

## Chlorpyrifos re-assessment continues to move forward

By ANDREW OVERBECK

With the initial public comment period completed, it is now up to the Environmental Protection Agency (EPA) to decide what use restrictions, if any, to place on the widely-used organophosphate chlorpyrifos. In the

coming months, the EPA will evaluate the comments it has received from end users and industry and environmental groups and then will release a revised risk



assessment that will likely include proposed mitigation measures.

As a group, golf course superintendents have been vigilant in their support of chlorpyrifos, known to them as Dursban and an effective method to

combat cut worms and other pests.

Many do not want to see Dursban go the way of Diazinon, which was banned from use on golf courses in the late 1980s.

"Diazinon was the first choice and when it was banned, superintendents turned to Dursban," said Terry Buchen, president of Terry Buchen Golf Agronomy International in Williamsburg, Va.

Another change will not come easy.

"It is one of our primary insecticides. I am familiar with it and I have never looked into using anything else because I have always had good results," said Carl Tegetmeyer, superintendent at Holiday Hills Resort and Country Club in Branson, Mo.

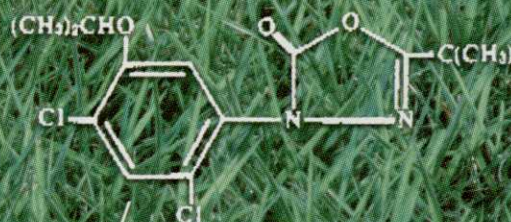
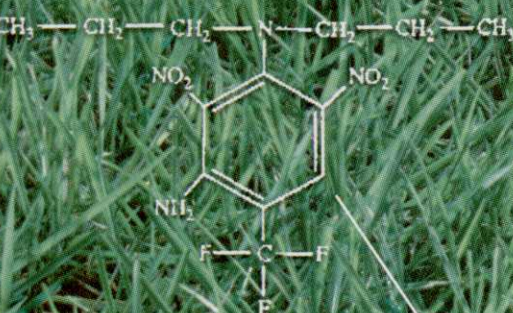
"We have had significantly more comments sent in with chlorpyrifos than on other compounds that have gone through the process," said Tim Maniscalco, manager of government and public affairs at Dow AgroSciences. "A good amount of these have been from superintendents ... the Golf Course Superintendents Association of America (GCSAA) has done a good job to get the word out about how the process worked and what was at stake. We have had great user-group response."

Through its government relations department, the GCSAA has been instrumental on getting the word out. "We are waging an intensive war," said Carrie Riordan GCSAA government relations manager. "We sent out e-mails to our 600-person government relations network and all of our 101 chapters and their

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## New courses

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Saying that "market forces, economic forces and the highest and best uses of property dictate what developers will do," Singer added: "There are a lot of 18-hole facilities now. You might see more alternative facilities of all different types and configurations.

"What should be done is highly localized. But, certainly, all types of facilities that cater to all different levels of skill, ability, time commitment, willingness to participate, etc. have to be considered as part of that equation."

Because of the onslaught of new 18-hole facilities, Singer said a number of nine-hole courses have trouble competing.

That could explain the number of nine-holers that have been expanding to 18 the last few years.

Construction was "equally distributed regionally" around the country, Singer said, basically proportionate to population.

LaFoy thought golf course development has also received a boost because of positive feelings among the public concerning the industry's sensitivity to the environment.

"I give superintendents and architects a lot of credit," he said. "One thing we've done that is telling, in the Northeast in particular, is showing we can build environmentally friendly and safe golf courses." ↑

GOLF COURSE NEWS

## No-mow grass

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the other half, that would be great," said Mangum.

According to Neff, it may be possible to dial in exactly the amount of growth you want. "These grasses need to grow, or you will never be able to propagate them," said Neff. "There are promoters that determine where and when the gene is expressed,

so you might be able to hook up this gene with a different promoter and regulate its expression with the application of chemicals."

Cutting down on growth, however, may not mean a drastic reduction in the frequency of mowing.

"To a large extent, mowing is done not only to combat top growth, but to make the turf look

tidier. You may be able to get away with mowing only four times a year, but in between that, the turf is going to look pretty ratty," said Dr. Doug Brede, research director for Jacklin Seed.

### THE FUTURE

Neff and his colleagues are working on transferring the gene to rice plants and expect that it will be five to 10 years before a modified turf variety is available

on the market. Among his concerns are human and animal safety, disease resistance, regulatory issues and marketability. The risks of hybridization with native plant species will also be studied in the coming years.

"We will be looking at how the gene works in a number of different plant species, including trees and grasses," said Neff. "Once we have accomplished that, we hope

to attract a private biotech company that is interested in pursuing this further and actually moving it into the varieties of grass that people would be using. Then we can get into product-driven research."

Turf scientists, meanwhile, remain cautiously optimistic. "Until they get some of these things out of the lab and see what they look like in practice, I am not going to invest my money in it just yet," Brede said.

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## Chlorpyrifos

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government relations liaisons."

The GCSAA also submitted a comment on chlorpyrifos stating that it was a valuable pest control tool and that user exposure risks are not high.

Going forward, chemical reassessments under the Food Quality and Protection Act of 1996 (FQPA) will continue to affect superintendents and the GCSAA will be on full alert.

"We will be conducting a survey that will gather information on chemicals that are coming up for review ... it should be helpful to the agency to show chemicals are being used effectively and safely," said Riordan.

In addition to chlorpyrifos, several chemicals are in EPA's re-assessment pipeline: acephate (Orthene), ethoprop (Chipco Mocap), fenamiphos (Nemacur) and trichlorofon (Dylox and Proxol).

In the meantime, Dow is proceeding with various studies to avoid any use restrictions on chlorpyrifos. Dow has commissioned a Nebraska laboratory to conduct human tests to determine chlorpyrifos' possible side effects on people.

"One of the elements of FQPA is that the EPA wants to have more information about compounds. One of the things lacking is non-food exposure data," said Maniscalco. "We are trying to fill in these data areas and we are continuing to do studies and tests on these compounds."

While human testing has proved controversial with the EPA, Maniscalco insists that the tests are safe and have to be done.

"We go through medical board reviews and up until now these have been accepted by the EPA," said Maniscalco. "Ultimately this gives us a much wider margin of safety because we have greater confidence in relating the animal data to humans. It is one of the most-studied pesticides."

If everything goes smoothly, the EPA should release its revised risk assessment by March or April. That will be followed by another 60-day public comment period and subsequent review period after which the EPA will issue its final assessment on chlorpyrifos.