

# Biofertilizers Could Help Reshape the Industry

**W**hat if Usain Bolt, the Jamaican sprinter and three-time Olympic gold medalist, could run as fast as he does with only about half the training or nutrition? That would be a formula for efficiency the likes of which world-class athletes have never known.

What if plants could do the same thing? What if plants could grow to be as green, dense and healthy as they do under traditional fertilization programs, but with only about half the inputs? In our industry, that's an equally compelling proposition. As leading university professors and our own researchers are discovering, that radical level of efficiency is now possible through the emerging category of biologicals.

As we conclude *Golfdom's* three-part report on fertility with a look to the future, those of us at LebanonTurf don't need a crystal ball to realize that biological-based fertilizers have the potential to reshape our industry. That's not an overstatement when you consider that test results show fertilizer applications with biological additives can be reduced by as much as 40 percent over synthetic fertilizers without affecting plant health or performance.

But what are biologicals, what do they really do and how do they do it?

Biologicals is the name given to the wide range of living organisms, including microbes, bacteria and fungi, that can be added to a fertilizer prill or are standalone products that help nourish plants. They promote a healthy give-and-take with the plant: fungi consume carbohydrates exuded by the plant's roots and give back water, phosphorous and other minerals. Bacteria also consume carbohydrates, which are eaten by protozoa that, in turn, convert the bacteria's protein into nitrogen that feeds the plants.

Think of it as an underground revolution led by nature's own powerful army.

While the scientific turfgrass community has been studying organic fertilizers for several decades, only recently has the research started to uncover more of their story. Even now, Roch Gaussoin, a professor at the University of Nebraska and one of the leading authorities on biologicals, admits to a lack of understanding. "I wish we could better

define it and explain it," he says. "But right now we're just excited by the biological products and impressed by the efficiency they're demonstrating."

Efficiency in the world of golf course superintendents and landscape professionals translates to lower fertility, labor and fuel costs. In addition, because the majority of the organic fertilizer is taken up into the plant without significant loss into the soil or water table, biologicals also promote ecofriendliness.

Biologicals have the potential to replace some traditional granular fertilizer applications that incorporate synthetic chemicals, especially nitrogen, as their main ingredients.

"Granulars are a great technology, but because their uptake from the soil is often unpredictable, we can end up putting on more product than the plant can actually utilize efficiently at the time of application," Gaussoin says. "As a result, we can lose nutrients to the soil or groundwater, which is not only inefficient but a detriment to the environment."

They say it's not nice to fool Mother Nature. But in this case, biological-based fertilizers that borrow from the laws of nature are giving us clues to more efficient and cost-effective ways to help our customers. ■

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**By Lori  
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