

Pre-emergent herbicides: Now taking time out of the application equation

By MARK LESLIE

Sounds like the sales pitch for a Lamborghini:

"You can stop it on a dime..."

"It brings much lower environmental loading..."

"Bigger windows (of opportunity)..."

"It's in a class by itself."

Indeed, some of the pre-emergent herbicides on the market today are in a class far beyond products available to golf course superintendents even as they entered the 1990s.

"A lot of the new pre-emergents are so-o-o good..." said one Midwestern superintendent.

So good at what?

- So-o-o long-lasting.

Pre-emergents are available that can be applied not only in the early spring but the previous fall.

"You gain a lot more flexibility about when you can apply it. You don't have to push your germination window as hard to feel confident that you can have season-long control," said Joe Yoder, Sandoz's manager of technical service and product development for specialty products. "If someone has a real busy spring and has a difficult time in getting around to all of their needs, this allows them to apply back in the fall

"It doesn't mean they can't come back

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— Joe Yoder, Sandoz Agro

in the spring and touch it up if they want to. But it can, for instance, be the first round in their goosegrass control program."

The traditional pre-emergents did not work if they were applied too early and the soil temperatures didn't get up high enough, or if it rained. The timing was all temperature-related and soil temperature-related because it was predicated on when the [weed] seeds germinate.

- So-o-o low-use.

"We see use rates continuing to go lower," said Bob Gordon, sales representative for Rohm & Haas, which produces Dimension. "Depending on your application, the rates are as low as 1/8 pound per acre. The high end is only one-half pound per acre."

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Triazole-based fungicides: Just too good to be true?

By MARK LESLIE

In a classic example of "icing on the cake," scientists have proven that fungicides in the triazole family not only fight turf disease, they also increase establishment and growth of cool-season turfgrasses.

Drawing on several years of research analyzing the effects of various products on new turf establishment, Dr. Richard E. Schmidt of Virginia Tech in Blacksburg, Va., said: "We're producing stimulation [of turfgrass] using relatively low rates of materials."

Schmidt, of the Department of Crop and Soil Environmental Sciences, specifically tested the triazoles propiconazole (Ciba's Banner), triadimefon (Miles' Bayleton) and cyproconazole (Sandoz's Sentinel), as well as seaweed-extracted cytokinin.

Not only did the triazoles fight systemic fungi and improve growth, they helped drought and salt tolerance in the bluegrasses, ryegrasses and bentgrasses tested, Schmidt said.

The researcher explained that triazole is a sterol inhibitor. "When

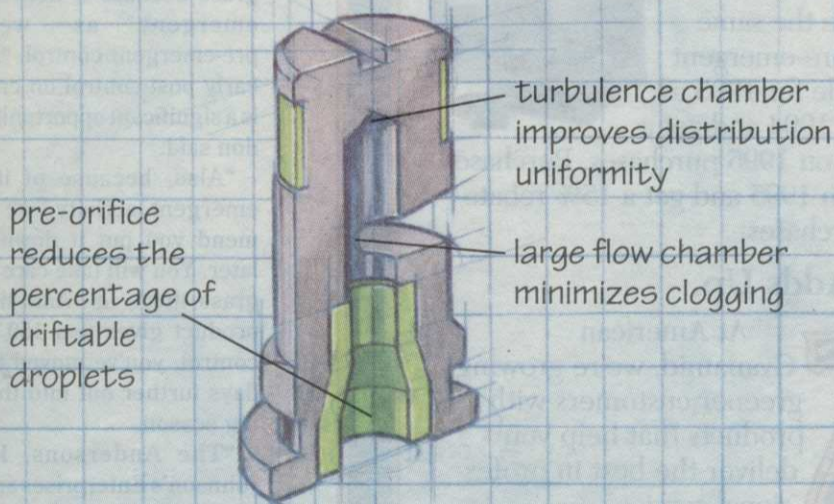
you reduce sterol biosynthesis within a plant, the membranes are more fluid. And this improves moisture relationships," Schmidt said. "Triazoles also reduce saturation of fatty acids in the lipids. This makes membranes more 'fluidy.' So we have more water going into the cells, then more electrolytes also go in... The plant then retains more water and is therefore more drought-tolerant."

Regarding salt tolerance, he said: "We've established and confirmed that [triazoles] reduce sterols and saturation of the fatty acids, creating more double-bonding. However, the biggest factor we're finding is that we're tremendously increasing the anti-oxidants within the plant."

"We have demonstrated that grasses stimulated to have high concentration of anti-oxidants can tolerate saline irrigation. When a plant gets into a hazardous situation, it will start creating anti-oxidants. But we can improve that 200- to 400-fold," he said.

Tests also indicated that plants treated with triazoles used more car-

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How to make pre-emergents more effective

By MARK LESLIE

Superintendents can save cost, equipment and manhours through innovative use of pre-emergent herbicides. Yet there are some warning signs — beyond the need to adhere to their labels.

- Some pre-emergents stunt root growth. Compensate by adding phosphorous. Also, remember the best root growth is during the spring, so that warm weather in itself will help.
- Do not use a pre-emergent in a sprigging situation, says Jeff Cook of Sandoz Agro, Inc.
- In places with an historical problem with winter kill, an application would make it difficult to reseed or resprig in that area.
- In areas where winter kill is typically not a

problem, an application can be timed to control some of the winter annuals, including poa annua and chickweed

- Superintendents who conduct fall overseeding of their greens, but not their fairways, can edge their greens with the herbicide so golfers don't track seed off.
- Similarly, they can spray wasteland bunkers or sand traps, so people don't carry weed seed into the traps.
- On courses where fairways, but not roughs, are overseeded they can spray the first 20 or 30 feet of the roughs.
- Combine pre-emergent products that have different characteristics to get the best of both.

Pre-emergents open whole new world of time

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"The biggest news about Barricade in the turf market is, we gained complete clearance for all turf and ornamental usage for up to 2.3 pounds annually," said Jeff Cook, Sandoz Agro's business manager for Barricade. "Where we had rate restrictions, we now have full clearance one time. For turf and ornamentals, this will allow the user to get

control for an entire season, particularly in the South. This opens a whole new market."

- So-o-o effective geographically.

"I think you will see increased activity across the nation with Dimension," said Gordon. "New split-application labels are available everywhere but in California."

"Those labels will improve the efficacy of the product."

Rohm & Haas Turf and Ornamental Product Manager Janet Giesselman pointed to new registration for Dimension in California and New York, except for Nassau and Suffolk counties.

Barricade is for cool- and warm-season turf. "It is flexible enough in its rates of application that you can use it from the Gulf of Mexico to the Canadian border," said Yoder.

- So-o-o insoluble.

Insolubility means that even with very moist surface turf, the new pre-emergent herbicides will stay where they are applied. In the past, superintendents might have had to wait weeks for the right conditions to apply the products. "[Barricade] does not move," said Cook. "You can get phenomenal control. In fact, we have had to be precise about the rates because the tendency for products with two to five pounds is, you can't just make it 1.5 instead of 1.25. You will get precisely what you put down."

"It's very controllable. It controls, then stops on a dime."

- So-o-o versatile.

Dimension is particularly effective, for instance, against crabgrass because it delivers post-emergent as well as pre-emergent control. "And the early post-control on crabgrass is a significant opportunity," Gordon said.

"Also, because of its post-emergent activity, we recommend you put it down a little later. You will take care of crabgrass that's up. And since the product gives you 150 days of control, you've moved that 150 days further out into the growing season."

"The Andersons, Howard Johnson's Enterprises and Lebanon are buying Dimension and coating fertilizer with it," said Giesselman.

"The smaller the particle size of the fertilizer, the better the dispersion; the better the dispersion, the better the efficacy."

- So-o-o safe.

"The new products are bringing with them a much lower environmental loading," Yoder said.

Referring to the Environmental Protection Agency's rating of materials for their ability to induce tumors, Giesselman noted that Dimension ranked Category E — the safest toxicologically.

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