

# Turf Grass TRENDS



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Classic patch disease damage may be obvious, but what caused it isn't. In this case, the problem could be five different diseases: necrotic ring spot, summer patch, brown patch, pythium, or bipolaris. The long straight lines in the foreground are the results of mole damage.

Photo provided by Dr. Eric B. Nelson, Cornell University.

## Understanding necrotic ring spot

Undetected chronic infections contribute to a variety of problems

by Christopher Sann

**R**OOT-DAMAGING DISEASES are among the most destructive of all cool season turf problems. They also are the most misunderstood and the most frequently misdiagnosed. "The squeaky wheel gets oiled," and foliar diseases attract everyone's attention. In contrast, root diseases are out of sight and out of mind—until relatively late in the disease process. In some cases, such as pythium root rot, once the damage is visible, it is often too late to correct the problem. In addition, several of the most common root diseases produce symptoms that are difficult to tell apart.

Not surprisingly, many turf managers tend to know more about one foliar disease, such as dollar spot, than about root diseases as a whole—much less about one specific disease like necrotic ring spot (N.R.S.), which is caused by a specific fungus called *Leptosphaeria korrae*. So we have difficulty diagnosing these diseases and developing appropriate control strategies. In the case of necrotic ring spot, this difficulty translates into a myriad of turf management problems.

### Delayed symptoms and chronic infections

UNLIKE MOST FOLIAR DISEASES, the above ground signs of root diseases are usually slow to appear. With the exception of heavy infections under high stress, the expression of symptoms may take months or even years. From a management point of view, the problem is that chronic infections can go undetected for years.

Depending on the micro-environment, each turf grass plant has a threshold or minimum root mass necessary to maintain top growth. The gross symptoms of N.R.S. usually do not appear until the loss of root mass is compounded by environmental stress, causing loss of turgor, wilting, and leaf and/or crown death. This threshold may be reached rapidly if a hot dry period follows a prolonged wet period, or it may take months or years of slow root loss.

If the combination of root loss during the active infection period and the micro-climate and cultural stresses on the plants are not sufficient to kill the turf, then a rough balance—or chronic infection—can develop. This chronic infection means that the rate of root loss roughly matches

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