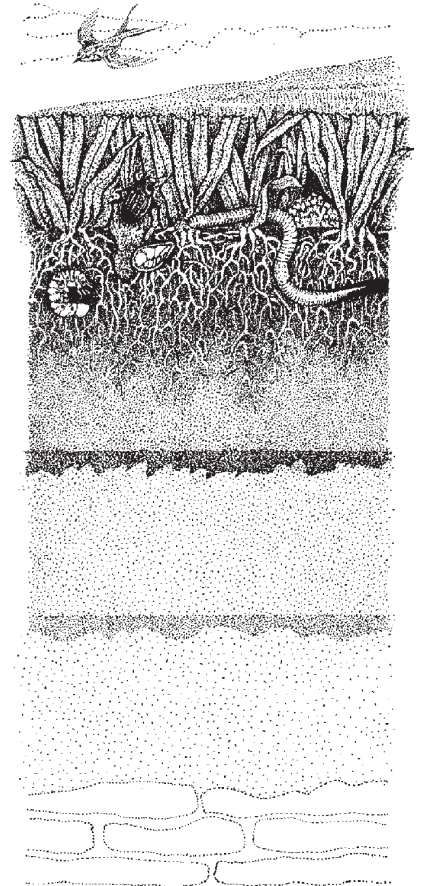


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The Role of Turfgrass Management in Water Quality

Much concern has been raised over the impact of turfgrass management practices on the environment. Of special concern is the impact of turfgrass practices on the quality of both surface and groundwater. If we look at the importance of clean water to everyone, then the concerns are truly important. Almost all of our drinking water in the United States comes from surface or groundwater supplies that are tapped by individuals or municipalities. ■

On the average about half of our drinking water comes from surface water sources (streams, ponds, lakes). The other half comes from wells that tap into groundwater. In rural areas groundwater accounts for about 95% of the drinking water supply. When a water supply is contaminated, the options available to correct the problem are often extremely expensive. Thus, it is imperative that turfgrass management programs be developed that do not contaminate water supplies.

The turf maintenance chemicals that threaten groundwater are fertilizer elements like nitrogen (N) and phosphorus (P), and pesticides. The potential health risks associated with N involves nitrates - the form of N that leaches into groundwater. Nitrate has been shown to cause the disease known as blue baby syndrome or methemoglobinemia in infants less than 3 months old. Nitrate and P are also linked with algal population explosions in surface waters that can limit recreational uses, and indirectly affect the health of many other aquatic organisms. The extent of

health problems associated with pesticides in water is of great concern and not fully understood.

The knowledge surrounding the fate of fertilizers and pesticides applied to turfgrass is growing. At Cornell University, we have been focusing on the fate of nitrogen fertilizers applied to turfgrass for the past five years. More recently, we have also studied the leaching potential of several pesticides.

Nitrate Leaching

Results from early studies on Long Island showed that a heavy application of a highly water soluble N source, like urea, in the late fall can result in a substantial amount of nitrate leaching by early spring. If slow release N sources were used, however, there was very little nitrate leaching. Current fertilizer recommendations were modified from these results. Turf areas grown on sandy soils should no longer receive

This Times

1. *The Role of Turfgrass Management in Water Quality.*
A. Martin Petrovic,
Department of Floriculture and
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2. *Short Cutts*
3. *Scanning the Journals*
5. *Pest Watch*
6. *New York's Top Twenty Ryegrasses*
Norman W. Hummel, Jr.,
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