Going Areawide Makes IPM Goal Practical

In 1994, the U.S. Department of Agriculture set the ambitious goal of implementing integrated pest management (IPM) on 75 percent of the nation's farmland by the year 2000.

That goal seems more attainable when one realizes that by IPM's common definition, farmers have already implemented the program on half of their croplands. It describes IPM as a system combining many crop pest control strategies with careful monitoring of both the pests and their natural enemies.

But that definition has been viewed as being too broad. So USDA will issue a new working definition for IPM later this year—one that spells out the specifics of a variety of components.

Meanwhile, the areawide IPM program begun by the Agricultural Research Service in 1993 is doing its part to help farmers meet that bold 75-percent goal.

Areawide IPM is the brainchild of Edward F. Knipling, a retired ARS pioneer in insect control. One of his major achievements was development of the sterile-male release technique to eliminate screwworm and other insect infestations in many parts of the world.

Knipling realized that for most pests, eradication is out of the question. So in the early 1980s, he developed the concept of using specific insect parasites, predators, and other tactics over a broad area to keep pest populations below the point where they impose a financial burden on farmers and ranchers. Kept at low levels, the pests would be more responsive to biological, rather than chemical control.

Today, the areawide concept has grown to include not only parasites and predators, but also other environmentally friendly tactics, such as mating disruption and insect attracticides.

At the same time as Knipling pressed his case in the 1980s for areawide pest management, a series of small-scale IPM pilot projects produced several successful technologies, including the corn rootworm bait featured in this issue's cover story. Then, in 1993, ARS decided the time was right for major areawide IPM demonstrations.

A USDA areawide IPM working group was formed, with representatives from ARS; the Cooperative State Research, Education, and Extension Service; the Animal and Plant Health Inspection Service; state agricultural experiment stations; and other agencies. The group discussed the best approach for implementing such a program and suggested several key pests for consideration and further review by members.

The basic idea behind areawide IPM is to have all or most of the farmers in a large area simultaneously implement the program, so pests have no safe haven or alternative food source.

ARS launched the first areawide IPM attack against the codling moth, a pest in apple and pear orchards, on 7,700 acres in the Pacific Northwest. This issue's cover story describes the program's second major assault—against the corn rootworm—on over 40,000 acres in the Corn Belt.

If an areawide IPM program were to be successfully launched against corn rootworms on all of the 20 million acres of U.S. cropland currently estimated to be treated with corn rootworm insecticide, a substantial portion of USDA's 75-percent goal would be met by this project alone. Fittingly, the project's fifth year, which will be the year 2000, is devoted to technology transfer. In that year, USDA, state universities, and county extension agents will be working closely with farmers throughout the Corn Belt, helping them launch a broad areawide IPM attack against the corn rootworm.

But the program isn't stopping there. ARS is also directing new areawide IPM projects that were selected using a panel review process. Included are an initiative against a complex of insects that raid stored grain in elevators throughout the Midwest and one against leafy spurge, a weed that now smothers millions of acres of rangeland in 29 states. The leafy spurge project includes about 46,000 acres in North Dakota and Wyoming, with more acreages to be added when sites are selected in South Dakota and Montana.

An earlier project targeting the cotton bollworm and tobacco budworm has been under way on as many as 200,000 acres near Stoneville, Mississippi, for the past several years. That project predates the official ARS areawide IPM program.

Bringing 75 percent of the nation's farmland under integrated pest management remains an ambitious goal. But by implementing areawide projects that strike pests like the corn rootworm, codling moth, leafy spurge, and others on an areawide basis, the goal should become even more within our grasp.

Robert M. Faust
National Program Leader for Field and Horticultural Crop Entomology