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A Challenge for Pesticide Management

by

Herbert M. Austin

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The Challenge for Pesticide Management

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ABSTRACT

Pesticides have improved our lives immeasurably reducing disease vectors, protecting agriculture, and improving our home environment. The risks have been addressed, but as more sensitive instrumentation became available during the 1960's it became apparent that the intended target was often not the only organism to be effected. Legislation and Federal regulations have helped to remedy the situation; regulations however, are a reflection of the attitude of the administration in office, and can of course, change dramatically every few years. An example is the recently adopted *Chesapeake Bay Basinwide Toxics Reduction Strategy*. It has been signed by Federal administrators and the governors of the basinwide states. How it performs remains to be seen. Without toothfull enforcement legislation, regulation, and strategy are just paper. A combination chemical/non-chemical system like Integrated Pest Management (IPM) offers a challenge for future, long term environmental protection. Pest managers must move away from the "do it until enforcement stops me" attitude, and toward an application that is best for the environment.

The Challenge for Pesticide Management

I have to say, that most of my contact with pesticides is when a garden store burns and pesticides are released, they are spilled on the roadway, or there is a fish kill. It's nice to address a group that view pesticides as something normal. As the wrap-up speaker for the day I must say that I've learned a lot. I never knew there were so many creepy-crawlies that chewed on pine needles or rose bushes; and I had no idea there were so many new ways of safely applying insecticides on yards, gardens, and bushes.

Since it's late I'll be brief and relate to you the Chesapeake Bay concerns, particularly as they relate to pesticides. What I see (my personal opinion) as the political mood with regard to regulations, and what I see as the outcome as it relates to people like yourselves.

Pesticides have improved our lives immeasurably reducing disease vectors, protecting agriculture, and improving our home environment. The risks have been addressed, but as more sensitive instrumentation became available during the 1960's it became apparent that the intended target was often not the only organism to be effected. Legislation and Federal regulations have helped to remedy the situation; regulations however, are a reflection of the attitude of the administration in office, and can of course, change dramatically every few years. For example, the recently adopted *Chesapeake Bay Basinwide Toxics Reduction Strategy*. How it performs remains to be seen. Without toothfull enforcement legislation, regulation, and strategy are just paper. A combination chemical/non-chemical system like Integrated Pest Management (I'M) offers a challenge for future, long term environmental protection. Pest managers must move away from the "do it until enforcement stops me" attitude, and toward an application that is best for the environment.

For most of Virginia the Chesapeake Bay is the ultimate, final repository of all chemicals broadcast into the environment. In fact, it has been suggested that pesticides have been a significant factor in the decline of living marine resources in the Chesapeake Bay. There was no comprehensive monitoring plan or evaluation until the mid-1970's when a concern was expressed that herbicides were suspected of contributing to the decline in subaquatic vegetation (SAV). Atrazine, Alachlor, and Metolachlor are, by weight, the predominant pesticide species that enter the Bay.

While the direct communication of pesticides from target organism or surrounding habitat to human consumer or pets is a problem, the linkage is understood. Less tractable is the problem of atmospheric deposition, surface runoff, and

groundwater discharge to the Bay. Pesticides are transported by the atmosphere as a result of wind drift during application or by volatilization after application. Most pesticides, particularly atrazine, found in the tributaries of the Bay are the result of surface runoff from land. Over half of the freshwater entering the tidal Chesapeake Bay originates from groundwater seepage. Because of the spatial and temporal variability of groundwater discharge it has been impossible to develop estimates of pesticide volume entering the Bay by this means.

Program costs are always an overriding consideration when we want to track or monitor chemicals. Monitoring agricultural pesticides in groundwater wells, for example, cost \$100-300 per sample, as compared to nutrients that run around \$20 per sample. Consequently, monitoring has often been spotty. The Virginia Pesticide Control Board determined, in 1990, that the disposal of unusable and banned pesticides was a serious environmental hazard. A pilot disposal project determined that the average cost would run \$5.26/pound for disposal. There are over 300,000 pounds of these pesticides in Virginia stored by the agricultural community alone.

In January 1989 the Chesapeake Executive Council adopted the *Chesapeake Bay Basinwide Toxics Reduction Strategy* which is based upon the 1987 Clean Water Act. This agreement was signed by the governors of Maryland, Pennsylvania, and Virginia, and the mayor of Washington, D.C.

Pesticide Management:

The *Basinwide Strategy* cites the contributions pesticides (insecticides, herbicides, fungicides, and rodenticides) have made to society, and the need for appropriate use and application. Particular focus is applied to the need for effective reduction or prevention of runoff or leaching from the site of application into local waterways where the impacts to estuarine systems may occur, at distant sites.

Specifically:

Objective: Manage the use of pesticides to prevent adverse effects on living resources and human health within the Chesapeake Bay basin.

To accomplish this objective the plan calls for:

- * Establish voluntary integrated pest management (IPM) practices on 75% of all agricultural, recreational, and public lands with the Bay basin, by the year 2000.

- * Establish a goal for implementation of IPM practices on commercial and residential lands, by 1995.
- * Implement collection and disposal programs, establish regional-based pesticide container recycling programs, and implement best management practices (BMP) in each CB jurisdiction throughout the watershed.

In your positions as those that sell and apply pesticides commercially and to residential consumers, you are buffeted by political winds of change. One administration that "favors government regulations" and one that "gets the government off our backs". The current regime in Virginia is the latter. The current administration's Secretary of Natural Resources has made the public statement that jobs are a Virginia natural resource; and the governor has been shown in the media as equating the Environmental Protection Agency as a wall, blocking Virginia jobs. The previous talk, showing new application hardware, is the result of government regulations requiring safer application tools, and which has resulted in new products and jobs as a result.

The challenge of pesticide management is to bridge elected administrations with programs that are both cost effective for applicator and environmentally sound for the receiver. I don't see a loss of jobs as we try to effect pest management that is protective of the Chesapeake Bay. Implementation of the *Chesapeake Bay Basinwide Toxics Reduction Strategy* by localities distant from the Bay, yet on the watershed (most of Virginia) will, while helping the Bay provide a cleaner environment, also provide a stable multi-jurisdictional applicator-user-receiver effort.

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