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Rip Van Winkle and Turfgrass Fertility

I feel like Rip Van Winkle, the Dutchman in the Washington Irving tale who fell asleep atop a Catskill knoll and awoke 20 years later only to realize how much the world had passed him by. Before I "fell asleep," potassium was a regular macronutrient, required in roughly equal amounts to nitrogen. By the time I "woke up," many turfgrass managers deemed potassium the most important nutrient, required at levels as much as six times that of nitrogen.

I suspect a few things happened during the period of my slumber that could lead one to think they need more potassium. First, there is more soil with high salinity content today than in past years, and additional potassium can help adjust those sodium problems. Second, treatment methods embraced by soil-consulting firms require more potassium. And third, although evidence suggests that potassium can enhance drought and wear tolerance, there is no evidence that most golf courses lack the required amount of potassium.

Now that I am awake again, it is clear to me that no one is reading the research material available on potassium. Gratuitous potassium applications have become the norm regardless of the real need.

Leaching, Leaching, Leaching

Sodium is detrimental to plant and soil health. Increased use of poor quality irrigation water, especially water that is high in sodium, has led to a perceived need to increase the amount of potassium. In addition, areas with low rainfall exacerbate sodium accumulation problems by limiting leaching.

Bob Carrow, a professor at the University of Georgia, writes that at most potassium is required in equal amounts to nitrogen. His findings are obvious to other plant researchers. It's a mystery how his findings, and those of other researchers, have been misinterpreted to the point that some turf managers use up to six times as much potassium as they do nitrogen.

Carrow has a mantra to help turfgrass managers understand the most effective means of solving sodium problems: "Leaching, leaching, leaching" he said during seminar after seminar and in almost every article he has written on the subject. Consequently, the leaching of harmful cations, or positively charged ions, such as sodium, will also leach important cations, such as potassium. Therefore, more potassium must be applied but in equal proportion to nitrogen.

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