

Take All Root Rot: An In-Depth Look

As the temperatures rise in summer, irregular yellowing areas may appear in some lawns. The yellow progresses to brown and an examination of the runners show that they are dead. If you pull up a declining runner you will find that most of the roots are dead and have shriveled and turned dark brown. Healthy roots have a creamy color, and a few may still exist at the ends of the runners. The declining turf often looks drought stressed because of the lack of healthy roots to take up water.



The culprit is often a fungal disease called take-all root rot, also known as take-all patch. I see this disease most often in St. Augustinegrass, because it is the most common turfgrass in our region, but bermudagrass and zoysiagrass are also attacked by this fungus. A turf disease researcher commented that it is difficult to find a St. Augustine lawn where the disease is not present!

That means that many beautiful lawns have the fungus present but are not showing symptoms. Why? Because take-all is an opportunist disease. When an area of turf is weakened because of stress take-all can proliferate in the stress-weakened grass plants and kill them. (Note that yellowing alone doesn't mean your lawn has take-all but may be simply an iron deficiency in the turfgrass.)



Common stressors include hot dry summer weather, shade, soil compaction, high soil pH, and use of some broadleaf post emergent weed control products when temps are above the upper 80's.

Take-all can resemble drought or chinch bug damage, but chinch bug damage often begins by a driveway, sidewalk or curb and spreads outward. To check for chinch bugs, part the turf in an area between healthy and dead grass where the turf is starting to decline and look for the nymphs and adults (which will hide quickly) in the thatch and on the soil surface. Other techniques include vacuuming the spot and examining the contents and the [flotation method](#).



The most important way to manage take-all is by avoiding stress to the lawn. My [Lawn Care Schedule](#) provides the keys to building a dense, healthy lawn. Minimizing thatch buildup by avoiding excessive applications of nitrogen, promote good drainage, watering deeply (wetting the soil to 6" deep) and infrequently, mowing St. Augustine at 2 1/2 to 3 1/2", not using broadleaf herbicide products when the temperature is above the upper 80's, core aeration to remedy compaction and promote turf health, and keeping soil pH in the 6 to 6.5 range when possible (especially near the surface) are all helpful.

The fungicidal active ingredients azoxystrobin, myclobutanil, and propiconazole have shown the most promise in helping to manage take-all. My preference is azoxystrobin, which to my knowledge is only currently available in the home and garden market as Scott's Disease EX (granules). These work best as a

preventative measure, or early in the disease progression before significant root loss and grass decline has occurred. Propiconazole and mycobutanil come in liquid and granular forms. If a liquid fungicide is used, apply it with a hose end applicator in enough volume to thoroughly wet the turf. After applying any of the above ingredients, water them in with 1/3” of irrigation to move them into the soil. Spring and fall are the optimum times for fungicide application (see my [Pest, Disease, & Weed Management Schedule](#)). Once the disease has progressed to the point of yellowing and browning of the turf, it is lacking the roots needed to take up the fungicide, or to take in needed water and nutrients.

Topdressing the lawn with a thin layer of peat moss is another practice that can help sustain a lawn under attack by the take-all fungus. Two research trials here in Texas found that spreading one 3.8 cubic foot



compressed bale of peat moss per 1,000 square feet applied in the spring and fall seasons helped suppress development of take-all and improve turf appearance. At this rate you are applying peat moss about 1/3” deep. Follow this application with 1/3 to 1/2” of irrigation to move the peat down to the runners and soil surface. This is a temporary benefit and should be repeated twice a year as part of an effort to help the grass recover.



Lowering soil pH can also help suppress take-all. Use of acidifying fertilizers over time can help lower the soil pH near the surface. Another option is to spread 3 to 5 pounds of powdered sulfur per 1,000 square feet per year to help gradually acidify the top inch or two of soil and the runner zone. If you apply both sulfur and peat moss, apply the sulfur first. After you apply sulfur, peat moss, or both, apply 1/3 to 1/2” of irrigation to move the product(s) to the soil surface.

If you are applying one of the systemic fungicides previously mentioned above in addition to the peat moss and/or sulfur, apply the fungicide first and water the product into the soil according to label instructions. Then wait a few days to apply the peat moss and/or sulfur and lightly water them in also.

Another action that may be helpful is applying a foliar spray of an iron and manganese supplement to the lawn. Research in Texas evaluating a liquid nitrogen, sulfur, iron, manganese, and zinc product indicated that it was helpful in improving turf appearance for a several weeks after application. In addition to the iron, manganese may also reduce the severity of take-all. Micronutrient products such as Fertilome Chelated Iron & Other Micronutrients, Monterey Iron Combo 1-0-2, or Bonide Liquid Iron Complex may be helpful as a foliar spray to help sustain turfgrass lacking the roots to take up nutrients as it struggles to survive and recover.

Foliar applications of nitrogen, phosphorus, potassium and other nutrients, normally applied as granular fertilizers, may also be helpful because turfgrass with a damaged root system is not able to uptake nutrients efficiently from the soil.

Make foliar nutrient applications in the early morning hours when evaporation is slower and the nutrient solution has the most time to be absorbed by the grass blades. Follow the label instructions when applying any nutrient product to the foliage to avoid damage to the lawn.