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HORTICULTURE EDUCATION

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Brown Patch and Powdery Mildew Favored by Humid Weather
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Why are spots appearing on my grass leaf blades? Why are there white, dusty looking spots on squash and cucumber leaves? High humidity and heat favor the development of brown patch disease in tall fescue lawns and powdery mildew on squash and cucumbers.

Brown patch disease is caused by *Rhizoctonia* fungi, which is very common in our soils. Humid weather, combined with daytime highs above 82 degrees F and nighttime lows above 60 degrees F, create conditions that favor disease activity on fescue lawns, which is a cool season grass.

When high temperatures become stressful for tall fescue, the brown patch fungus infects the leaf blades and causes spots. These irregular spots are uniquely olive-green when fresh, and tan when dried, surrounded by a thin, dark brown border. The border still shows the outline on an old spot even though the entire leaf blade may have died.

Affected areas in the lawn develop as a jagged circle, varying in size from 6 inches to 5 feet or more. The affected area may lose the circular appearance and become irregular in shape as disease progresses.

In an established lawn, fungicide sprays are not recommended to control brown patch. Even if an outbreak occurs, crowns and roots of established plants usually survive, and the infected areas of turf begin to recover when cooler weather arrives. An established, well-managed lawn usually recovers without fungicide applications. Fungicide applications by a professional to control brown patch may be considered if the lawn was newly seeded and established last fall or spring.

Using good cultural practices help manage brown patch. Research at the University of Kentucky and elsewhere shows that the disease in tall fescue is worse when high levels of nitrogen fertilizer, especially during spring and summer, have been applied. It is best to apply fertilizer to tall fescue in fall and early winter rather than spring or summer. Fall fertilization increases overall root growth and reduces the susceptibility of the grass to brown patch, as well as several other diseases. Nitrogen fertilization, including slow release forms, does not cure summertime outbreaks of brown patch; it actually makes the disease worse.

Research also shows that raising the mowing height above 2.5 to 3 inches intensifies the disease. A taller mowing height reduces air circulation among the leaf blades. Poor air circulation leads to conditions favorable for greater fungal growth and disease spread during humid weather. Mow regularly to promote air circulation and rapid drying of the turf, making the lawn environment less favorable for fungal growth. To avoid stressing the grass, mow often enough that no more than

one-third to one-half of the leaf length is removed at any one mowing. Make sure the mower blade is sharp. A dull blade shreds the leaves, creating an ideal site for infection.

If the lawn is irrigated, it should be done in early morning so that the leaves dry quickly. This also washes off the dew, which is rich in nutrients favorable for fungal growth. Irrigating in late afternoon or evening allows the grass leaves to remain wet from the time of watering until several hours past sunset. This lengthy period of wetness gives the fungus a long time to grow and infect more plants.

When irrigation is necessary, wet the soil to a depth of at least 4 inches to promote deep rooting. Check the watering depth by pushing a metal rod or screwdriver into the soil. It will sink easily until it reaches dry soil. Avoid frequent, light waterings, which encourage the grass to develop a shallow root system and provide the surface moisture *Rizoctonia* needs to infect the leaves.

When seeding or renovating a lawn, avoid using excessive seeding rates since overcrowding can aggravate an outbreak of brown patch. Only apply 6 pounds of tall fescue seed per 1000 square feet when establishing a new lawn.

The combination of a high mowing height with high nitrogen fertility during the summer and frequent irrigation usually leads to serious problems with brown patch.

In the vegetable garden, the leaves of squash and cucumbers may look like someone sprinkled a white powdery substance over the leaves. The powdery mildew disease only needs moisture on the leaves, like dew, to develop with high temperatures.

To manage powdery mildew, use good management practices, including adequate fertility and irrigation management with watering early in the morning if irrigating overhead. With powdery mildew, removal of heavily affected foliage, assuming the entire plant is not covered, can remove a substantial amount of spores that can infect other leaves. A vegetable fungicide that contains chlorothalonil or fixed copper may be used according to the label.

With all fungicides, regular applications are critical. During favorable weather, spray every 5-7 days; during drier and hot weather, extend the schedule to every 7-10 days according to the label. Covering upper and lower leaf surfaces is important to achieve good control, as is starting the spray program when symptoms first appear.

For more information about managing brown patch and powdery mildew, contact the Daviess County Cooperative Extension Service at 270-685-8480 or annette.heisdorffer@uky.edu.

Annette's Tip:

Always try to manage plant diseases with cultural practices first. If needed, apply all fungicides according to the label directions; be sure the product is labeled for use on the plant. The label indicates the number of days to wait after spraying before harvesting fruit and how often the product can be applied.

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