

RESEARCH REPORT

Gray water on the green

Golf course superintendents help scientists decide between rose-colored glasses and a jaundiced view for recycled water.

BY DARCY MEEKER

When contaminants showed up in groundwater near drought-ridden Tampa, nobody knew where they came from, but there were lots of instant theories.

One possibility was the treated effluent (“gray water”) used as irrigation water at a number of sites including some golf courses. Some sticky questions are at stake. Is gray water bringing those contaminants with it? Is it changing soil bonding characteristics so that materials leach through more rapidly? Or is the data flawed?

The FGCSA moved quickly toward the only cure for fear: true truth and real reality.

Cooperators are Florida’s Department of Environmental Regulation, the Department of Agriculture and Consumer Services which licenses pesticides, and the U.S. Geological Survey.

“The purpose of the study is to poke around in the gray water area a little more. We’ll compare golf courses with similar soil types and management practices, where the only difference is that one uses recycled effluent and the other doesn’t,” said Tom Latta, chairman of external affairs for the Florida Turfgrass Association.

“The objective is to replace questions and fears with data and answers so we don’t have to work on fears and speculations, but can answer with hard scientific fact.”

Latta listed two ideas that need to be investigated.

“One idea is that, as you apply pesticides to soil and turf, you build up communities of organisms which break down these pesticides. Gray water may have some ingredient which kills these organisms and prevents breakdown of those pesticides.”

Another hypothesis is that gray water may gum up the soil. Sites in the soil which normally bind the pesticides may be pre-empted by components of gray water. Soil that used to filter out pesticides would then allow the chemicals to pass through.

“The important thing to remember in all of this,” Latta says, “is that this is a research project which is trying to develop some insights on some theories, but the theories may not be proven, and even the concern may not be confirmed. The data may be flawed. The monitoring wells that were in place are in place because of the need to monitor effluent. They’re not designed for highly sophisticated,

sensitive, groundwater monitoring studies.”

Latta said, “What we may be seeing here are problems of sampling technique or well installation, rather than pesticide leaching.”

Other data Latta has seen from sandy soils show very little evidence that pesticides leach.

“So far, in my exposure to the data, there’s very little evidence of pesticide moving below the root zone. Soil is a good filter, but you can saturate the sponge. If you irrigate much heavier than you should, you can wash the pesticides down through the absorptive layer before they can be absorbed.”

Turf management is urban agriculture, Latta said, and it’s especially important to make sure it is environmentally compatible since high concentrations are nearby.

Chip Lewison, golf course superintendent at Dunedin Country Club, is cooperating in the project.

“They want to collect good quality data to help set future standards. We provide background information on maintenance, use and levels and so on as a guideline as to what we (the golf industry) are doing or not doing to affect groundwater contamination.”

Lewison said, “What I’ve been trying to do is talk with some area supers who have monitor wells on their courses — what they are testing and what some of the results might be.”

Lewison said the data surfacing within the last 18 months has brought the subject to light, but golf course superintendents had discussed the

subject in Anaheim, Calif., in January, 1989.

“We knew it was going to become more of a problem and decided we’d better start collecting data, and keep ourselves abreast of people who are against pesticide usage and so on. We want to avoid the scare tactics some people are using and we want to see if we’re doing something that is harmful.”

Lewison pointed out that most of the products used on golf courses can be bought by homeowners at garden stores. “We buy in larger quantities, and we’re trained and certified — we get four to eight hours of classes and testing every year. That’s the difference between us and the homeowners.”

Mark Jarrell, super at Palm Beach National GC, says he has been doing testing for some time and turf seems to be insurance against groundwater contamination.

“We’re trying to do our part to make sure our use of products and materials is going to be for the benefit of everybody and not end up causing problems for other people down the road. We’ve put a lot of money and research into research.”

Jarrell cited a study of golf course effects on groundwater in Cape Cod. Some 19 wells on 30-year-old golf courses were tested for 17 turf chemicals. Of these, seven were not found, one was at 20 percent of the health advisory level (maximum healthy exposure) and the rest were 6 percent or less of HAL.

DER officials wanted to wait until a formal report was ready to comment.

Red-eyed flies secure beachhead in Bradenton



Some golf courses near Bradenton have busy little silent partners helping them control mole crickets, those brown burrowers who cost Floridians over \$40 million per year, browning out golf courses, lawns, pastures and vegetable fields.

In October, 1988, entomologists from the University of Florida’s Institute of Food and Agricultural Sciences released a biological control agent at the IFAS Research and Education Center in Bradenton.

The result: “red-eyed flies,” *Ormia depleta*, a natural enemy from mole crickets’ native chomping grounds of

IFAS biologist Sue Winewriter

