



Turf Managers and Biostimulants: An Ongoing Relationship

by Susan Doyle

Robert Weltzien, director of research of a major biostimulant manufacturer and Dr. R. E. Schmidt, Professor of Turfgrass Ecology, College of Agriculture and Life Sciences, Virginia Polytechnic Institute and State University, were asked to discuss sports turf managers and the role biostimulants play in field maintenance.

R.E. Schmidt: Sports Turf Managers need to understand biostimulants if they are to incorporate advanced plant nutrition in their cultural practices.

Robert Weltzien: Biostimulants are organic substances whose only function is to carry plants over stress, like a nutrient supplement for humans.

RS: Biostimulants contain metabolites that not only stimulate plant growth but are favorable to the health of plants, which is an important factor in soil fertility. Advanced concepts of plant nutrition are beyond application of minerals.

RW: If a plant is not producing enough amino acids, vitamins or hormones, the biostimulant will provide them as a supplement. For example, we have demonstrated that after

treating a plant with a biostimulant, leaf tissue analysis shows more of the vitamins than that of the control (no biostimulant).

RS: Biostimulants enable turf managers to condition plants to tolerate subsequent adverse environmental conditions. We know that plants treated with appropriate biostimulants exhibit improved tolerance to drought, salinity, diseases and nematodes, just to mention a few examples.

RW: So if plants are showing any form of stress, related to nutrition, biostimulants can help. Let's take an example of chlorosis. This is usually due to a lack of iron (and manganese) and can be solved by use of a chelated iron. However, frequently there is enough iron in the soil and a biostimulant will enable the plant to take up the iron already available in the soil.

RS: Let me add that the use of biostimulants is effective to implement and integrate plant management practices. Fewer pesticides are generally required when biostimulants are employed.

Biostimulants have become, for many turf managers, an integral part in turf management practices, though fertilizers will continue to be essential in the culture of turf grasses. In appropriate uses fertilizers may actually cause a negative influence on the growth of a field. For example, high nitrogen fertility of bentgrass during high temperatures may stimulate foliar growth and increase respiration, thus causing a significant reduction on non-structural carbohydrates. This, in turn, could reduce the endogenous antioxidants causing senescence. Appropriate biostimulant treatments would enhance antioxidant (such as Vitamin E) development and condition the grass to tolerate the stress of heavy fertility and hot weather.

RW: Biostimulants supplement NPK. The attempt to get the same benefit by just increasing NPK can be disastrous. Nitrogen, beyond a certain point, weakens the root system, which is the most important part of the grass plant.

RS: And such high fertility of stoloniferous grasses in some cases increases thatch development, causing anaerobic root zones. This is occurring with the new vigorous bentgrasses. The use of certain biostimulants has been shown to reduce the need of high fertility to provide the required turfgrass quality and reduce thatch buildup and the anaerobic black layer syndrome.

Susan L. Doyle is the advertising manager for ROOTSinc.



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