

Ticks And Flies – The Scourge Of Man And Cattle Alike!



DR. TERESA L. STECKLER

SIMPSON, ILL.

Recently I have had the opportunity to travel to several farms and noticed that both ticks and flies are already especially abundant this year and annoying any unlucky bovine or human crossing their tracks. While we can reduce our annoyance by using insect repellents, our cattle are not so fortunate – unless preventative measures are taken.

What makes ticks and flies so dangerous is not that they feed on us but rather they can transmit a number of diseases. For example, most of us are familiar with tick borne diseases affecting humans such as Lyme disease and Rocky Mountain spotted fever.

However, cattle are also in susceptible to tick and fly borne diseases. Thus their control is important to the overall health of your herd and ultimately profitability. For example the horn fly alone is estimated to cause animal losses to the U.S. beef industry of \$700 million. The external parasites causing major losses in the cattle industry are ticks, horn flies, face flies, and stable flies.

Ticks cause blood loss, discomfort, and spread diseases in cattle such as bovine babesiosis, tick fever, Lyme disease, and anaplasmosis. Probably the best known of this list affecting cattle is anaplasmosis. Anaplasmosis is an infectious disease that causes the destruction of red blood cells. The disease is caused by a minute parasite, *Anaplasma marginale*, found in the red blood cells of infected cattle and other animals. Ticks as well as flies can transfer blood from infected cattle to others in the herd.

Tick control is extremely difficult in areas with high tick populations. High concentrations of ticks usually occur in brushy pastures and woodlands so habitat management is an important part of tick control. Control on cattle through persistent use of approved pesticides is achieved by spraying, ear tags, pour-ons, dust, and backrubs. A good residual insecticide is necessary to prevent infestation.

Horn Flies are about half the size of house flies and dark gray. They are blood-sucking flies that stay on the shoulders and backs of cattle almost continuously but may seek shelter on the underside during extremely hot weather or when it rains. When disturbed, horn flies will fly up in a swarm but they will return to the animals almost immediately. A horn fly leaves the back of a cow or calf only to lay eggs in fresh manure. Individual flies pierce the skin with their short, tube-like mouthparts 20 to 30 times per day to ingest a small amount of blood. Irritations from the bites annoy animals and occasionally, the wounds may become infected.

Studies have shown that horn flies have their greatest effect on growing animals. Weaning weights of calves with an average of 200 or more horn flies during the summer are about 15 pounds less than those that are protected from horn flies. The same type of impact has been seen on yearling cattle. In addition, horn flies can spread summer mastitis, which affects the mammary glands of non-lactating cows, and they have been implicated in the spread of anaplasmosis.

There are many effective options to keep horn fly numbers below the 100 fly per animal treatment threshold. Cost, convenience, and herd management practices, such as grazing rotation, can be considered when designing a control program that fits best. Several insecticide application options are available: insecticide impregnated ear tags, dust bags, concentrated pour-ons, animal sprays, and oral larvicides available in minerals and feed supplements. Ear tags and forced use dust bags have consistently give the best control but other methods can be effective, too. The choice can be made based on what works best with pasture layouts and herd management practices.

Face Flies closely resemble house flies. Face flies cluster on the faces of cattle and feed on secretions from the mucus membranes of the eyes, nose, and lips. Face flies do not suck blood. They do irritate the surface of the eyeball and play a role in the transmission of *Moraxella bovis*, the principal causal agent of bovine pink-eye or infectious bovine keratoconjunctivitis. This disease is a highly contagious inflammation of the cornea and conjunctiva of cattle.

Most of the time face flies are off of the ani-

mals, resting on plants, fence posts, or other objects which makes their control more difficult than horn flies. Much effort has been made using various insecticides and application techniques, such as dust bags, mist sprays, and wipe-on formulations. Also, insecticides and insect growth regulators are used as feed additives. However, results are usually less than satisfactory. The introduction of insecticide-impregnated ear tags has provided somewhat better control, but generally, seasonal face fly reduction of only 70-80 percent has been achieved, even with 2 tags (1 in each ear) per animal.

Stable flies are sometimes called biting house flies. The stable fly looks like the housefly and horn fly, but it is considerably larger. Also unlike these flies, its mouthparts resemble a bayonet that can be easily seen protruding from its head. The stable fly also resembles the deer fly and horse fly. However, stable flies primarily attack the legs of livestock; these other flies do not.

Stable flies are pests of cattle because of their bloodsucking activities. The mouth parts penetrate the skin allowing them to engorge on blood two to three times a day depending on the weather. Once full they move to a resting place, usually in the shade, to digest the blood meal. In addition to the blood loss, they annoy animals and interfere with their normal feeding behavior. All this results in weight loss or reduced weight gain and increased susceptibility to certain diseases. Stable flies also transmit a number of diseases such as equine infectious anemia and anaplasmosis.

The stable fly has a complete life cycle that involves egg, larva, pupa and adult. Eggs are laid in manure, spilled feed, hay and decaying vegetation, and this is the medium in which larvae develop. The larvae feed exclusively on decaying vegetation. Stable flies often breed in hay dropped by cattle while feeding from large hay bales. This hay becomes an ideal medium when mixed with manure, urine and rain. Remember that stable flies require a moist manure-and-soil or organic matter and soil mixture 4 inches to a foot deep. To reduce fly populations these areas and all pens need to be cleaned completely every spring. Manure should either be spread on the land to dry out or be piled and covered with plastic tarps for later disposal.

Dust bags, oilers, and insecticide-impregnated ear tags are less effective for the control of stable flies because these self-treatment devices fail to deposit the required amount of insecticide on the cattle's legs. Systemic pour-on and spot-on products are applied on the backs of cattle and provide better control where the insecticide is more concentrated. Thus, even though these products are systemic they give much better control for back feeding flies than leg feeding stable flies.

Products administered as sprays or mists can give some control of stable flies. However, stable flies prefer to feed on the front legs of cattle. When spraying a group of animals getting a good cover on the legs is very difficult. In addition cattle also have the habit of walking through water and wet vegetation, which quickly wash off the insecticide. Another problem with sprays and mists is that the products, even though residual, have a maximum protection of only a couple of weeks and bringing the cattle up once on pasture becomes very difficult if not impossible.

An integrated approach to pest management will be best for control of stable flies in pasture cattle. The cattle producer must incorporate animal management, sanitation, manure management, and the wise use of insecticides.

When making decisions about fly control it is important to realize that there are many effective programs. Producers should develop a program for their operations which is cost effective and most convenient.

Here are several tips to keep in mind for fly control and pesticide use: 1) Plan ahead for insecticide and ear tag purchases; fly season always comes, even if delayed by cool weather or rain; 2) Consult with your herd veterinarian regarding active ingredient(s) in products and their record of effectiveness in your area; 3) Always follow instructions, warnings, and precautions: these products can be toxic to you, your children, pets, and others working with them around the chute; and 4) Follow label withdrawal times and keep records of treatment dates, products and lot numbers. Δ

DR. TERESA L. STECKLER: *Extension Specialist, Animal Systems/Beef, University of Illinois*



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