

Future challenges

Although the Project continues to produce research innovations, getting them integrated into practice is a challenge.

"There are relatively few sources of research funding to adapt the basic discoveries to meet real world needs," Zalom explains. "Managing time and resources within UC and finding new opportunities to permit the transfer of IPM knowledge will be a major problem to be addressed."

Zalom has been careful to adhere to the mission that was established for the project by the California Legislature.

"External pressures are constantly challenging the program—financial, political and otherwise—and it would be easy to have the program inadvertently redirected to the problem of the moment or the most current political whim," he says. "It is essential that the program continue to take a long-term perspective of IPM, and continue to direct its attention to issues that will move us closer to the biologically based management of pests while enhancing the profitability of our agricultural community."

— Pam Kan-Rice

IPM leads overhaul of PCA licensing exams

Over the past four years, the UC Statewide IPM Project has coordinated a major overhaul of the licensing exams for pest control advisers (PCAs), with the explicit goal of incorporating integrated pest management (IPM) concepts.

"The state licensing exam didn't have questions that adequately tested a person's knowledge of the ecological basis for pest problems and solutions," says Mary Louise

Flint, director of IPM education and publications for the UC IPM Project.

Growers have historically relied on PCAs for information about applying pesticides, but in recent years PCAs have become increasingly important in the adoption of biologically intensive IPM programs, geared toward reducing agrochemical use.

The California Department of Pesticide Regulation (DPR) currently licenses more than 4,000 PCAs, who serve at least 40,000 growers and public agencies. At the urging of the California Agricultural Production Consultants Association (CAPCA), DPR and an ad hoc committee tapped

UC IPM to update the study materials and exams used to prepare and test PCAs; the materials had not been significantly revised in nearly 20 years, particularly with regard to IPM.

"The tests should be accurate and reflect current trends, practices and technology, rather than testing outdated practices," says CAPCA executive director Kim Crum.

Knowledge Expectations. The backbone of the project was the development of Knowledge Expectations, which define exactly what newly minted PCAs need to know for the licensing category tests. The process,

which took more than 3 years and thousands of hours, involved expert committees comprised of hundreds of pest management professionals from the industry, academia and regulatory agencies.

PCAs are licensed in one or more of seven categories: insects, mites and invertebrates; plant pathology; nematodes; vertebrate pests; weed control; defoliation and other harvest-aid practices; and plant growth regulators. With broad agreement that PCAs in every category need to be well versed in the concepts of IPM, the committees established Knowledge Expectations that crossed every discipline.

"For the first time, people preparing for the exam have a clear idea of what they need to study and instructors know exactly what needs to be taught," says Patricia Gouveia, senior writer for the UC IPM Project. (For more information, go to the licensing issues section at www.cdpr.ca.gov.)

In addition to Knowledge Expectations, the project included the following components:

- **Study guides.** Each expert committee reviewed and recommended study materials, and many exam guides are being updated as a result.
- **Exam questions.** Members of the expert committees developed a large pool of exam questions for each licensing area. DPR expects to implement the new exams in 2003.
- **IPM textbook.** Using the new criteria, Flint and Gouveia wrote *IPM in Practice*, the first IPM textbook for PCAs. The 280-page guide will be available early next year from ANR Communication Services.

The expert committees will continue to periodically review the Knowledge Expectations, providing a coordinated process for tracking the relevancy and currency of exams and study materials. This model is now being considered for the development of licensing programs for other professionals, such as pesticide applicators.

— Janet Byron

