TURF MANAGEMENT AND THE ENVIRONMENT: EPA PERSPECTIVE

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1990 marks the 20th Anniversay of Earth Day. The public demonstrations on that day twenty years ago signaled a concern for the environment that led to the creation of the U.S. Environmental Protection Agency. EPA was charged by Congress to protect the nation's land, air and water systems. The agency strives to take actions which lead to a compatible balance between human activities and the ability of natural systems to support and nurture life. Maintaining this balance is the key to solving problems resulting from our desire to develop land.

The Office of Pesticide Programs has a unique role in the agency. Other offices regulate toxic substances which have been or are being introduced into the environment and seek ways to clean up areas where toxic materials have accumulated. OPP regulates all pesticides prior to their use. The risks and benefits of these materials are evaluated, and if they meet our stringent standards, we have the authority to register them. If we become aware of data that indicate cause for concern, we can take a variety of actions to mitigate risk.

The creation of the Office of Pollution Prevention last year has given a new dimension to our search for ways to protect the environment: preventing pollution at the source means, for us, promoting careful husbandry of the approved pesticides. One of the best ways of doing this is through integrated pest management, which I will discuss in a monent.

Lets look briefly at federal statutes that affect turf managers. These include:

A. The Federal Insecticide, Fungicide and Rodenticide Act as amended in 1978 (FIFRA).
B. FIFRA 88; the reauthorization amendments voted by Congress in 1988.
C. The Endangered Species Act.
D. The Groundwater Protection Act.

FIFRA directs EPA to provide for the registration of all pesticides. EPAs Office of Pesticide Programs regulates their sale, distribution and use, and establishes criteria for their registration by EPA, review of pre-existing registrations (by USDA prior to 1972) and procedures for modifiying the registration. It also provides for identification and disposal of suspended products.

The reauthorization of FIFRA provides for accelerated reregistration of older pesticides, expedited registration of "me toos" and minor amendments, and provides for reregistration and maintenance fees to be collected from registrants, based on use and market share. The funds thus raised go toward supporting the above programs.

The Endangered Species Act is administered by the Fish and Wildlife

Service. It contains a directive to all federal agencies to protect endangered species. For OPP this means we must develop a plan to protect endangered species from the adverse effects of pesticides. States are given the option of recommending alternate plans to EPA if they choose. EPA has increased the staffing of Regional Technical Experts whose job is to work with the states through the regional offices to develop these plans.

The Groundwater Protection Act is administered by the Office of Groundwater Protection, which is a part of EPA's Office of Water. This act charges OPP, under FIFRA, to determine where pesticide use is adversely affecting groundwater. If pesticides are causing problems, OPP expects to require the state to develop a pesticide management plan; otherwise the registration of such pesticides may be cancelled for that state. Again, the regional technical experts will work with the states to develop plans.

OPP, working with the Groundwater Protection Office, has developed several programs to determine the extent of groundwater pollution in the U.S. These include state monitoring programs, development of a groundwater data base from examination of reports from all sources, and the national pesticide well water survey. These programs are all directed toward agricultural use of pesticides, but ubran applications are not necessarily excluded. The list of priority pesticides that have a high potential for leaching includes many pesticides which are registered for turf use as well as food crops use. An examination of EPA's list of major lawn care pesticides indicates most are also food use pesticides and some one-fourth to one-third have been detected in the well water survey. An even greater number (about 50%) have shown up in the data call-in program with the states.

What does this tell us about the future use of turf pesticides? Since EPA is charged with managing the use of pesticides to prevent further contamination of groundwater, there will be further restrictions on their use. The kind and extent of restriction ranges from making more registrations, restricted use, to altering the label directions, cancelling (which means no further production), or even suspending others (which means removal of existing stocks from the market).

The maintenance fees for small companies have caused concern, and products with low profit margin or small sales quantity may be dropped by these companies; other products will be cancelled by companies because the registration fees and testing requirements make them unprofitable. Accelerated reregistration may lead to further restriction, cancellation or suspension.

In addition, the turf manager will find that learning how to use pesticides is becoming more complex--not all information will be on the label. The user will be referred to other documents such as a countu booklet on local endangered species.

Applicator exposure to carcinogens is coming under new scrutiny.

States are exercising their authority to further regulate the use of pesticides beyond federal restriction by passing posting laws and right-to-know laws, and by requiring detailed management plans to obtain permits for construction of recreation sites such as golf courses.

Land development poses a threat to the preservation of wetlands, which are also protected under federal law by EPA.

What can turf managers do?

For continued use of pesticides, you should continue to take advantage of your organization's professional development programs so that you can comply with the laws and be able to devise professional management plans.

You should also look at possible changes in turf management that can minimize the need for pesticides or eliminate the use of those that adversely affect groundwater or endangered species. Note that many of the pesticides found in groundwater are no longer being applied, especially to golf courses. The newer registrations are generally less persistent and less likely to leach.

Perhaps most important, you should work to improve our knowledge of what is actually applied and what happens to it. Keep written records of what you apply where, when, how much, and how effective it was. Where possible, monitor your runoff and your subsurface water. Provide us with data to support your contention that pesticide applications to turf are not excessive and are not contaminating water supplies. Document your management. EPAs decisions are based on data provided by users as much as data we collect. If groundwater and endangered species problems or health effects problems are caused by pesticide application other than by professional turf managers, we need documentation. It is difficult for EPA to enforce label restrictions on use by the homeowners.

The Office of Pesticide Programs contains a Program Communications Branch under the Field Operations Division. We are charged with communicating information about pesticide programs, restrictions, etc. and also with using technology transfer to design programs that lead to more sophisticated use of pesticides. This process involves Integrated Pest Management (IPM).

We define IPM as an ecological, systems approach to pest management which takes advantage of all appropriate pest control options, including, but not limited to chemical pesticides. Through use of biological controls, development of pest-resistant species, alteration of cultural practices, and chemicals if required, IPM can prevent unacceptable pest damage cost-effectively and with the least possible hazard to man and the environment.

We include in our program, eight steps to pest management, which in your case might better be termed Integrated Turf Management.

In our experience, all eight steps must be implemented to be most effective. Omission of portions of the system, in our experience, has led to greater, unnecessary dependence on repeated pesticide treatments. The eight are as follows:

Send data to U.S.EPA, c/o Anne Leslie, Office of Pesticide Programs, H-7506C, 401 M St. SW, Washington, DC 20460.

1. Define the roles of all the people involved in the pest management system (i.e., occupant, pest manager, decision maker), assure understanding and establish communications between them.
2. Determine the management objectives for each of the specific areas of the site as a basis for deciding on possible control methods for the pest.
3. Set action thresholds--a point when pest populations or environmental conditions indicate that some action must be taken; no action is taken until that point is reached.
4. Monitor the site environment and pest population on a periodic, consistent basis to determine when the action threshold is reached and to determine whether the action taken is effective.
5. Take action that modifies the pest habitat to reduce the carrying capacity of the site, exclude the pest, or otherwise make the site environment incompatible with the needs of the pest.
6. Take appropriate pesticidal action. A preferred pesticide would provide the longest dwell time in contact with the pest while presenting the least possible hazard to the people, property and the environment. It should be applied when the pest is in its most, vulnerable stage.
7. Evaluate the results of the habitat modification and pesticidal treatment actions by periodically monitoring the site environment and pest populations.
8. Keep written record of site pest management objectives, monitoring methods and data collected, and the results obtained by the pest management system methods.

This program is the key to developing thick, healthy turf that research has shown to be a buffer against pesticide and nutrient runoff and leaching that is the major concern of both citizens and the government that serves them. I believe you recognize the importance of addressing these concerns. Risk, in the minds of all of us, is measured in terms of hazard and outrage (as explained by Peter Sandman in his analysis of risk communication). Until we address the outrage factor by improved communication and increased involvement of all who are affected by our actions, our efforts to explain risk in terms of scientific measures of hazard will fall on deaf ears. Your most important job in the coming years is communication.