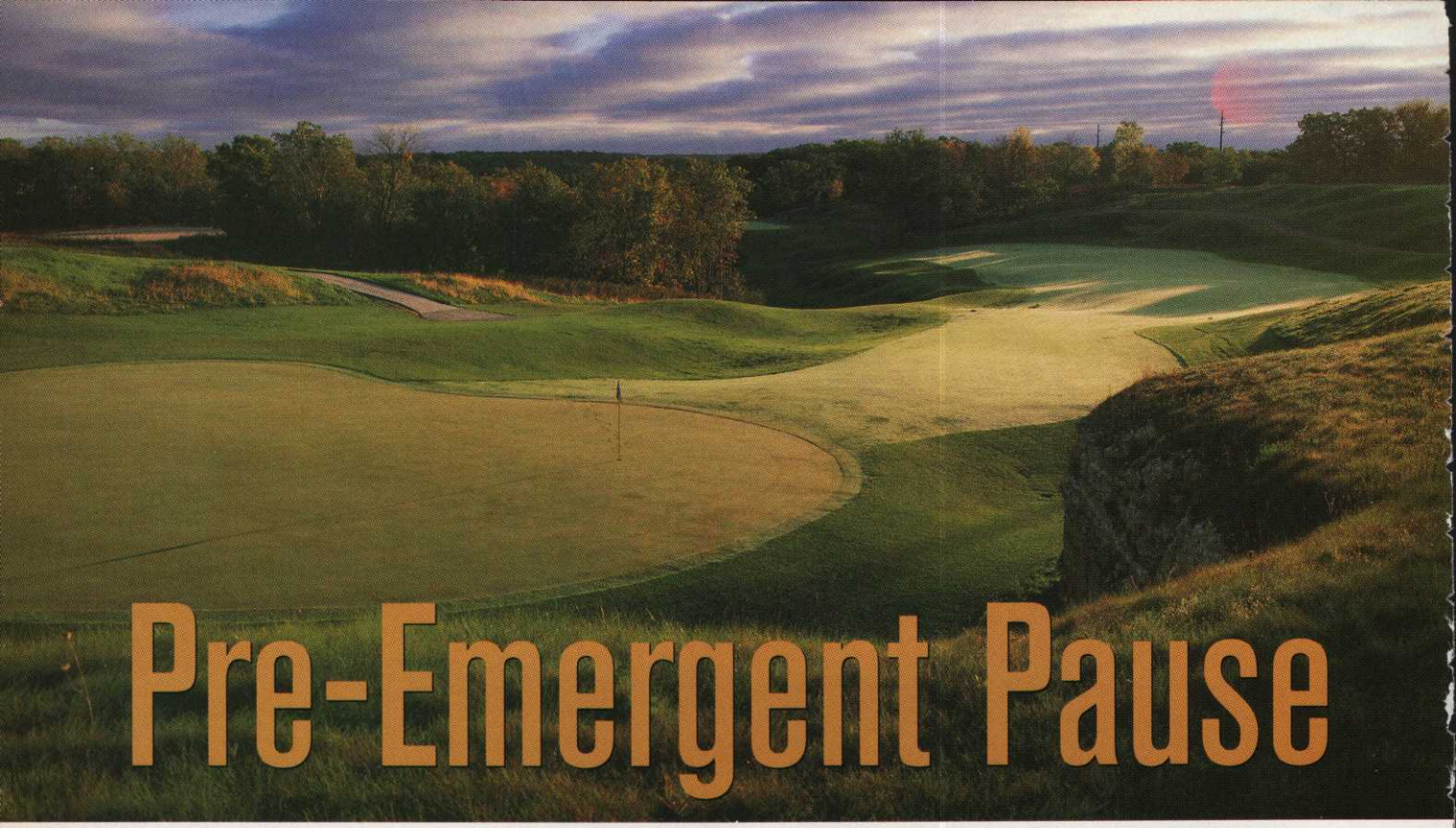

Pre-Emergent Pause

BY FRANK H. ANDORKA JR.
ASSOCIATE EDITOR

While there are no new chemistries available, you can still increase the efficacy of your springtime herbicide applications

Don't plan on seeing any new out-of-this-world pre-emergent herbicide products on the market any time soon. Experts say the current in-this-world products work just fine and that research for pre-emergent technology peaked five years ago.

But this doesn't mean current technologies can't be tweaked and that there aren't tricks of the trade (such as creative tank-mixing) that will help superintendents increase the efficacy of existing products. And it doesn't mean that pre-emergent manufacturers won't try to fill niche markets and replace products destined for the Environmental Protection Agency's blacklist.

Peter Dernoeden, professor of turfgrass management at the University of Maryland in College Park, Md., says that although current products work well, there are trends to suggest that even the old chemistries could stand some improvements. Despite the advances, pre-emergent herbicide products still seem to fail superintendents once every five years, he says.

Dernoeden says that's not because the products on the market are bad. It's just that researchers don't have a full understanding of the interaction between environmental factors — such as wind, rain and soil temperatures, among others — and those products. Therefore, when the environmental conditions combine to inhibit a product's effectiveness, problems occur.

"Most of the products on the market are good performers," he says. "It will be hard to improve on what is being used already, but there are some opportunities."

Above: Experts say herbicide companies will tweak old chemistries and move into niche markets, such as pre-emergent products for putting greens.

Dernoeden says a niche market for companies would be pre-emergents for putting greens. Superintendents are wary of applying pre-emergent herbicides on greens for fear of killing them, he says. A product that alleviated that fear would be a significant breakthrough.

Tom Watschke, professor of agronomy at Penn State University in State College, Pa., says more products that combine pre- and post-emergent control would also be valuable additions to the arsenal. If the two control mechanisms were combined, it would allow superintendents to wait longer before applying the chemicals because they could kill whatever had sprouted while still controlling weeds in germination. In addition, they could target specific areas of a golf course instead of spraying it entirely.

In an era when government restrictions will limit the amount of chemicals that golf courses can use, the surgical-strike approach will find favor with regulators, Watschke says.

"We're moving into a world where a blanket approach to weed management will no

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longer be acceptable," Watschke says. "The EPA is looking for precision in treatments, and a pre/post emergent combination helps do that."

Some superintendents successfully mix pre-emergent herbicides with post-emergent products to maximize the control, Watschke says. Herbicides could also be fine-tuned to focus on specific types of grasses, such as goosegrass.

"If you get south of the transition zone, goosegrass is a bear," he says. "None of the products [available] control it enough."

Nick Christians, professor of turfgrass culture at Iowa State University in Ames, Iowa, says there will also be a move to biologically based products, such as corn-gluten meal. The EPA's increased restrictions on chemical use has spurred more research in this area. Christians is researching the efficacy of corn-gluten meal and other grain byproducts.

"Corn-gluten meal seems to have many of the same pre-emergent capabilities as some of the synthetics," Christians says. "We're still studying the long-term effects."

But superintendents shouldn't expect any radical breakthroughs soon. Roch Gaussoin, associate professor of turfgrass at the University of Nebraska in Lincoln, Neb., says the industry has hit a down cycle in developing new pre-emergent herbicide products. More energy is spent on insecticides and fungicides because that's where manufacturers make money more quickly.

"Companies are sitting back and asking themselves whether the industry needs another pre-emergent product," Gaussoin says.

Part of what is inhibiting new products is cost, Christians says. The cost of development of a new compound is nearly $40 million. Without a proven plan to make that money back, most companies aren't willing to take on that commitment, Christians says.

"Developing a turf-only product means taking a great financial risk," Christians says. "That's why you see so many products that can be used in a number of different markets. The companies are trying to maximize their return on investments."

Watschke says the recent consolidation of chemical companies has also inhibited work on new products. The last chemical breakthrough for pre-emergent herbicides was the creation of a compound that was safe for creeping bentgrasses, Watschke says. Now the goal of most companies is to tweak current chemistries to comply with government regulators' concerns.

"What you're going to see in the industry is a move to lower the rates of pre-emergent herbicides necessary for control," Watschke says. "The industry is heading toward making existing products more affordable and safer without hurting the efficacy." ■