

UNDERSTANDING THE BENEFITS OF TURFGRASS MICROBES

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Current trends of reducing chemical inputs by the turfgrass industry has resulted in a search for a more natural means of sustaining healthy turfgrass on golf courses. A growing area of turfgrass science lies in understanding the microbial environment and beneficial contributions of soil microbes so that, someday, the potential for optimal turfgrass health will be unlocked. This presentation will focus on the components and benefits of existing turfgrass microbial populations and learning how to critically evaluate the numerous microbial-based products that have recently emerged.

The ability of higher plants to survive in the soil environment is made possible through unique interactions that have evolved between plants and microbes. Collectively, microbes benefit turf by regulating soil processes such as nutrient cycling, organic matter degradation, and soil aggregation, as well as directly enhancing root growth through protection and growth promoting hormones. Microbes, in turn, are supplied with nutrient-rich plant exudates for use as a food source. Turfgrass is unique in that its root structure creates a rhizosphere (the area under the direct influence of roots) that can support one of the largest microbial populations of all plants. The major microbe groups and their influences on turfgrass health to be discussed will include fungi, bacteria, algae, and actinomycetes. The most important concepts stressed will be microbial functions and population sizes. Once exposed to the enormous populations that exist, one can better evaluate the claims of present and future products marketed to benefit your turf.

Due to the lack of scientific field testing of many new microbial-based products or organic supplements, it is quite difficult for most to accurately evaluate the claims of such products. A set of guidelines and questions will be presented so that any turf manager will know what to look for, which questions to ask, and what strategies to use to help evaluate claims and performance of these products.