

Diseases of Tall Fescue Lawns

Tall fescue, a bunch-type cool-season turfgrass, is widely used in some regions of the Southeast in residential and commercial landscapes. In Alabama, this turfgrass is best adapted to areas north of the Birmingham metropolitan area. The biggest advantages of tall fescue over warm-season turfgrasses, such as bermudagrass and zoysiagrass, are superior shade tolerance and deep green winter color. Also, an attractive tall fescue lawn can easily be established from seed or, if desired, from sod.

High moisture requirements, poor heat tolerance, and the coarse leaf texture of Kentucky 31 and similar forage-type selections have in the past been among the main drawbacks of tall fescue. Recently, breeding programs have focused on identifying heat and drought-tolerant selections, which produce a higher quality turf. As a result, a number of improved tall fescue cultivars with a finer leaf texture

and improved heat and drought tolerances have been released.

In Alabama, diseases also play a major role in limiting the range of tall fescue. All cool-season turfgrasses, including tall fescue, are under severe stress during Alabama's hot, muggy summers and are quite sensitive to damaging diseases such as brown patch, gray leaf spot, and white patch. Regardless of the location in Alabama, disease onset and spread is particularly rapid when high day and night temperatures are combined with frequent rain showers. In extreme cases, an entire tall fescue lawn may be heavily damaged or destroyed by one of the above diseases. Other diseases known to heavily damage tall fescue lawns and sod include net blotch and Pythium blight.

Brown Patch

Brown patch, which is caused by the fungus *Rhizoctonia solani*, is among the most common and destructive diseases of tall fescue. The combination of several days of rain and heavy cloud cover along with day temperatures above 80 degrees F (28 degrees C) favor rapid brown patch development at anytime from late spring through early fall. Excessive nitrogen fertilization, particularly during the late spring and summer, greatly increases the risk of disease. On the other hand, dry weather will suppress fungus activity and prevent disease.

Symptoms

Circular off-color to brown patches ranging from 1 to 3 feet in diameter are the most noticeable symptom of brown patch on tall fescue (Figure 1).



Figure 1. Brown Patch on Kentucky 31 tall fescue (courtesy Alan Windham, University of Tennessee)

Typically, these patches first appear during or immediately after one or more days of favorable weather conditions. Often, the circular patches will grow together to form large irregular areas of brown, blighted turf. On higher-cut tall fescue lawns, individual diseased plants usually wilt and collapse, thereby giving the patches a distinctive sunken appearance. Since individual plants often succumb to attack by *R. solani*, little if any recovery of the blighted patches of tall fescue turf will occur.

Leaves and leaf sheaths invaded by this fungus first become water-soaked, then wilt, and finally turn brown. Often, these water-soaked spots appear first along the leaf margin and then quickly expand until the

leaf sheath and crown is invaded and destroyed. The almost colorless hyphal strands of *R. solani* with its characteristic right-angled branching often can be seen growing on the surface of the freshly blighted leaves and leaf sheath with a hand lens.

Control

The occurrence and severity of brown patch is closely tied both to weather patterns as well as to maintenance practices, nitrogen fertility status, watering patterns, and cultivar selection. Although no control procedures will give complete protection from brown patch, a combination of good management and cultivar selection will greatly reduce the risk of a disease outbreak or minimize damage to a lawn.

Establishment of a tall fescue cultivar or preferably a commercial blend of several cultivars will help minimize the damage caused by brown patch. Planting a tall fescue blend is usually preferred due to improved disease and insect tolerance as well as better adaptability to a range of growing conditions and management inputs. In field trials in the Southeast, Shortstop II, Gazelle, Coronado, Eldorado, Bonsai, and Tomahawk have proven to be among the tall fescue cultivars most sensitive to this disease. Blends containing two or more of the above cultivars should be avoided. Some cultivars that have generally suffered less brown patch damage in field trials include Rembrandt, Jaguar 3, Wolfpack, Renegade, Mustang II, and Tar Heel. Be advised that these tall fescue cultivars are not necessarily resistant to other potentially damaging diseases. Also, early fall is the preferred time to establish a tall fescue lawn and to avoid stand losses due to brown patch.

The rate and timing of applications of a nitrogen fertilizer also has a significant impact on the severity of brown patch on tall fescue. According to current fertilization guidelines, approximately 4 to 5 pounds of actual nitrogen per 1000 square feet are needed each year in order to maintain a healthy tall fescue turf. To minimize the risk of disease, *fast-release* nitrogen fertilizers (i.e., ammonium nitrate, ammonium sulfate, urea, etc.) must not be applied to a tall fescue lawn anytime from June through August. During the remainder of the year, apply approximately 1 pound of actual nitrogen as a fast-release nitrogen source per 1000 square feet of turf in October, November, and January, as well as 0.5 pound per 1000 square feet in March, April, and possibly in May. The best means of maintaining good color through the summer months would be the application of a *slow-release* or organic nitrogen fertilizer in early to midspring. Finally, maintain phosphorus and potash (potassium) as well as soil pH according to the results of a soil fertility assay. See Extension publication ANR-231, "Tall Fescue Lawns," and ANR-239, "Home Lawn Maintenance," for more information concerning the rate and timing of fertilizer applications.

Free moisture is essential for the growth of the brown patch fungus through the turf canopy and for infection. Although rain, heavy dews, and/or persistent fogs play a major role in disease development, excessive watering, particularly during the hot summer months, can also trigger outbreaks of brown patch. Typically, a tall fescue lawn needs from 1 to 2 inches of water per week from rainfall or irrigation to maintain good turf growth. Naturally, more water will be needed during the

summer months to maintain turf quality than at any other time of the year. Preferably, a tall fescue lawn should be watered every 5 to 7 days. Rainfall totals from the previous week must be considered when determining the amount of water to apply to a lawn.

Daily watering will promote disease problems as well as reduced drought tolerance. The best time of the day to irrigate a lawn is between 2 a.m. and 6 a.m. or during the late morning or early afternoon. Watering in the late afternoon or early evening, which causes the foliage to remain wet until mid-morning or later in shaded areas, also increases the risk of disease. To speed evaporation of free water from the turf foliage, prune nearby trees and shrubs to reduce shading and improve air movement.

Current recommendations specify that tall fescue lawns be maintained at a height of about 2.5 inches. Research has recently shown that brown patch severity may increase at mowing heights an inch or two above or below the above-recommended mowing height. See Extension publications ANR-231, "Tall Fescue Lawns," and ANR-239, "Home Lawn Maintenance," for additional information concerning mowing height and frequency. Clippings should be removed for several weeks from tall fescue lawns recently damaged by brown patch. Yearly mechanical dethatching or core aeration is required to prevent the buildup of fungus-harboring thatch on an intensively managed tall fescue lawn.

Timely fungicide sprays can protect tall fescue lawns from brown patch. For best results, a preventative fungicide spray program should begin when temperatures and rainfall patterns favor fungus activity and the turf has or soon will be stressed by

high day and night temperatures. Lawns with a history of brown patch are most likely to suffer some damage, when conditions are favorable, every year. Since disease onset on most tall fescue lawns is usually restricted to the summer months, fungicide sprays can be limited to the months of June through September. Due to low moisture levels, protective sprays usually are not needed on nonirrigated, drought-stressed tall fescue lawns. The time interval between fungicide sprays, which usually varies from 10 to 21 days, is dependent on the fungicide chosen and weather conditions. When brown patch is most likely to strike or fresh damage is seen, shorten the interval between sprays and apply the highest rate on the label to the diseased turf. Always apply fungicides after a lawn or sod has been mowed, and allow fungicide residues to dry on the foliage before watering. See Table 1 for a list of fungicides recommended for the control of

brown patch on tall fescue in residential and commercial landscapes. A complete listing of fungicides can also be found in Extension publication ANR-500B, *Alabama Pest Management Handbook—Volume 2*.

Net Blotch

Net blotch is a common and occasionally damaging disease on tall fescue lawns, pastures, and sod fields. Under favorable weather conditions significant stand thinning, particularly in newly seeded lawns, may occur. Severity of net blotch is governed by the cultivar of tall fescue grown, spring and fall weather patterns, and management practices. Typically, disease development occurs in the spring and fall when heavy clouds and showers alternate with several days of mild dry weather. On newly seeded sod fields, serious net blotch-related injury has been seen in December and January.

Symptoms

Small brown spots with yellow margins are the first symptoms of infection of the leaves by the causal fungus *Drechslera dictyoides*. Later, these spots merge to form a netlike pattern of thin, threadlike brown lines on the leaves, hence the name net blotch. Diseased leaves usually turn yellow and gradually wither from the leaf tip down toward the base of the leaf. Severely damaged turf has a yellowish color and is noticeably thinned. Once the fungus is established, this disease will usually cause some damage to the target lawn virtually every year.

Control

Establishment of a disease-resistant cultivar or blend of cultivars is an effective control strategy for controlling net blotch on tall fescue. When renovating or reseeding a net blotch-damaged lawn, again choose a disease resistant selection. Among commonly grown tall fescue selections, Rebel II has proven highly susceptible to net blotch. Also susceptible to net blotch are the cultivars Monarch, Twilight, Tomahawk, Montauk, Silverado, and Olympic II. Excessive rates of nitrogen fertilizers may also increase the sensitivity of tall fescue to net blotch. To minimize the impact of nitrogen fertility on this disease, make frequent, light applications of a fast-release nitrogen fertilizer beginning in October until May or use a slow-release nitrogen source. Refer to the Brown Patch section of this publication for specific nitrogen fertilization recommendations or Extension publication ANR-231, "Tall Fescue Lawns." In addition, maintaining an optimum potash level may help minimize net blotch damage to tall fescue sod and lawns.

Table 1. Selected Fungicides Registered for the Control of Brown Patch on Residential and Commercial Lawns

Fungicide	Rate per 1000 sq. ft.	Comments
mancozeb		
Dithane T/O	4 oz.	Apply at 7- to 14-day intervals in 3 to of water per 1000 sq. ft. when disease threatens. Use higher rate at shortest interval when disease is severe.
Fore 80W	4 oz. 5 gal.	
myclobutanil		
Eagle 40W	0.6 oz.	Apply at 14- to 21-day intervals in 2 to 3 gal. of water per 1000 sq. ft.
propiconazole		
Banner Maxx	2-4 fl. oz.	Apply in 2 to 5 gal. of water per 1000 sq. ft. before symptoms are seen. Repeat at 14- to 28-day intervals.
thiophanate-methyl		
Clearys 3336 50W	2 oz.	Apply at 5- to 14-day intervals in 5 gal. of water per 1000 sq. ft. Shorten interval when disease is present.
triadimefon		
Bayleton T/O	1-2 oz.	Apply at 15- to 30-day intervals in 2 to 4 gal. of water per 1000 sq. ft. Use higher rate and shorter interval when disease appears.

Other management practices which may help check disease spread include maintaining recommended mowing heights, removing clippings when symptoms are seen, yearly verticutting or core aeration, and timely watering during periods of dry weather. As is the case with brown patch control, irrigate tall fescue lawns between 2 a.m. and 6 a.m. or during midday. Refer to Extension publications ANR-231, "Tall Fescue Lawns," and ANR-239, "Lawn Maintenance in Alabama," for additional information concerning fertilization, watering, and mowing practices for tall fescue.

Generally, fungicide treatments are suggested only on those lawns or sod fields previously damaged by net blotch. Such treatments are usually most effective if preventative treatments are started in the fall or spring, when symptoms first appear and weather conditions favor disease onset. Continue fungicide applications as needed. Selected fungicides, application rates, and spray schedules are listed in Table 2. A complete listing of fungicides registered for net blotch control can also be found in Extension publication ANR-500B, *Alabama Pest Management Handbook—Volume 2*.

Gray Leaf Spot

Gray leaf spot, which is a widespread disease of St. Augustinegrass, has recently emerged as a destructive disease on perennial ryegrass and tall fescue. In recent years, significant disease-related damage has been noted particularly on residential tall fescue lawns in the Mid-Atlantic States. A serious outbreak of gray leaf spot was also seen during the summer of 1999 in Alabama on Rebel II tall fescue. A combination of frequent showers, high humidity, and typical summer temperatures favors disease development and spread. Excess nitrogen fertility levels and overwatering may also increase the susceptibility of tall fescue to attack by the causal fungus *Pyricularia grisea*.

Symptoms

Small, round gray brown spots appear along the leaves and to a lesser extent the leaf sheaths. As these spots increase in size, their centers turn light brown to gray while the margins are purple to brown in color. At times, a yellow border or halo may surround each spot (Figure 2). Although the spots may appear anywhere along the leaf



Figure 2. Individual leaf spots on tall fescue have a tan center and gray to brown margin

surface, they usually are concentrated along the leaf midvein. Heavily spotted leaves yellow, then wither, and die. Diseased stands of tall fescue may be severely thinned by gray leaf spot (Figure 3). On severely damaged stands of perennial ryegrass and possibly tall fescue, irregular patches of yellowed or blight turf, often several yards in diameter, may also be seen.

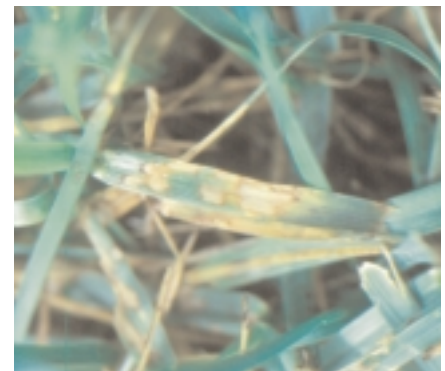


Figure 3. Leaf dieback and stand-thinning on Rebel II tall fescue is due to Gray Leaf Spot

Table 2. Selected Fungicides Registered for Control of Net Blotch on Residential and Commercial Lawns

Fungicide	Rate per 1000 sq. ft.	Comments
azoxystrobin Heritage 50DG	0.2 to 0.4 oz.	Apply every 14 to 28 days when conditions favor disease. Use highest rate at shortest interval when disease is present.
mancozeb Dithane T/O Fore 80W	4 oz. 4 oz.	Apply at 7- to 14-day intervals in 3 to 5 gal. of water per 1000 sq. ft. when disease threatens. Use highest rate at shortest interval when disease is severe.
myclobutanil Eagle 40W	0.6 oz.	Apply at 14- to 21-day intervals in 2 to 3 gal. of water per 1000 sq. ft.

Control

As is the case with brown patch and net blotch, cultivars of tall fescue differ significantly in their sensitivity to gray leaf spot. Establishment or reseedling an existing lawn with a disease resistant cultivar will help reduce stand loss due to gray leaf spot. Tall fescue selections with the best resistance to this disease include Coronado, Coyote,

Gazelle, Apache II, Durango, and Vegas. In field trials, Kentucky 31, Tar Heel, Thoroughbred, Maverick, Olympic, Rebel, Austin, Aztec, Mirage, Kitty Hawk, Pacer, Falcon II, and Fine Lawn have proven very sensitive to attack by the gray leaf spot fungus *P. grisea*.

As previously mentioned under the Brown Patch and Net Blotch sections, light, frequent applications of a fast-release nitrogen fertilizer or use of a slow-release nitrogen source will help slow disease spread. Also, fast-release nitrogen fertilizers should not be applied during the summer months to a tall fescue lawn. When this disease is active, collect and discard or compost turf clippings. Finally, water a tall fescue lawn at a time of day when the foliage will quickly dry. Refer to Extension publications ANR-231, "Tall Fescue Lawns," and ANR-239, "Lawn Maintenance in Alabama," for additional information concerning fertilization, watering, and mowing practices for tall fescue.

Fungicides, which can give effective control of gray leaf spot, should be used on tall fescue lawns previously damaged by this disease. Applications should be started in late spring to early summer when weather patterns favor disease and before symptoms

appear. Repeat fungicide sprays every 7 to 14 days as needed to control the disease. Always mow and irrigate a lawn before applying fungicides. Fungicides recommended for gray leaf spot control are listed in Table 3 and Extension publication ANR-500B, *Alabama Pest Management Handbook—Volume 2*.

White Patch

White patch is a little known but widespread disease across the Southeast of low maintenance tall fescue lawns. This disease is usually associated with low rather than high nitrogen fertility levels. Like brown patch and gray leaf spot, white patch is most commonly seen during the summer and early fall. Daytime temperatures above 85 degrees F and night temperatures higher than 70 degrees F greatly increase the risk of disease onset. White patch tends to damage newly seeded or immature tall fescue lawns, particularly where excessive seeding rates have resulted in a very dense stand.

Symptoms

The first noticeable symptom of white patch, which can easily be confused with that of brown patch, is circular patches of white, blighted turf approximately 3 to 6 inches in diameter (Figure 4). The slightly sunken patches often enlarge to a

diameter of 8 to 12 inches and may merge to form large, irregular areas of damaged turf. Bleaching of the leaf begins at its tip and progresses toward the junction of the leaf and its leaf sheath. A row of three or more tiny gilled mushrooms, usually almost white to light tan in color, will appear along the length of the blighted leaves. Since the



Figure 4. White Patch on a tall fescue lawn. Symptoms are very similar to those of brown patch

causal fungus *Melanotus phillipsii* usually invades only the leaves and not the crown, most tall fescue lawns will begin to recover when weather conditions are more conducive for turf growth (Figure 5).



Figure 5. The characteristic mushrooms of the causal fungus of white patch *Melanotus phillipsii* on dead tall fescue leaf

Table 3. Selected Fungicides Registered for the Control of Gray Leaf Spot on Residential and Commercial Tall Fescue Lawns

Fungicide	Rate per 1000 sq. ft.	Comments
azoxystrobin Heritage 50DG	0.2 to 0.4 oz.	Apply every 14 to 28 days when conditions favor disease. Use highest rate at shortest interval when disease is present.
thiophanate-methyl Cleary's 3336 50W	2 oz.	Apply at 5- to 14-day intervals in 5 gal. of water per 1000 sq. ft. Shorten interval when disease is present.

Control

When establishing a new tall fescue lawn or renovating an existing lawn, uniformly sow the correct rate of seed in early fall. Avoid planting tall fescue in the spring. To help suppress disease without increasing the risk of brown patch and gray leaf spot, apply a slow-release or organic fertilizer in the spring. In addition, irrigate a tall fescue lawn during the summer as needed. Currently, no fungicides are registered for the control of white patch.

Pythium Blight

Pythium blight, which is also known as cottony blight or greasy spot, occurs sporadically on tall fescue lawns and sod fields. Lush, heavily fertilized tall fescue lawns are the favored targets of Pythium blight. Several days of overcast, wet weather favor disease development. Pythium blight is a threat almost any time during the year when night temperatures are above 50 degrees F and moisture requirements are met. Other cool-season lawn grasses, particularly fine fescue and perennial ryegrass, are also susceptible to attack by *Pythium* fungi.

Symptoms

The early symptoms of Pythium blight include small, circular water-soaked spots, which are several inches in diameter. At first, these spots appear greasy or slimy. As these patches dry, the blighted leaves turn tan to brown (Figure 6). On tall fescue lawns, the blighted patches of turf may reach a diameter of 1 foot and are sunken due to the collapse of the blighted shoots. Often, these blighted patches merge to form large irregular areas of dead turf.



Figure 6. Pythium blight on turf-type tall fescue sod. Note the cottony white growth of the *Pythium* fungus around the margin of the blighted patch of turf

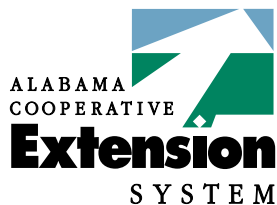
Control

The risk of disease can be greatly reduced by fertilizing according to the results of a soil fertility assay, making frequent, light applications of fast-release nitrogen source from the fall to the spring. Use a slow-release nitrogen fertilizer and avoid applying high rates of nitrogen at anytime during the growing season. In addition, tall fescue lawns and sod should be irrigated at a time of day when the foliage will quickly dry. Overseeding an established lawn as well as sowing or sodding a new lawn should be delayed until in the fall when night temperatures are cool. Finally, sow only quality seed treated with a fungicide seed dressing such as Apron or Anchor. See Extension publication ANR-594, "Controlling Pythium Blight on Overseeded and Established Turf," for more information on the influence of management practices and weather patterns on the development of this disease.

Preventative fungicide treatments are optional only on an intensively managed tall fescue lawn. The most effective fungicides will usually give about 2 to 3 weeks of protection from Pythium blight. Typically, treatments on residential and commercial lawns should be applied from the late spring through early fall, when the risk of disease is highest. On heavily fertilized sod fields, particularly on newly emerged seedlings, fungicide treatments may be required whenever weather patterns favor disease development. Selected fungicides recommended for the control of Pythium blight are listed in Table 4, as well as in Extension publications ANR-500B, *Alabama Pest Management Handbook—Volume 2*, and ANR-594, "Controlling Pythium Blight on Overseeded and Established Turf."

Table 4. Selected Fungicides Registered for the Control of Pythium Blight

Fungicide	Rate per 1000 sq. ft.	Comments
azoxystrobin Heritage 50DG	0.2 to 0.4 oz.	Apply every 14 to 28 days when conditions favor disease. Use highest rate at shortest interval when disease is present.
etridiazole Koban 30W	2-4.5 oz.	Apply at 5- to 10-day intervals in 5 gal. per 1000 sq. ft. when conditions favor disease.
fosetyl-Al Aliette T/O	4-8 oz.	Apply when conditions favor disease every 14 to 21 days in 1 to 5 gal. of water per 1000 sq. ft. Use higher rate and/or shorter interval when disease is present.
metalaxyl Subdue Maxx	0.5-1.0 fl oz	Apply at 10- to 21-day intervals in 3 to 5 gal. of water per 1000 sq. ft. when conditions favor disease. Use higher rate and/or shorter interval when disease is severe. Tank-mix with Fore/Dithane T/O at 8 oz. per 1000 sq. ft. to improve performance.



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