Biotech offers new tools in battle against plants

LOS ANGELES — Ever since humans began growing food many centuries ago, the war against agricultural pests has been going on unabated, with no signs of a truce in sight. Despite enormous successes achieved through modern agricultural technology in controlling some of the pests, the struggle continues, says a Cornell University scientist.

"What's missing from this endless cycle of susceptibility and resistance is a clear understanding of both the disease-causing organisms and the plants they attack and of the molecular bases for their interactions," says Milton Zaitlin, a professor of plant pathology from the New York State College of Agriculture and Life Sciences at Cornell.

But, modern genetic techniques, more popularly known as biotechnology, may now offer new powerful tools to devise more effective pest control measures, he says. Such techniques make it possible to gain the fundamental knowledge of the pests and their hosts in terms of genetics, biochemistry, physiology, and the interactions between them, among others.

"It may be possible, in the future, to devise the methods for transferring desirable traits for resistance into crop plants and, conversely, to genetically program certain organisms to attach some of the pests, including weeds," Zaitlin predicts.

The Cornell scientist, who serves as associate director of Cornell's Biotechnology Program, made his observations in a presentation at the annual meeting of the American Association for the Advancement of Science (AAAS) in Los Angeles, May 26-31.

Zaitlin focused his talk on molecular basis of plant-pathogen interactions and modification of microorganisms for biological control in the AAAS symposium devoted to discussion of "**New Directions for Biosciences Research in Agriculture: High-Reward Opportunities,**" a new study undertaken recently by the National Research Council (NRC), the working arm of the National Academy of Sciences.

The study was conducted by a panel of 18 university and industry scientists headed by Ralph W.F. Hardy, a visiting professor of life sciences at Cornell and president of BioTechnica International, a Boston-based biotechnology firm. Cornell's Zaitlin, who was on the panel, served as chairman of the group's subcommittee on plant diseases and insect pests.

The NRC study, which stressed the need to step up research to develop further molecular genetic techniques, including recombinant DNA technology, said that what scientists can accomplish through these new tools is awesome, but it warned, "To be slow in acknowledging and employing the power of these tools would be to delay the progress of American agriculture."

Basing his presentation on his subcommittee's work on plant diseases and insects, Zaitlin said that at present American farmers obtain dependable crop yields using disease-resistant varieties, biological control practices, and pesticides to control plant disease, insects, weeds, and other pests.

The cost of pesticides, excluding weed-killers, in 1983 was $1.3 billion, he pointed out, adding that the potential crop losses in the absence of pesticide use greatly exceeds the cost of the pesticides used.

The tools of genetics and molecular biology, he said, now offer some new methods for gaining the basic understanding of the pests and their hosts (plants) in terms of genetics, biochemistry, physiology, and interactions between them, among other factors essential for devising new, more effective control strategies.

Among areas of research requiring major efforts ahead, as outlined by Cornell's Zaitlin, are:

- the molecular bases of the factors that determine resistance and susceptibility;
- the basic understanding of the interaction between the host plant and invading pathogen; and
- the transfer of resistance traits to susceptible plants through the development of organisms for use in carrying genes from one species to another.

Block to attend World Food Council meeting

WASHINGTON — Secretary of Agriculture John R. Block will visit the Netherlands, Belgium and France June 6-11 to attend the World Food Council meeting and to discuss farm products trade issues between the United States and the European Community.

"We face many issues regarding the agricultural trade relationship between the United States and the EC," Block said. "There is no substitute for face-to-face discussions. I am hopeful we can take steps toward easing tensions on both sides through open discussion."

In France, Block will attend the 11th Annual World Food Council Ministerial, an organization of 36 member nations that meets to discuss world food problems. The principal topic of this year's meeting is the food shortage in Africa and other areas of the world. "We have a number of important problems to address at the Council meeting in regard to world hunger," Block said.

Block will meet with Franz Andriessen, vice president of the EC Commission as well as EC agricultural ministers.

During his visit, Block will address a conference of U.S. and European journalists and the annual convention of the European Feed Compounders Association.

Correction

In last week's issue Kevin Martin's name was inadvertantly missing from the story on the 16 winners of the Farm and Home Foundation scholarships worth $1,000 each.

Kevin, 17, is the son of Mr. and Mrs. Clyde Martin, East Earl, and is a graduate of Garden Spot High School. He will study agricultural business management at the Berks Campus of The Pennyslvania State University. He has been active in the Future Farmers of America, and received his Keystone degree.

Market-oriented industry

(Continued from Page A10)

patterns of resource use and high cost producers would be kept in business at the expense of new, possibly lower cost producers. Given that the dairy industry produces almost exclusively for the domestic market and the problems encountered with base plans and allotments of some other crops, it is legitimate to ask if this is good public policy.

I might add, the National Milk Producers Federation commissioned and received on Oct. 1 an autonomous Study Committee report which analyzed Federal dairy support price programs and advanced recommendations for adjusting the programs to better serve their public purposes.

Let me quote one of their key recommendations: "The Study Committee dismissed supply management-supply control types of alternatives to dairy price support. Supply management by definition is a means of enhancing price and income to address economic problems in the producer sector. To the extent that producer prices are increased by such artificial means over a period of time, the demand problems facing the milk industry are exacerbated. The Study Committee positively and unanimously adopted a market orientation for price support, thereby excluding production control approaches."

Third, the proposal prescribes that all milk marketings will be assessed at a rate necessary to cover all the costs of the diversion program. This is effectively a tax on all producers. The voluntary diversion program which recently ended resulted in a 20 percent participation that was funded by all milk producers including the 80 percent of the producers who did not participate in the program. That is hardly a mandate for a supply management program.

Fourth, the proposal calls for a mandated increase in the Class I differential by including provisions in the Agricultural Marketing Agreement Act that would reimburse cooperatives for performing certain marketwide services. This would likely cause serious distortions in regional price and production patterns. And while this action would be beneficial to producers who are members of cooperatives in the Southeast, it would also work to the detriment of producers in other parts of the country, especially in the upper Midwest.

The dairy price support program is a national program and milk flows freely across state and political boundaries. As such, any workable solution to the dairy surplus problem must embody principles that will meet the needs of dairy producers and consumers, irrespective of location.

In conclusion, let me reiterate that I am unalterably opposed to this proposal. A mandatory supply management program will only result in more serious problems for the dairy industry. This proposal may be able to meet some budgetary spending limit, but it will ultimately be the taxpayers and consumers who will pay for this program, not to mention the adverse impacts it will have on our livestock industry, one of the most important sectors of our agricultural economy.

I sincerely hope that the National Milk Producers Federation and the entire dairy industry will reexamine this proposal and unite, once and for all, behind an approach that will best serve the needs of consumers, taxpayers, and most important, the dairy industry itself.

Task force to study structure

WASHINGTON — Secretary of Agriculture John R. Block, calling for a more streamlined and contemporary Department of Agriculture, today directed a special task force to begin an intensive review of the Department's structure and how it is meeting the needs of its modern constituency.

"We owe it to the farmer and the taxpayer to do a better job of delivering service," Block said. "Many of our program delivery systems at USDA are more than 30 years old. They have grown and evolved over the years with little evaluation of their effectiveness. It's time that we change that and take a progressive view of the department's structure."

The review process is being managed by a task force of key department officials named by Block. Working through special task group, the team will look at headquarters structure, program overlap, field structure, technology application and administrative support.

The intent is to reduce duplication and to provide the most effective delivery system. Maximum participation is creating and discussing the changes will be sought through constituent groups, USDA employees, unions and the Congress The Food and Agriculture Councils, working with interested constituent groups in their states, will be used in designing changes field level.