

Reducing necrotic ring spot damage

by Christopher Sann



SITE USAGE CAN PLAY A CRUCIAL ROLE in the expression of N.R.S. symptoms. If the infected area is subjected to high traffic or prolonged sports use, control of the symptoms may be difficult, if not impossible. In order for such a site to have any chance of recovering from a severe infection, usage should be restricted for a significant period of time—until changes in cultural practices, soil chemistry, and fertility can reduce the symptoms to an acceptable level.

If a recovered site is reintroduced to its previous level of use and the level of damage returns to high levels, then chemical controls (if an option at that site) should be used as a last resort; however, because of the root-damaging character of necrotic ring spot fungus, chemical controls will only reduce the amount of damage. They cannot and do not eliminate the damage.

Cultural practices

No matter what the site usage, changing the cultural practices on an infected site can play a significant role in reducing symptoms:

- **RAISING THE MOWING HEIGHT** as far as possible can increase the shading of the soil and reduce soil temperatures and evaporative moisture loss.
- **WATERING INFECTED TURF** more frequently can improve stand survivability by reducing drought stress and increasing the number and variety of naturally occurring predators of the N.R.S. pathogen.
- **PERIODICALLY REMOVING** accumulated thatch, aerifying existing thatch, or a combination of both techniques can improve moisture penetration.
- **PERIODICALLY TESTING THE SOIL** and adjusting the chemical balance can provide a better growing environment for the plants.
- **INTRODUCING** less susceptible varieties or species will reduce the number of vulnerable plants.
- **USING WETTING AGENTS** and root stimulating compounds to increase root mass has begun to be used with success.
- **USING ORGANIC OR SLOW RELEASE** synthetic fertilizers will reduce the stress on the root system by limiting the amount of rapid foliar growth and its diversion of resources away from the roots.

Chemical controls

If changing site usage and adjusting site cultural practices do not substantially reduce necrotic ring spot symptoms, then properly timed chemical control applications can have the desired effects.

There are two basic approaches to chemical control of N.R.S.:

The **first** is to make a full strength or curative rate application of a listed fungicide at the onset of conditions favorable to the growth of *Leptosphaeria korrae*. This approach requires close monitoring of site conditions and keeping detailed records on the site—to gauge when to make a pre-emptive application. This technique can be especially effective in dryer regions, where severe damage from N.R.S. is only an occasional problem.

The **second** method is to apply lighter rates of listed fungicides on a preventive basis at previously determined times of the year. The exact timing of these applications should vary according to the region. In general, one or two reduced rate applications in the early fall, as night time temperatures approach 60°F, followed by one or two reduced rate applications, in the early spring following complete green-up, are effective if they are used over the years.

In the Middle Atlantic states this has translated into one application in early October and a follow up application in mid April. In more northern regions, like central New York, two applications—one in late August and the other in early October—followed by two applications in the spring—one in mid May and again in mid June—are probably necessary. The more prolonged the cool, wet conditions, the longer the period of active fungal growth; hence the need for a second application in each season.

In the early years of a long-term preventive application program, sites that have a history of heavy N.R.S. activity may require monitoring of site conditions and making curative applications when conditions warrant. As this preventive program progresses, the need for monitoring will be reduced.

Depending on the site conditions, tests have shown that, tank mixing wetting agents and/or rooting compounds with the preventive rates of fungicides can be beneficial.

Some caution about adding these amendments should be observed:

- **LIQUID WETTING AGENTS** may produce foliar burn at certain concentrations and at certain times of the year. If this is a problem then use a granular form of wetting agent.
- **IF THE SITE HAS A HEAVY THATCH LAYER**, greater than 3/8 inch, that is root invaded, do not use root stimulating compounds, since they will produce increased root mass in the thatch as well as the soil.
- **IF THE USE OF ROOTING COMPOUNDS** is contra indicated, because of site conditions, tank mixing very light rates of triadimefon, at about 1/10 oz. per thousand square feet may be helpful. Tests at Virginia Polytechnic Institute (V.P.I.), have indicated that the use of light rates of triadimefon also stimulates root growth. ■