Panel Combats Chemical-Resistant Pest

WASHINGTON, D.C.— U.S. livestock producers are being offered new strategies for their war on the horn fly, a cattle pest becoming resistant to pyrethroid insecticides, said a U.S. Department of Agriculture scientist.

Entomologist Sidney E. Kunz of USDA's Agricultural Research Service headed a panel of federal, state, and industry experts that devised the new strategies and has prepared a fact sheet describing them.

He said the fly's growing resistance to pyrethroids is a problem in all major cattle producing areas of the U.S. -- including Hawaii -- and in parts of Canada. Horn fly season begins as early as mid-March and lasts until the first frost in some areas, he said.

The strategies include not applying any horn-fly insecticide until flies become a serious problem, using compounds other then pyrethroids, and timing chemical controls to get maximum results and minimal resistance buildup. Kunz said the strategies can be use singly or in combination.

"Horn flies have adapted to chemicals intended to overwhelm them," he said. "They became resistant and through breeding they passed on this resistance to their offspring. Our panel's goals are to minimize the resistance problem while getting the best use out of existing insecticides." Kunz is director of the Knipling-Bushland U.S. Livestock Insects Research Laboratory that ARS operates in Kerrville, TX.

"These flies cost U.S. livestock producers about $700 million annually in reduced weight gains and milk production for nursing calves," he said.

The pests can reduce weaning weights of calves by 15 to 40 pounds, said University of Nebraska Extension entomologist Jack Campbell, who served on the panel. "At today's prices, that kind of loss can average $25 per calf," he said.

"Farmers and ranchers should start planning their pest control strategies now," said Kunz, "so the flies cannot breed future generations that could resist any class of commercial insecticide."

The panel, appointed by the chairman of the North Central Regional Research Committee 99 (livestock pest management), included experts from the Agricultural Research Service, Cornell University (Ithaca, NY), Oklahoma State University (Stillwater), University of Nebraska (North Platte), Fermenta Animal Health (Kansas City, MO), Y-TEX Corp. (Cody, WY) and Zoecon Corp. (Dallas, TX).

In the mid-1970s, technology developed by Kansas State University, Oklahoma State University, and ARS gave cattle producers ear tags that slowly released an insecticide. The first ear tags held organophosphates, effective against horn flies for 6 to 10 weeks. Then came pyrethroid tags, which controlled them for 16 to 24 weeks. In 1984 more than 50 percent of all cattle wore pyrethroid tags.

Ear tags quickly became popular because they were economical and effective and used 98 percent less chemical. But within two to three years, flies began to develop resistance, said Kunz.

Kunz said "heavy reliance on ear tags and the class of insecticides they held -- pyrethroids -- may have inadvertently helped the flies become resistant. But extensive use of any compound by any application method that simulates the ear tag intensity can and will cause similar resistance problems."

Federal, state, and industry researchers continue to study the problem and search for long-term, effective controls that will prevent buildup of insecticide resistance, he said.