University News
1987
NEWS AND PUBLICATIONS • 20 EDUCATION BUILDING • UNIVERSITY OF SASKATCHEWAN, SASKATOON, S7N 0W0 • PHONE 966-6202

RELEASE ON RECEIPT

SASKATOON, August 28 - Blackfly control in northeastern Saskatchewan this year is described as the best in a quarter century.

Saskatchewan Agriculture, which has been funding research into blackfly control, credits Professor Dennis Lehmkuhl and students in the Department of Biology, University of Saskatchewan. They have been working in the area for several summers, and have worked themselves out of a job.

They developed a new way of monitoring blackfly larvae, determined the stage at which they are most susceptible to chemical or biological controls, devised a better method of applying the controls, and identified a previously unknown breeding area. As a result, blackflies were virtually non-existent in the northeastern settled area this year. Basically, the affected area extends from Prince Albert east to Choiceland and south to Melfort.

"In some years, the blackflies were so numerous people could spend only limited time outdoors. Cattle did not gain weight because they refused to go out and feed, and breeding was adversely affected. When outside, they would cluster for protection, which put calves in danger of being trampled," Professor Lehmkuhl said.

Some blackflies bite, and can cause an immune reaction in cattle. However, this is rarely fatal. Nevertheless, the cost to agriculture in the area has been estimated as high as several million dollars annually.

The source of the problem is the Saskatchewan River system and tributaries, where the blackflies breed.

"The larvae live and feed in flowing water. They attach themselves to plants or rocks and feed on the particles carried downstream by the current."

In the past, infestations were monitored by placing lengths of rope in the river and each week counting the number of larvae attached to them. The researchers found that multiple strips of plastic tape, placed below the surface and collected after three weeks of exposure, work much better than pieces of rope, which tend to float on the surface. The plastic strips, attached to a buoy and anchor, provide more accurate information on larval development.

...OVER

Professor Lehmkuhl said the size of the larvae turned out to be much more important than their number in determining the best time to apply insecticide.

"A lot of the toxin is ingested when they feed. As they approach maturity, however, feeding declines, so if you wait until they are fully grown, enough may survive to cause major problems."

Insecticide is applied to the river upstream from the larvae. Failures were common until the researchers determined the optimum time and distance between applications. If either is too great, significant numbers of larvae can survive.

The research disclosed that the Torch River, a tributary of the Saskatchewan, is a "real hot bed" of larvae. This had been causing serious blackfly problems in the Choiceland area. However, the source was not previously known. The control program was successfully expanded to include the Torch River with applications of a bacterial insecticide.

It took about five years of summer research to develop the control system. The work provided part-time graduate student employment. It also resulted in two theses developed by graduate students who have now received advanced degrees in biology, one a Phd, the other a master of science. Travel was extensive. In 1986, the researchers averaged 1,000 kilometers a week.

This year, however, Professor Lehmkuhl acted as an advisor to a contractor who carried out the control measures.

-30-

NOTE TO EDITOR: Professor Lehmkuhl may be reached at 966-4408.