



Call in the Specialists

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Researchers see most companies refining herbicide formulations to meet a changing market that relies on targeted applications rather than broad-spectrum efficacy

BY FRANK H. ANDORKA JR., MANAGING EDITOR

Bruce Branham, associate professor of turfgrass science at the University of Illinois, wonders what will spur the next revolutionary herbicide chemistry. It's not that he believes the major chemical companies aren't working on fresh ideas.

It's that the older products have controlled most weeds, so it will be difficult to dislodge the old standbys with new chemistries. "We can control almost every weed problem with existing chemicals," Branham says.

But challenges still remain for superintendents. According to researchers, environmental regulations are restricting more broad-spectrum herbicides than ever before.

As a result, manufacturers and marketers are pulling back some of their support of these chemistries in favor of chemicals designed to battle specific weeds. Companies are also starting to combine herbicides with other products to increase their effectiveness.

All of this appears to be good for the environment, but at least one expert questions whether the move away from broad-spectrum herbicides will actually reduce the products' environmental impact.

Broad-spectrum conundrum

David Gardner, assistant professor of turfgrass science at The Ohio State University, says the move away from creating new broad-spectrum herbicides started a decade ago.

"We haven't seen any significant additions to our broad-spectrum herbicide controls for a long time," Gardner says. "It's still the same old six that we've had for years."

That poses a problem when the EPA calls on chemical manufacturers to review information on those chemistries, Gardner says. Although herbicides are the least vulnerable chemistries to be removed from the market (fungicides and insecticides come under far more scrutiny), Gardner says the removal of just one formulation from the market would be a huge loss. "When you start comparing the loss of one broad-spectrum herbicide on a percentage basis, it works out to something like a 17-percent loss of the total market," Gardner says.

John Stier, assistant professor of horticulture at the University of Wisconsin, says more manufacturers are backing away from supporting broad-spectrum products. The costs of reregistering them with the EPA aren't offset by the potential profits.

"Since the Food Quality Protection Act of 1996 (FQPA), the EPA has to review all existing chemistries," Stier says. "They're putting the traditional chemistries under the microscope and evaluating them under tough standards. That makes it difficult for companies to justify the extra expense of reregistering them."

Branham says some companies are working on alternative formulations in anticipation that they may lose some current chemistries in the future, but the replacements aren't likely to be quite as effective.

"You'll have some similar products crop up, but you won't necessarily have the same efficacy," Branham says. "We're pretty fortunate that the losses so far haven't had a huge impact on the industry — yet."

Stier also adds that if broad-spectrum herbicides are pulled off the market, there aren't clear alternatives for turf managers.

"You're going to see an increased market for alternative products that aren't as closely regulated as the chemicals, so we're not sure how well they actually work," Stier says. "You have to wonder how much progress we're actually making."

Branham adds that new product launches have slowed to a trickle largely because the market is well-covered.

Specialty herbicides and combination products

Considering the costs of bringing new products to market, companies may shy away from creating new broad-spectrum controls, Stier says

"They're turning to other alternatives," he adds. "One of those alternatives is cre-

ating weed-specific herbicides and combining other products with them.”

Gardner says he expects more companies to combine existing products and form new chemistries that supplement each other’s strengths, either by destroying a wider variety of weeds or by enhancing an ability to kill one class of weeds. Companies are also combining herbicides with other chemicals such as surfactants, which he says help the herbicides become more fast-acting and more effective.

Branham says he has also seen a trend toward manufacturers tweaking chemistries to reduce their volatility and making them more effective.

“I’ve seen some efforts to improve specific herbicides under specific conditions,” Branham says. “One herbicide in particular is trying to reduce the potential for volatility you get from some of the liquid formulations by developing one that uses a microencapsulation technique to



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Companies are moving to create herbicides to kill specific weeds like dallisgrass.

give superintendents more consistent results and better activity over the long haul.”

Is this the right way to go?

Though Stier agrees that reduction in active ingredient rates of herbicides is a good idea in general, he wonders whether it can be universally endorsed for all chemicals.

“This has to be looked at on almost a case-by-case basis,” Stier says. “In the past, we could eliminate the weed of interest

and also other weeds we didn’t know we had with a broad-spectrum herbicide.

“With specific herbicides, superintendents have to make sure they properly identify the weeds they have,” Stier adds. “As a result, we may have to make multiple applications, which may actually increase the amount of pesticides used.”

Stiers adds that a move away from broad-spectrum herbicides may cost more in time and labor to apply the specific products than to use a broad-spectrum product.

“Reducing the active ingredient in general is a good thing for the environment, but it complicates the job of the superintendent,” Stier says. “Instead of spraying every three to four weeks, you have to go out there and spray every five to seven days. Since the public perception is that all pesticides are equally bad, it’s going to take an educational push to make sure they understand we’re continuing to be safe even though we’re spraying more often.” ■



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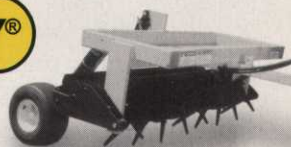
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