spring, there are areas a few inches to several feet in diameter where the sod is completely dead.

The causal agent for spring dead spot has not been identified. The only control procedures recommended at the present time are good cultural practices and limiting the use of nitrogen fertilizer especially late in the growing season.

Research has shown that fungicides can limit the damage. However, at the present time only

two fungicides are labeled and these may be limited to use in certain states.

## St. Augustine decline

St. Augustine decline (SAD) is caused by a virus. It causes a mosaic-type of chlorosis of the leaf blades that may resemble a nutrient deficiency or mite feeding. Evidently there are several strains of the virus since there is a great range in damage to St. Augustine.

To this point, the disease has only been recorded in Arkansas, Texas, Louisiana and Mississippi. There are no chemicals available for the control of this disease.

There are several varieties of St. Augustine that are resistant to the virus and can be used in areas where the disease is a potential problem. Floratam was the first variety released that has resis-

tance to SAD. It is also resistant to chinch bugs. It has poor cold tolerance and should be used only in the lower south. Seville is resistant to SAD and is more shade tolerant than common St. Augustine. Raleigh is resistant to SAD and has good winter hardiness.

## Downy mildew of St. Augustine

Downy mildew of St. Augustine was first described on common St. Augustine in Texas in 1969. Since then the disease has spread and has been identified in Arkansas, Louisiana and Mississippi.

Downy mildew appears as white, raised, linear streaks that develop parallel to the mid-veins of the leaf. Streaks appear in the spring and remain throughout the summer, giving the leaves a yellow appearance with some death toward the tips. Severe dis-



## Systemic Seed Treatment Fungicide controls *Pythium* up to 21 days.

Apron® and Subdue® are Reg. T.M.'s of CIBA-GEIGY

Apron®, a systemic seed treatment fungicide from Ciba-Geigy, works on contact to control *Pythium* on the outer surface of turfgrass seed.

As the seed starts to germinate, Apron is systemically translocated throughout the entire growing seedling. This assures you of maximum emergence and seedling establishment for up to 21 days after planting.

Because Apron is a systemic fungicide, you get better and longer *Pythium* control. And surprisingly, it costs no more than the ordinary seed treatment being used today.

After seedlings are established, you should follow up with fungicide treatments of Subdue® to maintain *Pythium* control in turf.

Call your seed distributor and ask for Apron treated turfgrass seed for this year's overseeding.

**Gustafson**

17400 Dallas North Parkway  
Dallas, Texas 75252  
(214) 931-8899

ease occurs in grass that is grown in flood plains or poorly drained areas.

The white-streak symptom in early stages is easily confused with the virus disease, St. Augustine decline. However, the virus symptoms are more yellow in color and more mottled than striped.

Downy mildew has been difficult to control with most common turf fungicides. The cultural practices recommended for control are to maintain good drainage so that no free water stands on areas where St. Augustine is grown.

### Fairy rings

Fairy rings generally appear in lawns and other turf areas as circles or arcs of dark-green, fast-growing grass during the spring and early summer. A ring of thin dead grass may develop on one or

both sides of this circle.

The disease is caused by one of several soil-inhabiting fungi that commonly produce mushrooms. Mushrooms that sometimes appear in the ring are the fruiting bodies of these fungi. Stimulation of the grass is due to the release of nutrients from the organic breakdown of the thatch by the growing fungus.

It is difficult to control fairy ring. Two general approaches may be considered. The first is removal. Remove infected grass and soil to a depth of 12 inches or more in a band several feet on each side of the affected area and replace with clean soil.

Another approach is to suppress the disease. For low maintenance grass areas, increase the water and fertilization program to stimulate the declining grass inside the ring.

Symptoms of the ring can be masked by pumping large quantities of water into this area. There are no chemicals labeled for the control of this disease.

### Slime molds

Slime molds are a group of organisms which create considerable concern among gardeners and those interested in maintaining a good quality turf. These molds cover above-ground plant parts with a dusty gray-black or dirty yellow mass.

When you look closely at this growth you see small round balls scattered over the plant. If you rub these between your fingers a sooty-like powder emerges. This sooty-like powder is the spores of the fungus.

Slime molds normally live in the soil where they feed on decaying organic matter. When the



Versatile. All-hydraulic. Air cooled (gas or LP) or electric.

## Economical Sweeping

The Tennant 240 is a popular, high speed, easy-to-maintain sweeper. All-hydraulic; no belts, chains or transmission. Sweeps a 53-in. path at speeds to 10 mph. Picks up fine sand and bulky debris in 1 pass. Vacuum/filter controls dust.

**High-Low dump option.** Hopper empties into 5-ft container or into floor-level compactor.

**Converts to scrubber in 15 min.** using optional attachment. Lease and time sales plans available. For free brochure, write: Tennant Co., 701 No. Lilac Dr., Minneapolis, Minnesota 55422.



**TENNANT MAINTENANCE SYSTEMS**  
sweepers • scrubbers • scarifiers • floor coatings

Circle No. 138 on Reader Inquiry Card

## BEAUTY LAWN ZOYSIA SOD

(Meyer Z-52) for your  
FAIRWAYS, ATHLETIC FIELDS, PARKS

- Zoysia saves big on water, fertilizer, insecticides, fungicides, mowing.
- Zoysia provides an outstanding playing surface for fairways.
- Stands up to hard usage.
- Truck-trailer shipping throughout U.S.

### ROW PLANTING SERVICE

100 Mile Radius of Louisville, Ky.



Jay and John Frick  
The Zoysia Men



The Solution to Old Problems

**BEAUTY LAWN ZOYSIA**

603 Union Road • Lebanon, Ohio 45036  
Near Cincinnati, Ohio (513) 424-2052

Our 35th Year

Circle No. 102 on Reader Inquiry Card

JUNE 1984/WEEDS TREES & TURF 43

# TURF

slime mold is ready to reproduce, it grows up on to the grass blades so that the spores may be spread great distances. Its only purpose of selecting plant parts above the soil line is to distribute the spores over a further distance than it would be able to from the soil surface.

Slime molds do not feed on living plants. They only use them for support during reproduction.

Slime molds occur during wet weather throughout the spring, summer and fall. They disappear rapidly as soon as it becomes dry and chemical control is usually not necessary.

## Pythium blight

Pythium blight can be a devastating disease on overseeded ryegrasses; however, bermudagrass and the other warm-season grasses can be affected to a lesser degree.

An abundance of moisture is required for pythium blight development. In addition, the disease is favored by warm temperatures.

Affected grass is killed rapidly in spots two to four inches in diameter. These spots may develop into streaks so that large areas of turf are damaged.

During early stages of development the affected grass appears wilted and greasy. At times the affected turf spots may have a cottony appearance due to the abundant growth of the fungus. For this reason the disease is frequently referred to as cottony blight.

Certain species of pythium can also cause root rot on turfgrasses. Due to the restricted root function the plants become chlorotic and the turf begins to thin.

On overseeded grasses the disease can be limited by using treated seed and delaying the overseeding until as late as possible during the fall. Water as little as possible during periods of favorable disease activity. The perennial ryegrasses are not as susceptible as annual. Under severe disease pressure chemical control may be required.

WT&T

# DIRECTORY

## Turf Fungicide Directory

Common Name	Brand Name	Company	Circle No.
anilazine	Dymec 50	Gordon	201
	Dyrene	Mobay	202
	Ortho Dyrene	Ortho/Chevron	203
	Proturf Fung. III	Scotts	204
benomyl	Proturf Fung. DSB	Scotts	205
	Tersan 1991	Du Pont	206
cadmium	Caddy	Cleary	207
	Cadtrete	Cleary	208
	Cadminate	Mallinckrodt	209
	Kromad	Mallinckrodt	210
chloroneb	Proturf Fung. II	Scotts	211
	Teremec SP	Gordons	212
	Terreneb SP	Kincaid	241
chlorothalonil	Daconil 2787	SDS Biotech	213
	Proturf 10IV	Scotts	214
cycloheximide	Acti-dione TGF	Tuco/Upjohn	215
ethazol	Koban	Mallinckrodt	216
	Terrazole	Olin	217
fenarimol	Rubigan	Elanco	218
iprodione	Chipco 26019	Rhone Poulenc	219
	Proturf Fung. 6	Scotts	220
mancozeb	Fore	Rohm and Haas	221
	Formec 80	Gordons	222
maneb	Tersan LSR	Du Pont	223
mercuries	Calo-Clor	Mallinckrodt	224
	Calo-Gran	Mallinckrodt	225
metalaxyl	Subdue	Ciba Geigy	226
PCNB	Terraclor 75	Olin	227
PMA(PMAS)	PMA, PMAS	Cleary	228
PMA plus Thiram	Proturf Broad Spectrum Fung.	Scotts	229
propamocarb	Banol	Tuco/Upjohn	230
thiophanate	Cleary's 3336	Cleary	231
thiophanate methy	Fungo 50	Mallinckrodt	232
	Proturf Systemic	Scotts	233
thiram	Chipco Thiram 75	Rhone Poulenc	234
	Spotrete	Cleary	235
thiophanate plus thiram	Bromosan	Cleary	236
thiophanate-methyl plus maneb	Duosan	Mallinckrodt	237
triadimefon	Bayleton	Mobay	238
	Proturf Fung. 7	Scotts	239
vinclozolin	Vorlan	Mallinckrodt	240