Control Horn Flies For Improved Cattle Performance

Horn flies are not merely annoying to cattlemen, they’re a serious economic problem, according to an entomologist with the New Mexico State University Agricultural Experiment Station.

“Our studies show heavily infected cattle gain one-tenth of a pound per day less than non-infected cattle. Also, a heavy population of flies can cause a 10 percent reduction in feed conversion efficiency,” said Dr. H. Grant Kinzer, director of the NMSU livestock insect laboratory.

“This tells us horn fly control is very important,” he said.

Products such as sprays, dust bags and cable rubbers for horn fly control have been around for a long time, but have never been widely used. It wasn’t until eartags were developed six years ago that horn fly control became commonplace.

According to Kinzer, who helped develop some of the early eartag technology, eartags are a kind of wonder product. The small tags, which resemble cattle identification tags, slowly release synthetic pyrethroid compounds. Inserted in the cattles’ ears, these tags provide season-long horn fly control.

“The key to the development of these eartags was the development of synthetic pyrethroids. These chemical compounds are terrifically active in small doses and combine easily with oils in the cattle hair, so they translocate easily,” the entomologist said.

The eartag method of horn fly control is so simple, effective and inexpensive that most cattlemen use it now, according to Kinzer.

However, in recent years scientists have seen a buildup of horn fly resistance to the synthetic pyrethroid compounds used in the eartags. Resistance is a serious problem in many areas of the country, but it is just now beginning to show up in New Mexico.

To help prevent resistance from building up, cattlemen should use another control technology—dust bags or cable rubbers charged with active non-pyrethroid insecticides—at mid-summer, Kinzer advised. This practice will kill flies developing resistance to synthetic pyrethroid compounds in the eartags.

“We know that if the horn fly is resistant to one synthetic pyrethroid compound, it is resistant to all synthetic pyrethroid compounds. So it doesn’t do cattlemen any good to switch brands of tags if they notice the one they have isn’t working,” he said.

He further advised cattlemen to always put eartags on according to the label rate, or at least one tag per animal; to put on eartags only after a fly population appears; to tag all mature animals and calves weighing more than 300 pounds; and to remove eartags at the first sign of control failure so that resistance is not allowed to build up.

“In eartags we have a wonderful tool for horn fly control. It is still working fine in much of New Mexico, but we don’t want to lose that technology,” the entomologist said.

One of Kinzer’s research thrusts at the NMSU livestock insect laboratory is to develop new eartag technology. At this time, he is working with third generation eartags which release a variety of compounds, some which are non-pyrethroids.

“We have some materials that are doing a creditable job controlling horn flies, but they may be a few years from the market,” he said.

At the same time, he is working to find some way to delay horn fly development of resistance to insecticides.

For example, one study will compare the rate at which horn flies develop resistance to single toxicants and alternating toxicant systems. This will require careful selection for 30 or 40 generations.

“Eartags provide a constant selection pressure, and that may be one reason the horn flies developed resistance so quickly,” Kinzer explained. “If we can find some material that requires them to evolve two or three levels of resistance, the product we develop would probably be effective for a longer period of time.”—Tina Prow

Editor’s Note: Another short article on this subject appeared in Rangelands, Volume 7, Number 3, June 1985, entitled “The Effect of Horn Flies on Cattle” by R.H. Robertson.