Corn Farmers Protect Land, Profits With Fewer Pesticides

CORN TALK NEWS
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UNIVERSITY PARK (Centre Co.) — During the last decade, Pennsylvania farmers have saved more than $17.5 million in insecticide by adopting a combination of natural and chemical methods to control the state corn crop's most threatening pest, according to a researcher in Penn State's College of Agricultural Sciences.

"Pennsylvania farmers spent almost $10 million treating 870,000 acres with soil insecticide to stop the corn rootworm in 1980," said Dr. Dennis Calvin, associate professor of entomology. "But 90 percent of our corn fields that year lost money on chemical rootworm-control methods."

To limit their expensive reliance on pesticides, field crop farmers worked with extension entomologists and county agents to reduce soil insecticide use through a method called integrated pest management, or IPM.

"IPM was started in the 1920s when the boll weevil was becoming resistant to pesticides," he said. "Chemical warfare research in the 1940s led to new insecticides like DDT. When DDT was found to be harmful to human health and the environment, federal and state governments resumed IPM research.

"To determine the best control methods, researchers study the pest's life cycle and rotations of other crops that discourage the target insect's growth on a particular piece of land," he said.

"For instance, IPM studies found the corn rootworm did not reach economically dangerous levels until the third year of continuous corn in most cases, and that it could not flourish in alfalfa or soybean crops," he said. "Since 1980, farmers have worked with extension entomologists and county agents to develop a seven-to-ten year crop rotation plan to save money and protect land from pesticides and soil erosion, and to control the rootworm and other pests.

"Today farmers typically grow corn on a particular field for two to three years and then scout for rootworm adults to see if a soil insecticide is needed," he said. "In many cases the rootworm population never reaches economically dangerous levels. So the farmer saves the cost and trouble of applying chemicals.

"Threatening insects also may be controlled by encouraging the growth of other insects that are natural enemies.

"Depending on the extent of a pest problem, IPM may recommend a single application of a specific amount and type of insecticide. Farmers then plant either alfalfa, soybeans or small grains for four-to-seven years on that piece of land and grow their corn on an unthreatened plot.

"We estimate this practice saved farmers $17.5 million on almost 1.6 million pounds of soil insecticide through 10 years," Calvin said. "For instance, in 1990 just 580,000 acres were treated at a cost of $6.9 million, with 35 percent of the fields operating above the economic threshold."

Calvin attended an IPM adoption meeting convened by the U.S. Department of Agriculture in Washington, D.C., to demonstrate strides Pennsylvania farmers have taken in pest management in the last decade.

He said that pesticide application estimates from the Environmental Protection Agency may be inflated because the figures reflect yearly chemical use and do not account for farmers who use the rotation strategy to apply soil insecticide once every seven to 10 years. He adds that many farmers prefer to either buy grain or harvest before pest infestation, rather than handle and pay for chemical pesticides.

"The primary business for most of these farmers is their dairy operation," he said. "Their main objective is to get enough silage to feed their cattle through the winter. If at all possible, they would rather not have to take time away from the dairy to apply chemicals, and they prefer not to use chemicals around their livestock."