

BIOLOGICAL CONTROL OF NRS ON POA PRATENSIS

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Purpose of Study

An irrigation and fertilization study on a Kentucky bluegrass turf has been established to determine feasibility of biological controls in relation to turfgrass health and disease. Sound cultural practices may be useful in laying the foundation for biological control of root infecting turfgrass diseases. We suggest that by controlling levels of moisture and nutrients in the soil we can reduce disease and the use of costly fungicides. The purpose of this study is to demonstrate control of Necrotic Ring Spot (NRS) through the above mentioned cultural practices.

Establishment

Nine blocks of Bristol and Victa Kentucky bluegrass were inoculated with the causal agent of NRS., Leptosphaeria korrae, in the fall of 1985. Disease development was successful in all nine blocks. Each plot contains a muck sod, mineral sod and a seeded turf. Various degrees of disease can be seen in each of the different sod blocks.

The nine blocks are managed under three different irrigation regimes. Three blocks receive no supplemental irrigation (rain only). Three blocks receive 0.1 inch per day. And the remaining three blocks receive 80% of open pan evaporation, on Mondays and Fridays. The amount of soil moisture has a pronounced effect on NRS.

Appropriate irrigation techniques for biological control of NRS is enhanced by a good fertilization program. Various sources of nitrogen in the fertilizers serve to promote plant growth and retard disease development. Adequate levels of nitrogen help reduce the severity of the disease. Five fertilizer types are being studied on the muck sod blocks: Lawn Restore, Green Magic/Nutra-aid, Biocontrol, Anderson's number 1, and Anderson's number 2. Manufacturers rates are used in all applications. Table 5 lists the types of fertilizers used on the muck sod.

TABLE 5.

Rating Table

Biological Control of NRS

Irrigation regime	Rating*	Sod type	Rating	Fertilizer type	Rating
rain only		muck		L. Restore	
0.1" daily		sand		G.M./N.aid	
80% pan**		seeded		Biocontrol	
				Ander. number 1	
				Ander. number 2	

* Rating should be an average of the three plots on a percent of the area diseased.

** 80% pan refers to water lost to evapotranspiration, 80% of the total water lost is returned to the block.

Conclusion

Biological control of NRS through irrigation and fertilization practices has been demonstrated. Different irrigation regimes have the most dramatic impact on NRS development with the daily irrigation treatments having the least disease. Sod type has an obvious effect on the degree of disease in a given block with the seeded turf having the least disease. Biological and cultural practices are important for proper management of your turf.