

Mixed Turf Reduces Insect Injury

Endophytic turfgrasses that harbor fungal organisms and impart insect resistance have been an important aspect of IPM programs to reduce surface insect damage. The relationship between the plant and the fungi results in formation of chemicals that deter and in some cases kill insects that feed on turfgrass shoots. These insect pests include chinch bugs, sod webworm, and bluegrass billbug. However, if you do not have an existing population of these grasses in your turf, will overseeding with them provide protection?

Researchers at Ohio State University investigated the influence of overseeding endophyte enhanced perennial ryegrass into existing stands of Kentucky bluegrass on populations of bluegrass billbug. Two seed rates (1 or 2 pounds per 1000 sq. ft.) of a 95% endophyte infected variety (Repell II) or a commercial blend of ryegrass varieties (Triple Play) that was 63% endophyte infected.

One unexpected result was the apparent discrepancy between stated endophyte infection level and actual infection level determined in the lab prior to seeding, i.e. in every case infection level was less than labeled. In addition, there were no discernible differences between seeding rates. In general, bluegrass billbug populations were reduced when there was at least 35% endophyte enhanced perennial ryegrass in the stand. Ryegrass populations greater than 35% did not reflect any further reduction in bluegrass billbug damage.

This study demonstrates the importance of applying an integrated approach to insect management. However, there were a number of varietal characteristics other than endophytes that researchers indicated were involved in the billbug population shifts. There is much to be learned about the inherent potential of the turfgrass varieties on the market.

From: Richmond, D.S., H.D. Niemczyk, and D.J. Shetlar. 2000. Overseeding endophytic perennial ryegrass into stands of Kentucky bluegrass to manage bluegrass billbug. *J. Economic Entomology*, 93:1662-1668.

Primo and Supina Bluegrass in Shade

Increased interest in developing covered stadia with natural turf has spawned a new generation of research on the influence of low light on turfgrass performance. Specifically, the critical questions are how much useful light will reach the turf, do turfgrasses differ in their performance under traffic, and are there management practices that can enhance performance.

Michigan State University and the University of Wisconsin-Madison have conducted the lion share of research in this area with their specialized facilities and expertise. Drs. Stier and Rogers investigated the performance of Supina bluegrass and Kentucky bluegrass under light levels experienced inside stadia such as the Pontiac Silverdome. Traffic treatments were imposed and the effect of Trinexepac-ethyl (Primo) was evaluated.

Under trafficked conditions, Supina bluegrass treated with Primo at 0.05 oz. per 1000 square feet provided acceptable turf quality for up to 5 weeks. Kentucky bluegrass treated with Primo remained acceptable for only 2 weeks during the study. The Kentucky bluegrass plots experienced a severe infestation of powdery mildew that significantly limited performance throughout the study.

Clearly the light levels in this study would be considered extremely low. However, the performance of Supina bluegrass under these hostile conditions indicates the potential for this species to be used in other heavily trafficked shaded environments, such as golf tees. Also, it appears that the use of Primo enhances the performance of Supina bluegrass under low light.

From: J.C. Stier and J.N. Rogers III. Trinexepac-ethyl and iron effects on supina and Kentucky bluegrasses under low irradiance. *Crop Sci.* 41:457-465.

Scanning the Journals

One unexpected result was the apparent discrepancy between stated endophyte infection level and actual infection level determined in the lab prior to seeding, i.e. in every case infection level was less than labeled.

However, the performance of Supina bluegrass under these hostile conditions indicates the potential for this species to be used in other heavily trafficked shaded environments, such as golf tees.

