Stop #7

Management of Necrotic Ring Spot by Biological Controls

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This year's study of necrotic ring spot (NRS) at the Hancock Turfgrass Research Center focuses on the utilization of biological controls to manage Leptophaeria korrae, the causal agent of NRS. Primarily a disease of Kentucky Bluegrass (Poa pratensis), L. korrae infects the roots of the plants during the cool weather of the fall with red and purple leaves evident on infected plants. These infected plants with thier damaged root systems are susceptible to heat and drought stress, forming straw colored patches 6 inches to 2 feet in diameter during the summer. Older patches may have a frog-eye appearance.

Concern related to the use of fungicides has prompted the exploration for alternative means to manage fungal turfgrass pathogens. Several bacterial strains have been shown to inhibit the growth of L. korrae on test plates. These bacterial biocontrols are mixed with one of three organic carriers, peat, molasses, or Compost Plus and are applied at rates equivalent to 1 pound of nitrogen per month. The peat however, does not contain active nitrogen; a formula of 10-4-4 has been added to each peat treatment. The carriers not only act to provide a nitrogen source, but also allow for easy application and provide added nutrients to the bacteria. In this study, the carriers were also applied without the addition of the biocontrol bacteria.

The effects of the biological controls are being compared to the commercial bio-organic fertilizers Lawn Restore, Harmony (16-3-3), Sustane, and Regenerate, which are also applied at rates of 1 pound of nitrogen per month. In order to compare management of NRS by the bacterial biocontrols to that of standard chemical fungicides, Banner, Bayleton, and Rubigan are applied at rates of 2 and 4 ounces per month. The chemical fungicide treatments are fertilized biweekly with one half pound of 18-4-10 formulation fertilizer. In this study, all biocontrols, fertilizers, and chemical fungicides are drenched in after application.

The results of this study are not yet available for analysis.