



The Lowdown on Low-impact Pesticides

They're environmentally friendly,
but they add dollars to the budget

BY PETER BLAIS

Times have changed in the chemical business. Just ask Kyle Miller, a market development specialist with BASF.

"Ten years ago, you would have never seen a sign on the first tee reading: 'Pesticides are applied routinely on this golf course.'



If you have any questions, call the superintendent," Miller says. "But superintendents today are learning to be much more up front about such things to head off potential problems."

One of the main ways superintendents are demonstrating more environmental awareness is the use of low-impact pesticides. These environmentally friendly products include a variety of recently developed fungicides, herbicides and insecticides that provide preventive and curative activities while requiring low use rates and extended application intervals.

The EPA is a driving force behind the development of low-impact pesticides. It eliminated the use of certain products like Diazinon, which was banned several years ago on golf courses and sod farms because of concerns over bird kills, according to Rick Brandenburg, professor and turf entomologist at North Carolina State University. The federal agency also severely limited the use of other traditional course chemicals, like Dursban, reducing maximum use rates

of the insecticide from 4 pounds per acre to 1 pound per acre.

"That virtually eliminated its use for soil-insect pests like grubs and mole crickets," Brandenburg says. "The 1-pound rate isn't high enough to be effective. You can still use it for things like cutworms, but [the ruling] took it out of the use pattern for many soil pests."

To replace these and other traditional products, many of which controlled a broad spectrum of pests and required wide applications, manufacturers have developed more pest-specific products requiring lower application rates in more limited areas.

For example, Bayer's Merit works well against white grubs and mole crickets, Brandenburg says. "But you can't use it against cutworms or army worms," he adds.

MACH 2, developed by Rohmid, is effective against grubs and will kill some caterpillars. "But it won't get mole crickets," Brandenburg notes.

There has been a shift in thinking, Brandenburg notes.

"In obtaining a more favorable environmental profile, we give up a little in terms of broad-spectrum application," he says. "That means a superintendent may need a larger product inventory because there's no such thing as one product that gets them all."

Kevin Downing, director of grounds at Willoughby GC in Stuart, Fla., says a larger in-

An obvious goal of low-impact pesticides is to make them less of a threat to humans and wildlife.

ventory translates into higher costs.

"You have more items to take care of specific problems," he adds. "We have one herbicide we would like to combine with two or three others and make a single application. But the directions say you can't combine it with anything else. You can't tank mix it with anything because the mode of action of the chemical is different. So that means more labor and man-hours per application than you would use with a broad-spectrum herbicide."

Reduced-risk registration

To get a product registered as reduced-risk, a manufacturer must prove it's safer than the product it's replacing, says Mike Daly, brand manager of the Turf and Ornamental Division with Bayer Professional Care.

"If you can demonstrate that you have such a product, EPA will shepherd it through the process on an accelerated schedule," Daly says. "You can get a label

much quicker with a reduced-risk pesticide."

Bayer's Compass fungicide took roughly a year to register, Daly says. It was developed from a substance mushrooms produce that inhibits other fungi from invading the area where the mushrooms grow. It's specific to fungi and doesn't affect mammals. The use rate is low — 0.15 ounces per 1,000 square feet.

"In some cases that represented a 95-percent reduction in pesticide load compared to the older contact fungicides it replaced in the marketplace," Daly says. "So the total amount of product placed in the environment was greatly reduced, and it was developed from substances that don't have a direct effect on mammals. That's reduced risk."

The high cost of bringing low-impact chemicals to market, however, has increased the final bills to golf courses.

"New products are going up in price largely because of the cost of obtaining

EPA registration," says David Ross, technical manager with Syngenta's Turf and Ornamental Division. "It generally costs \$50 million to \$60 million to get a new product registered."

Adds Miller, "Bringing a new product to market is more expensive than ever because it must have reduced environmental impact and yet give good control."

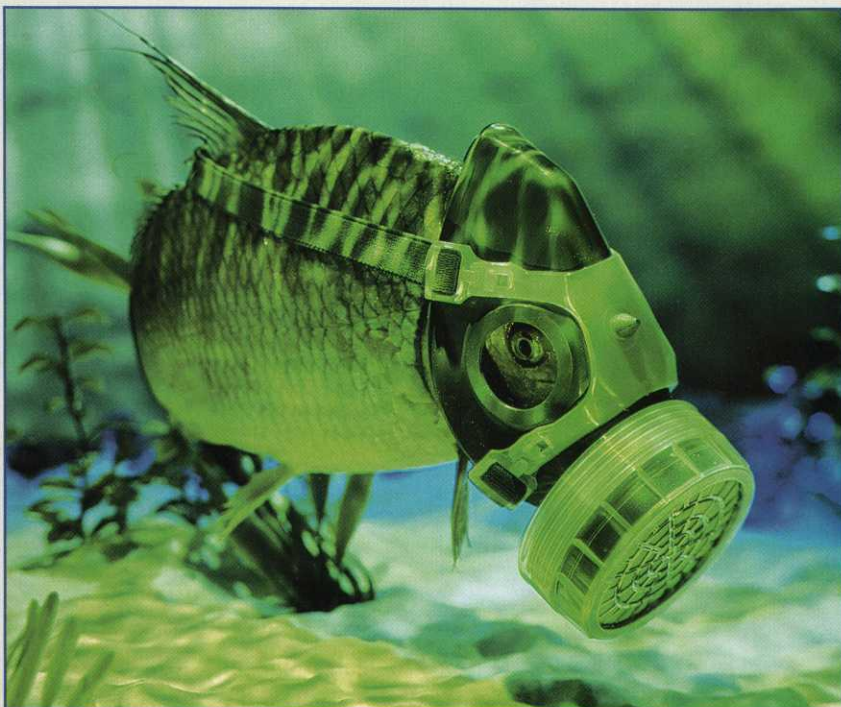
That higher price tag can ultimately affect whether a course decides to go forward with a given treatment.

Downing mentions a particular insecticide that controls only mole crickets and costs \$325 per acre to apply. Another nematocide he'd like to use costs \$400 per acre.

"At \$400 per acre, how many acres can you do without jacking the green fees up to \$150," he asks. "You can't do it, so you don't do it." ■

Blais is a free-lance writer from North Yarmouth, Maine.

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