Spring Nitrogen Fertilization Consistently Reduces Large Patch Severity

Large patch is a serious disease of zoysiagrass that limits the use and aesthetics of this important turfgrass species used in lawns, golf courses, and other landscape areas throughout the world. Nitrogen fertility practices, including timing and source, may greatly influence disease development or increase rate of recovery.

In an article recently published in *Crop Science*, University of Missouri researchers built on previous findings to evaluate the effect of nitrogen source on large patch infection in a greenhouse setting and the impact of timing, source, and a single spring tebuconazole application on disease in a field experiment. The timing of nitrogen and a single season fungicide application (tebuconazole) was based on a spring soil temperature threshold (18°C) and compared with a standard summer fertilization schedule.

Nitrogen source did not affect pathogen infection in the greenhouse or disease severity in the field. A spring tebuconazole application reduced overall disease but was not applied early enough to prevent occurrence. Most importantly, spring nitrogen applications consistently reduced disease compared with the typically used summer-only nitrogen schedule. This result should cause a marked shift in current fertility practices for zoysiagrass since managers now do not apply nitrogen in the spring due to concerns of increasing large patch severity.


Training Plan Developed for Plant Genetic Resources Management

What happens when many of the experts responsible for running one of the world’s premier plant genebanks retire? That question motivated a workshop in Fort Collins, CO in April 2018 to develop a strategy for training the next generation of workers in the U.S. National Plant Germplasm System.

Results of that workshop are reported in a recent *Crop Science* article. The proposed training program includes three components: (1) a publicly available online resource library to house learning objects such as videos, lesson modules, and downloadable documents; (2) online courses hosted by universities; and (3) periodic face-to-face workshops and in-person or online lectures to provide detailed training on specific methods and issues relevant to plant genetic resource management.

As envisioned, the program would benefit multiple audiences, including graduate and undergraduate students, genebank managers and technicians, members of the general public, seed companies, and other organizations passionate about plant diversity. Just as it is understood that genebanks must have well maintained, high quality collections, it is equally important to preserve and share the knowledge of how to manage these priceless resources.


USDA-ARS technicians at the National Laboratory for Genetic Resources Preservation retrieve cryopreserved seeds from long-term storage in liquid nitrogen. Secure seed storage is just one of the many functions of the National Plant Germplasm System.


Large patch is a severe disease of zoysiagrass that is not increased by nitrogen application during the spring infection period.

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