While biological control products have gained a significant foothold in the U.S. turfgrass market, the young industry continues to redefine itself with new products, technologies and techniques almost daily.

“...is a new frontier that we are learning more about every day,” said Rick Geise, brand manager for Nature Safe. “We are just scratching the surface right now.”

Universities and companies are conducting research to determine methods to improve microbial efficacy, sustain microbial populations, identify specific beneficial micro-organisms, and lengthen the shelf-life of products and combine products with traditional chemical applications.

**BIOSTIMULANTS**

Through a variety of delivery mechanisms, activities and organisms, biostimulants, generally, encourage healthy turf growth, increased root mass and improve soil quality to help turf survive weather- and disease-related stress.

**Supers use biologicals with cautious optimism**

By ANDREW OVERBECK

As regulations and local legislation concerning the use of chemicals and environmental pressures continue to haunt golf course superintendents, many are incorporating biological products into their maintenance regimes.

“In this business, you don’t want to wait until you are forced to do anything,” said Paul Reising, superintendent at Preswick Village Country Club in Highland, Mich., “because then there is no room to experiment. If your top two products are taken off the market you are screwed and your job is on the line and you have to try a product that you are not familiar with.”

Reising has been using Eco Soil’s Bioject system on fairways and tees and Floratine’s Floradox system on greens and has met, so far, with success.

Reising used two-thirds less fungicide on tees and fairways last year and switched to organic fungicide once on 14 of his 18 greens.

“I am convinced that it works, and we will be going full tilt this year,” he said. “But it has only been one year so I am still going to run some tests this year. It would take me a couple years to be fully convinced.”

When it comes to biologicals, cautious optimism is the rule of the day. Try out a bunch,” advised Dan Dineen, superintendent at North Shore Country Club in Glenview, Ill. “You want to be comfortable with what the options are if you have to omit certain plant-protection products.”

**Bio-control industry shaking growing pains**

By ANDREW OVERBECK

Industry insiders predict that between 20 and 30 percent of chemical and fungicide revenues will shift towards biological alternatives in the next five to 10 years. Behind that growth are increasing government regulations, such as the Food Quality and Protection Act of 1996 (FQPA) that is restricting and eliminating chemical alternatives.
BIOLOGICAL CONTROLS

Supers try out biologicals

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Dinelli also suggested studying university research results and what organisms are involved. Even then there are risks involved.

"There are often inconsistencies. What worked for one university might not work for my course and vice versa," he said.

However, using university research data gives superintendents a baseline of what to expect with product performance.

Scott Niven, superintendent at Stanwich Club in Greenwich, Conn., used research as a guide when instituting the use of Companion in his turf management program.

"I took my cues from Dr. Bruce Clark at Rutgers, who had been using it for three years," said Niven. "He was able to reduce his fungicide by half and I took that information and reduced my program by one-third and got good control. He demonstrated how much I could reduce fungicide use and still be safe."

This year Niven is building Companion into his program and making it pay for itself by reducing rates.

By using a wide variety of biological controls and strong cultural practices, Dinelli has also reduced chemical use by an average of 50 percent.

"I can't say for sure that it has been biological," he said. "Every year we massage our plans and get better at what we do, so there are a lot of cultural things that we wind up implementing as far as aerification tools and management. The biologicals need to be a part of the overall program, but it is not a stand-alone."

"The whole approach has to be combined with other cultural practices to take you to the next level... but every now and then you get smacked down to the first level and you have to use a fungicide."

Since biologicals are not fail-safe and require constant monitoring, many superintendents are not thrilled about using them, said Reising.

"Some guys say that with aeration, cultural practices, feeding and nutrition, you don't need a fungicide," he said. "But how do you tell that to a guy who just lost a green or fairway and his job is on the line because he didn't spray a fungicide?"

"This is a dynamic new science and there are more questions than answers," said Dinelli.