



Horn Fly Control

July 12, 2012

Our mild winter has led to more than our share of insect problems so far this year, and maybe one of the most severe problems I've noticed is the over-abundance of horn flies on livestock. This pest was introduced to the U.S. from France prior to 1886. It is half the size of the average house fly at only 1/8 inch long and can also be distinguished from house flies by their piercing mouth parts that resemble a beak. Horn flies are the most important arthropod pest of pastured beef cattle in the United States, with estimated annual losses of \$800 million in the U.S. They cause these losses through reduced cattle weight gains and performance due to blood loss and performance. They can also cause such problems as mastitis in non-lactating cows and reduced calf weaning weights due to reduced milk production (Researchers at the University of Arkansas documented a 17 pound reduction in calf weaning weights for every 100 flies feeding on the cow!).

Horn flies spend most of their time on the back, shoulders, and head of their host (most often cattle but also horses, sheep, goats, and dogs). Flies only leave the animal to lay eggs on fresh manure piles, those less than ten minutes old. A single horn fly can go through its entire life cycle in as little as two weeks and a female can lay up to 400 eggs. This greatly increases the risk of horn flies developing insecticide tolerance, especially in southern states.

Horn flies survive the winter as pupae in the soil and usually emerge as adults in mid-March with populations peaking in late May and early June. Their presence or absence is temperature dependent while their abundance is influenced by humidity and rainfall. During the hot and dry months, their populations normally decrease. Their populations will likely peak again in September or early fall as temperatures decrease and humidity and rainfall increase.

Because of these problems and potential losses, horn fly monitoring and control is critical to a productive and efficient cattle production system. The economic threshold for considering horn fly control in beef cattle is about 150-200 flies per head. The most accurate but difficult way to determine fly numbers is to do a whole body count on at least 10-15 cattle. Diagrams have been developed to help estimate fly numbers on cattle. You can contact the Extension office for more help on this. Fly abundance should be monitored weekly throughout the fly season. This will help producers determine when best to initiate control methods and provide early warning to potential insecticide tolerance.

Control methods include walk-through traps, insecticide-impregnated ear tags, self-treatment devices such as dust bags or backrubbers, and insect growth regulators (IGR's). Walk-through traps help control flies by dislodging them as the animal passes through the trap. The flies are then trapped in the sides of the trap where they die from starvation. This type of trap must be placed where cattle are forced to pass through, such as to access water or feed. Trials of these traps have shown to control fly populations by over 50 percent.

Ear tags are a popular control method because of their ease of use and their ability to provide several weeks of control by slowly releasing small amounts of insecticide. Common ear tags contain either synthetic pyrethroids (SP's) such as cyfluthrin or lambda-cyhalothrin, organophosphates (OP's) such as diazinon or fenthion, or a combination of both SP's and OP's. To prevent insecticide tolerance, you should only use them once fly numbers exceed the threshold of about 200 per head and target control to get the most out of them, such as treating lactating animals to help maintain calf weaning weights. You should also definitely consider rotating insecticide classes, meaning you do not use the same insecticide year after year. You should also make sure that if being used on lactating animals that the product is labeled for that use. You should also consider using other control methods in addition to ear tags to reduce tolerance risk. Do not handle ear tags without wearing non-permeable gloves and wash hands to prevent poisoning.

Self-treatment devices can be an effective and economical control method when used and maintained properly. Dust bags that contain SP and OP insecticides, back rubbers, and animal-activated sprayers are especially effective when used in forced-use areas such as gateways or water and feeding areas. You often have to get animals accustomed to these types of products which may take a week or longer.

Insect growth regulators (IGR's) such as diflubenzuron and methoprene are used to prevent maturation of fly larvae and are administered as feed additives and can be found in some protein/mineral blocks or as a separate product to pour over feed. Others are available as a bolus that you administer directly to the animal. These products are usually used prior to the first appearance of flies in spring and throughout summer. To be effective, cattle must consume a specific amount so you must pay attention to consumption and adjust the number of feeding stations or adjust feeding habits.

Other methods include the use of pour-insecticides and insecticide sprays. Follow similar recommendations to ear tags by rotating chemical products to reduce the risk of chemical tolerance.