

Do They or Don't They?

Studies spark debate on whether organic fertilizers suppress disease

BY FRANK H. ANDORKA JR., MANAGING EDITOR

You can almost hear Mike Archer squirm in his seat when you ask him whether organic fertilizers suppress dollar spot and other diseases.

Archer, director of market development and research for Milwaukee-based Milorganite, says the answer to the question depends on who's responding.

"I want to make it clear that Milorganite is *not* a pesticide product," Archer says finally. "Organic fertilizers can help create a soil profile that promotes healthier turf, however, which will resist disease more easily than unhealthy turf."

Interest in the issue increased last year when a study by Michigan State University professor Joe Vargas indicated that organic fertilizers reduced a dollar spot infestation by 61 percent. An article by University of Maryland professor Peter Dernoeden in the March/April 2002 issue of *Crop Science* disputed those findings and argued that there was little difference in the affects on disease of organic fertilizers vs. synthetic products.

"We found little evidence that natural organics enhanced disease suppression any better than the synthetics," Dernoeden says. "Maybe organics helped control the thatch layer slightly better, but not enormously so."

So which study do you believe? Well, if you talk to both researchers, you'll find they came to similar conclusions: Healthy turf promotes resistance to diseases, and organic fertilizers can play a role. If you hope organic fertilizers alone will solve your disease problems, however, you're asking too much.

"You can't just replace synthetics with organics and expect miracles," says Joel Simmons, owner of Martins Creek, Pa.-based Earthworks, which manufactures organic fertilizers and other soil conditioners. "You have to balance the essential elements of the soil to achieve healthier turfgrass. That's where organics come in."

The studies in question

Vargas, who studied an organic fertilizer on test plots over a five-year period, says the product did reduce dollar spot in 2000 by 61 percent. With apologies to Paul Harvey, however, that's only part of the story.

"The truth is, 2000 was not a heavy year for dollar spot," Vargas says. "If it had been, you wouldn't have that level of suppression because the pathogens would be more aggressive."

Besides, 61 percent suppression means there's still 39 percent of the dollar spot that you *didn't*

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suppress, Vargas says. "That's still a lot of disease out there," he adds.

Dernoeden's article concludes that the most important factor in disease suppression isn't the type of fertilizer you use, but the overall fertility plan you institute. If you don't scrimp on your fertilizer program, you're likely to see little disease. It's all about feeding the beneficial microbes in the soil.

"Disease suppression is far more likely to be tied to the amount of nitrogen available in

the soil," Dernoeden says. "In the end, our study doesn't see a huge difference between using synthetic slow-release products and organic ones as long as the nutrients are made available consistently."

Bob Weltzien, co-founder of Independence, Mo.-based Roots, says he believes organic fertilizers are more likely to help in sand-based turf situations rather than soil-based turf.

"In sand, organic products help establish a more natural profile," Weltzien says. "It's harder to demonstrate a benefit in other situations."

Ideal Environmental Factors Affecting Soil Microbes

Organic carbon – grass clippings, organic wastes, etc.

Moisture – 50 percent to 60 percent of water-holding capacity

Aeration – balance of air- and water-filled pores

pH – near neutral (between 6 and 8)

Temperature – 50 to 104 degrees F

Inorganic nutrients – adequate nitrogen, potassium, phosphorus and sulphur

SOURCE: TEXAS A&M UNIVERSITY

Part of a broader plan

To grow healthy turf, it's vital to maintain a balance between the soil it grows in, the air it needs to breath and the water that nourishes it. Organics promote the balance, says Bill Byrnes, president of Collierville, Tenn.-based Floratine.

"As with everything in life, it's a matter of moderation," Byrnes says. "If you get too much or too little of any one element, you can damage the turf."

Byrnes says he views organic fertilizers as bug



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food rather than plant food. When beneficial microbes eat the carbon in organic products, they leave less food for predatory microbes. Then when the beneficial microbes die, they release nitrogen in an easily digestible form for the plant.

"When you use organics, you're giving a boost to the power of nature," Byrnes says. "Healthy soil helps your turf resist disease, survive severe outbreaks and recover more quickly."

"Not using organics as part of your fertility program would be like feeding your kids nothing but Rice Krispie treats and water."

RICK GEISE, DIRECTOR OF MARKETING, GRIFFIN INDUSTRIES

Rick Geise, director of marketing for Valdosta, Ga.-based Griffin Industries, which produces Nature Safe fertilizer, says superintendents can reduce their thatch layer by using organics, which is a breeding ground for disease.

"Not using organics as part of your fertility program would be like feeding your kids nothing but Rice Krispie treats and water," Geise says. "It would keep them alive, but in the end their health would suffer. That's why you want to

give your turf as balanced a nutrition program as possible so it can be prepared when disease pathogens attack."

Some products boost turf's immune system, improving its disease resistance, says George Barger, director of the agricultural division of Edgewood, Md.-based Nutramax Laboratories.

"The studies prove that anything you can do to help boost a plant's strength will make it less susceptible to disease," Barger says. "Organics certainly help with that process."

Consistency is an issue

Monica Elliott, associate professor of plant pathology at the University of Florida, says that since organic fertilizers contain natural products, they often suffer consistency problems. In fact, Elliott buys organic fertilizers in large enough quantities to ensure she's applying fertilizer from the same lot throughout an experiment. Otherwise, the product's variability might affect the outcome.

"The companies do everything they can to ensure consistency, but it's impossible to be perfect when you're dealing with living things," Elliott says. "There's a limit to how uniform you can be."

Elliott's advice for superintendents is to test organics on small areas of their courses before starting full programs.

"You shouldn't rely on someone else's experience to decide whether an organic product will suppress disease on your course," Elliott says. "You should try it out yourself and see what works best for you." ■

You can reach the author of this article, Frank Andorka, at fandorka@advanstar.com.

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