

LOUISIANA PLANT PATHOLOGY

DISEASE IDENTIFICATION AND MANAGEMENT SERIES



Large Patch of Warm-season Turfgrasses

Rhizoctonia solani Kühn

Large patch is the most common disease of warm-season turfgrasses in Louisiana. This disease is caused by the soilborne fungus *Rhizoctonia solani*. Although large patch is particularly prevalent on St. Augustine grass (see Figures 1-3) it also occurs on all other warm-season turfgrasses, such as Bermuda grass, centipede grass and zoysia. As the name suggests, the disease is characterized by the development of large, circular or irregularly shaped patches of diseased turf that can become quite extensive if not treated. The large patch fungus does not usually kill the grass but rather causes a rot at the bases of the leaf sheaths that makes the leaves separate readily from the crown of the plant. The result is thinned areas of turf that are readily invaded by weeds. For St. Augustine grass, the turf at the leading edge of the patch that is being attacked by the pathogen typically exhibits a yellowish cast, whereas for centipede grass it exhibits a reddish cast.

Because *R. solani* needs free water on the grass blades to grow, large patch generally develops first in areas surrounded by trees, shrubs and fences that hinder air movement and prevent the grass from drying rapidly after rain or irrigation. Although we usually think of large patch as being a disease of the fall, it also develops quite often in the spring. Optimal conditions for disease development occur when nighttime temperatures range from 60-75 F and daytime temperatures do not exceed 85-90 F. It is important to remember, however, that disease can still develop when conditions are less than optimal.

Fall and spring applications of fungicides can limit damage to the turf until conditions become unfavorable for disease development. The duration of cool fall weather and the frequency of rain will dictate how many fungicide applications are necessary.



Figure 1. Early development of large patch on St. Augustine grass.



Figure 2. Large patch on St. Augustine grass.

We generally recommend at least two fungicide applications a month apart in the fall, the first being in mid- to late September and the second in mid- to late October. However, if conditions remain favorable for disease development into November and December, additional fungicide applications may be necessary. In areas where large patch is known to have occurred previously, an application of a fungicide in mid-March at “green-up” is also advisable. Again, if we experience an extended period of cool, wet weather in the spring, additional fungicide applications may be necessary until environmental conditions become unfavorable for disease development.

When fungicides are being applied to prevent disease in areas where it has not already become established, the use of granular formulations of

fungicides is quite appropriate. Once the fungicide has been applied, however, it must be wetted to activate it. On the other hand, when fungicides are being applied to areas where large patch is active, it is better to use sprayable formulations of fungicides because they will give better coverage. In this case, the material should be allowed to dry before additional water is applied. Systemic fungicides absorbed into the plant should be considered when the turf is still growing actively and prior to periods of rainfall.

Most fungicides registered for use on turfgrasses are labeled for the control of large (or brown) patch, all of which do a good job of controlling this disease when used properly. Please note, however, that chlorothalonil may no longer be used on residential turf!



Figure 3. Large patch on St. Augustine grass.

Visit our website: www.LSUAgCenter.com

Author

Raj Singh, D.P.M. (revised author),
Director, Plant Diagnostic Center
Donald M. Ferrin, Ph.D. (original author)
Extension Plant Pathologist
Department of Plant Pathology and
Crop Physiology

Photo Credits

Raj Singh, D.P.M.
Gordon E. Holcomb, Ph.D.
Professor Emeritus
Department of Plant Pathology and
Crop Physiology

William B. Richardson, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

Pub. 3133 (IM) 07/16 rev.
The LSU AgCenter and LSU provide equal opportunities in programs and employment.