

GCSAA water study confirms...

Pesticide runoff, leaching are minimal

A GCSAA-funded water quality study confirmed the results of previous research that pesticide runoff and leaching to ground water from golf courses is minimal, and when detected, at levels that are usually well below health advisory standards.

Researchers Stuart Cohen, Ph.D., Amelia Svrjcek, Tom Durborow and N. LaJan Barnes analyzed data from 36 golf courses, all in the United States with the exception of one on Prince Edward Island, Canada.

The group analyzed water quality monitoring data for the pesticides, metabolites, solvents and nitrate/nitrogen used on courses.

Summaries of data were also obtained from Guam and Japan, but were treated separately. The results were published in the November issue of *Golf Course Management*.

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and 25 exceeded guidelines for aquatic organisms.

In the surface water samples, there were no readings of nitrate/nitrogen levels above the federal drinking water standard, while just 31 of 849 groundwater samples exceeded the standards. The results from Guam and Japan were similar.

GCSAA Director of Research Jeff Nus, Ph.D., said the study was the first attempt at a comprehensive examination of water quality on golf courses. Past research, with similar results, was limited to just one geographic region.

Still, Nus said this most recent study was not meant to be national estimates for golf course impacts on water quality.

"Based upon previous scientific research funded by the United States Golf Association, GCSAA had contended that properly managed golf courses do not pose a discernible health risk, and in many cases improve the quality of water," Nus said. "This latest study is important because the data analyzed from surface and ground water from golf courses support the results of the previous USGA-funded studies under carefully controlled laboratory conditions."

Nus said three factors largely explain the positive results of the study:

1. Golf course superintendents are educated, licensed and regulated in the application of golf course chemicals—therefore they judiciously employ their use and adhere to science-based course management practices.

2. Healthy turfgrass acts as a good filter of water, thereby removing pollutants. Additionally, chemicals in water are broken down by microbes in the turfgrass ecosystem before they reach water sources.

3. The U.S. Environmental Protection Agency intensely scrutinizes all pesticides before they are registered for use.

"These results should not be used to support a relaxation of environmental stewardship by superintendents, especially when one considers the geographic data gaps," said Cohen, President of Environ-

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While this study is significant, Nus said additional scrutiny is likely. The issue of water quality for all uses (golf courses, industry, agriculture, etc.) is receiving considerable attention from researchers. He indicated that the United States Golf Association has contributed major funding to the issue of pesticide and nutrient fate.

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