

Alternative Tx for turfgrass health

In the ongoing war against insect pests, fungal diseases, and other threats to turf health, many turfgrass sod producers are exploring nontraditional treatment options to promote vigorous, pest-free crops.

In their continuous effort to provide those who buy and maintain turfgrass sod with the highest-quality product possible, turf growers and researchers are testing a variety of inexpensive alternative treatments, including mineral, herbal and live biological products.

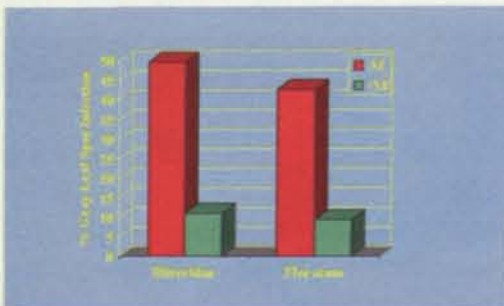
While these alternatives don't replace effective traditional pesticides, turf industry professionals are starting to recognize the value of such materials and reporting important successes in the field.

Mineral silica

For years, rice and sugarcane farmers have used water-soluble silica, a byproduct of phosphate fertilizer mining, to fight fungal disease and promote growth. Now its effects are also being studied on turfgrass, with funding from the International Turf Producers Foundation (ITPF).

Paul Grose, general manager of King Ranch Inc., Belle Glade, FL, has participated in the University of Florida's ITPF-supported silica/turfgrass trial studies for the past year and a half. While it's still too early to report definitive results, Grose said he has seen improvement in root system density.

"We used silica on our sugarcane for many years and had dramatic results," said Grose. "So when the University approached us about trying it with our turfgrass, we were interested."



Red bars represent the percentage of gray leaf spot infection in Bitterblue and Floratam turfgrass varieties not treated with silicon, and green bars represent the percentage of infection in the same varieties treated with silicon.



St. Augustinegrass amended with silica shows little if any gray leaf spot (left), while non-amended grass in the same conditions shows severe gray leaf spot (right). Photos by Dr. Lawrence Datnoff, professor of plant pathology, University of Florida.

According to Lawrence Datnoff, PhD, the Florida plant pathology professor who oversees the study, most soils contain considerable quantities of silica. However, over-planting can reduce the levels that are naturally available to plants. Datnoff has found that spraying turfgrass with soluble silica reduces incidents of *Pyricularia grisea*, or gray leaf spot. Other research has found it to be effective against pythium blight, dollar spot, brown patch disease, and powdery mildew.

"Right now, traditional fungicides are considered the

best method available for managing these diseases," said Datnoff. "But silica, as a complementary solution, potentially offers another disease management option for turfgrass producers and maintenance crews."

Because much of the current research is still not complete, some turfgrass producers are taking a "wait and see" attitude before they apply alternative treatments to their sod. Since producers are constantly looking for ways to further strengthen the turf they provide to customers, alternative materials for disease management are an attractive option, and the initial research results are promising.

In addition to the silica studies, researchers are testing the effectiveness of sulfur, manganese, iron, and other mineral products against pests and disease. Scientists also are studying the health benefits to turfgrass of herbal remedies such as salicylic acid and the bacteria *Xanthomonas*.

Live biological remedies like the bacteria *pseudomonas* have been shown to suppress a variety of turfgrass diseases. And beneficial nematodes (microscopic worms of the phylum Nematoda) are being used to parasitically control insect pests, such as grubs, mole crickets, and caterpillars.

Some innovators also are exploring the value of alternative materials as fertilizers. For example, in an effort to recycle waste while improving quality and yield, one company is manufacturing fertilizer from

used photo and film processing chemicals.

Timing is crucial

For the past 3 years, Myron Kuenzi of Kuenzi Turf & Nursery, Salem, OR, has used a yeast starter containing the beneficial fungus *Trichoderma* to combat the fungal disease *helminthosporium*. Kuenzi says he has experienced "modest" success by spraying it on turf in the early stages of growth.

"The timing of the application is exceedingly important," he said. "You need to be aware of the life cycle that you're working with. If it's too early or too late, there's no benefit."

Most researchers and producers familiar with alternative treatments agree that timing is crucial, and that these products work best if applied before disease occurs. That way they are used to help prevent the problem, rather than cure it. And as is the case with traditional pesticides, these alternative remedies should never take the place of good maintenance practices.

"I always tell my customers, that's the most important part of disease management," Grose said. "Sod producers are doing all they can to deliver the healthiest product possible, but after the grass is installed, the customer can avoid most fungal problems by maintaining turf properly."

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This article was contributed by the Turfgrass Producers International, an independent, not-for-profit association. For more information, visit www.TurfGrassSod.org.