Biostimulants

Continued from page 21

very impressive," Berlyn said.

He added that the material seems to work best in sandier soils because they are so permeable.

"The biostimulant promotes rapid uptake of nutrients and other beneficial compounds before they have a chance to leach out of the soil," he said.

Goatley found different responses to biostimulants between warm- and cool-season grasses.

He said warm-season varieties respond most under stress conditions. Cool-season grasses, he said, have a measurable response regardless of growing conditions.

Goatley recommended applications for warm-season grasses in early fall, "as turf begins to prepare for winter dormancy. In this situation, we see more enhanced root development late in the growing season, which could result in better carbohydrate storage and preparation of plants for winter. There is also evidence that biostimulants could enhance spring green-up as temperatures warm up and spring dormancy breaks."

"When a biostimulant ... has iron added to it, the biggest advantage would be an immediate color response that wouldn't be associated with a resulting flush of shoot growth. This could be very advantageous to turf managers in the spring when everyone is trying to get their grass to green up without promoting shoot growth at the expense of root growth.

"The lush growth of turf following an early-season nitrogen application is very susceptible to injury from late frosts."

Graves applies biostimulants in March, April and September.

And Lucas agreed they should be applied "from mid-fall to spring, when the roots are growing like crazy — March, April, May. If you've got these materials available, you create and enhance a root system that is tenfold better than your normal dormant feeding of milorganites or sulfur-coated ureas, which are somewhat of a norm these days."

He added current research has revealed that minute amounts of the sulfur-coated ureas are getting "somewhat of a flushing effect" in dormant feeding. "You're losing a very small percentage, but a percentage that could basically be used by the plant at a more optimum growing period," he said.

Virginia Tech's Schmidt added that biostimulant use might improve salt tolerance.

He said in one experiment he irrigated a turfgrass plot heavily with salt water trying to create an artificial drought.

"Salts hold back turf," Schmidt said, "but we're offsetting it. We're actually stimulating these roots with biostimulants whether we're irrigating with salt water or not."

Schmidt said he believes enzymes in biostimulants "are doing something to the plant so that it can take water up that is normally not available to it. Normally when the water gets that low, the plant wilts. But we are still seeing it grow.

"We think it has something to do with the fatty acids and we're investigating that; but it's a story that will have to be told later."

Among the biostimulants on the market are Roots and ironRoots, made by Roots, Inc., 25 Science Park, New Haven, Conn. 06511, telephone 203-786-5295; Panacea, produced by Emerald Isle, Ltd., 2153 Newport Road, of Ann Arbor, Mich. 48103, telephone 313-662-2727; and Bovamura, made by PBI/Gordon Corp., 1217 W. 12th St., Kansas City, Mo. 64101, telephone 816-421-4070.

This story was prepared with assistance from the people at Roots, Inc., of New Haven, Conn.

Danger ahead without organization — Roberts

Legitimate biostimulant manufacturers must address ways to regulate the industry or see charlatans enter the marketplace, according to The Lawn Institute director.

"Research interest in biostimulants is keen and will continue, and will be competitive. But the bottom line is, ultimately, this industry is going to have to look at policing itself through regulation and controls, just like the seed and fertilizer and pesticide industries," said Dr. Eliot C. Roberts.

"The companies that really have legitimate products have to agree among themselves on procedures they can follow for analytical purposes so they can label products and then advertise based on the label," he said.

Roberts said the fledgling biostimulant industry is not regulated, posing a threat to companies financing university research.

"A company forms and advertises its product. How do you know what's in that product?" Roberts asked. "There's not much information on the label that helps you know if it contains cytokinin, or gibberellin, or some other growth substance. And there's not much that tells you how much there is of these.

"In time ... there will be a better means of identifying and describing contents, just as we now have procedures to identify pesticides, their active ingredient, amount, et cetera.

"In the long haul we are going to have to have state and federal agencies involved. Of course, any industry hates to be controlled. But there isn't enough (law) at the present time so that any company has to meet any criteria in the marketing process."