

My view

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Integrated Pest Management (IPM) was launched formally with a national conference on the subject held in 1971 at North Carolina State University in Raleigh, chaired by Dr. Robert L. Rabb, a prominent insect ecologist. An outgrowth of this conference was the development and subsequent funding by the USDA in 1972 of a research effort commonly referred to as the "Huffaker Project," after the leader of the project, Dr. Carl Huffaker of the University of California. This project was mainly an entomological effort resulting from observed insecticide resistance among several species of insects, primarily in cotton.

Early in the Huffaker Project, some entomologists realized that weeds were indeed a problem, and began soliciting weed science input for a follow-up project that was funded in 1976 by the EPA and later, the USDA, called the "Adkisson Project." The Adkisson Project was led by Dr. Perry Adkisson, an entomologist from Texas A&M University. This project provided the first real funding for weed scientists in IPM. Research projects involving weed scientists were funded in soybean, cotton, alfalfa, and apples from the Adkisson Project. When Adkisson Project funding was cut in 1982, some of the money was transferred to the USDA regions and became the regional IPM programs that are still in force today in the northeastern, southern, north-central, and western regions.

The USDA has established a goal of having 75% of U.S. cropland acres under IPM by the year 2000. Whether that is a reasonable goal or whether any goal should be acreage based is a subject for debate. Nevertheless, that goal has been established, so it is reasonable to consider what can be done to reach it. A look at National Agricultural Statistics Service figures for 1995 shows approximately 310 m acres of cropland in the U.S. Of those acres, 71.2 m are in field corn, 69.3 m in wheat, 62.8 m in soybean, 59.8 m in hay crops, and 16.9 m in cotton, for a total of 280 m acres, or a little over 90% of the total cropland acres. Over 71% of the acreage is in field corn, soybean, wheat, and cotton. These figures tell us that unless we bring a majority of these major crop acres under IPM, we do not stand a chance of reaching the USDA's goal.

The data on pesticide use in the aforementioned four major acreage crops offer a telling view of the relative importance of the different pest types in each crop. In field corn, herbicides are used on 98% of the acreage, compared to 27% and less than 1% for insecticides and fungicides,

respectively. Percentages of acres treated with herbicides, insecticides, and fungicides in soybean are 98, 2, and 1, wheat 49, 11, and 1, and cotton 94, 71, and 10, respectively. Clearly, weeds are the major pest type in all of these major acreage crops. Therefore, just as clearly, weed scientists should take on a leadership role in defining and implementing IPM policy.

Even though a few weed scientists have benefitted from funding of IPM-related projects, and some new weed management technology has been developed as a result, IPM philosophy and funding today remain basically an entomological stronghold. The greatest share of IPM money annually goes to entomology researchers. For instance, only eight of 45 projects currently funded by the regional IPM programs involve weed management, compared to 28 projects with emphasis on insects. National IPM policy is dominated by entomological rhetoric. Why? Mainly because weed scientists have not taken time to become a mainstream component of IPM at the regional and national level. There are several reasons why this is the case, chief of which is the relatively small number of weed scientists compared to entomologists and plant pathologists, and we are all very busy. However, I believe another significant reason is the relatively comfortable level of funding most university weed scientists have from industry, commodity groups, and the like. We simply have not been hungry enough.

The time has come for weed scientists to take the leadership role in IPM implementation. Because weeds are the primary pest in the majority of crop acres, a diversified weed management program is the key to successful IPM implementation at the farm level. What do we need to do? First, we need weed scientists placed in at least two of the USDA regional IPM coordinator positions now occupied by entomologists. Second, we need to have weed scientists in half of the state IPM coordinator positions (we now have two of 45 such positions occupied by weed scientists). Third, the USDA IPM initiative coordinator position should be occupied by a weed scientist. Fourth, a weed scientist should be placed in charge of the newly created USDA Office of Pest Management. Finally, weed scientists need to participate in IPM policy decisions made at the national level. We must attend and become active in IPM regional and national meetings, and become more vocal in promoting diversified weed management as the key to successful IPM implementation.