Vet Call

► by **Bob Larson,** *Kansas State University*

Fly control for beef cattle herds

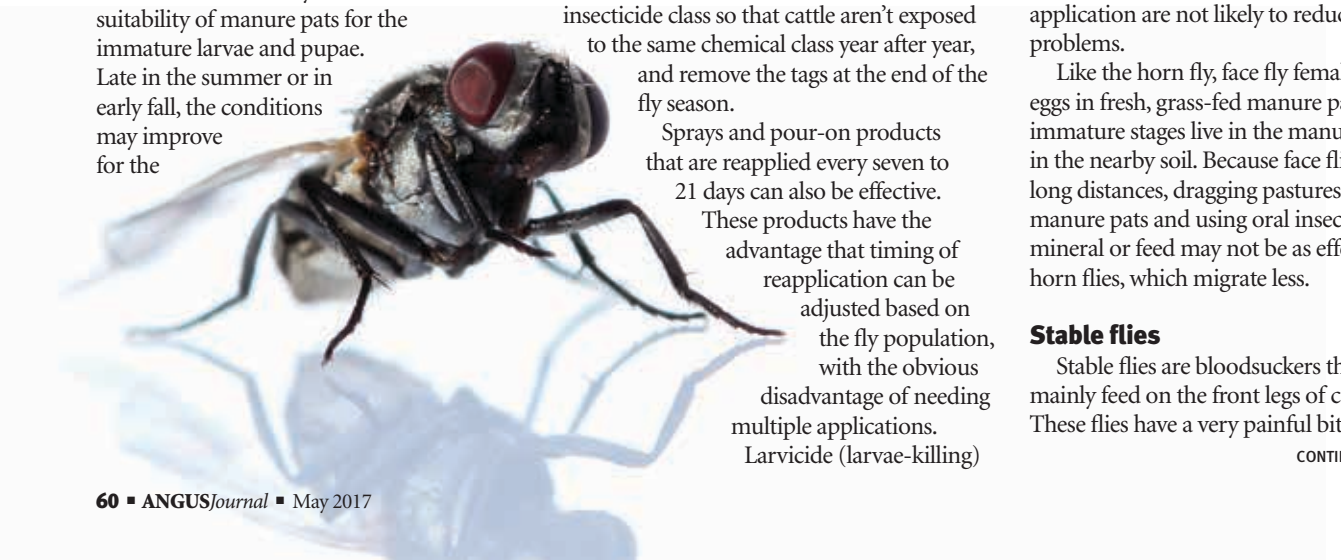
As summer approaches, cattle producers begin their yearly battle with flies. Several types of flies can cause irritation and pain, reduce weight gain and transmit disease-causing germs in cattle herds. Each of the fly species has unique characteristics that should be considered before the battle begins. As in many contests, knowing your opponent is critical to increase chances for success. Four of the most common fly pests for cattle in North America are horn flies, face flies, stable flies and horse flies.

Horn flies

Horn flies are biting insects that take more than 30 blood meals a day and spend almost all their time on the backs, sides and poll of cattle. When horn fly numbers become very large, cattle spend a lot of time and energy fighting them rather than grazing — therefore weight gain and milk production are reduced. In addition, these flies have been implicated in the spread of mastitis in beef herds. These flies seem to prefer adult cattle more than suckling calves, but when populations get very high, calves will be affected also.

Female horn flies deposit eggs in fresh manure and the larvae survive much better in the manure of grass-fed cattle compared to the manure of cattle consuming grain rations. Eggs hatch from the manure pat within a week and then live as pupae in the soil under the manure pat. The entire life cycle takes about 10 to 20 days depending on the weather.

Each female horn fly will lay as many as 400-500 eggs in her lifetime, so the population can become very large in a very short period of time. Horn fly numbers usually peak in early summer and then decline as heat and dryness decrease the suitability of manure pats for the immature larvae and pupae. Late in the summer or in early fall, the conditions may improve for the immature horn flies, and the population can increase again.



Because horn flies spend almost all their lives on cattle, applying chemical pesticides to cattle can be an effective method to expose the flies to lethal doses. Several different types of pesticides that are safe to use on cattle are effective against horn flies, but some horn fly populations are resistant to the pyrethroid class of chemicals. If you used a pyrethroid insecticide last year and you were not satisfied with the level of horn fly control you achieved, then it may be wise to switch to a different chemical class for your pesticide this year.

Backrubbers and dust bags can be a very economical method to apply pesticides if the cattle are forced to use them daily to get to water or mineral feeders. Proper placement and frequent refilling are necessary for this control method to work well.

Insecticide ear tags can be an effective method to deliver pesticide to your cattle on a daily basis, but resistance to pyrethroid tags can be a problem unless several general rules are followed. Delay tagging until fly populations reach about 200 flies per animal, tag all cattle in the herd by following the instructions on the label, rotate the insecticide class so that cattle aren't exposed to the same chemical class year after year, and remove the tags at the end of the fly season.

Sprays and pour-on products that are reapplied every seven to 21 days can also be effective. These products have the advantage that timing of reapplication can be adjusted based on the fly population, with the obvious disadvantage of needing multiple applications.

Larvicide (larvae-killing) products that are included in mineral or feed will pass through to kill fly larvae and pupae in the manure pat. To be effective, cattle must consume these oral products daily so that all fresh manure has an effective dose before the female horn fly lays her eggs. Because newly hatched horn flies will migrate to find cattle, control is most effective if all the fresh manure within several miles of your herd is effectively treated.

Non-chemical control of horn flies focuses on decreasing the contact between cattle and new flies emerging from manure pats by dragging pastures to speed drying and exposure of larvae and pupae to dry heat.

Face flies

Face flies don't actually bite cattle, but the female has sharp mouthparts similar to a rasp that she uses to damage the skin so that she can suck up liquids such as eye secretions, discharge from the nose or blood from wounds.

The face fly is different from the horn fly in that this species spends very little time on cattle. It spends most of its life resting on fence posts, plants or other vegetation. Because they spend so little time on cattle, treating cattle with pesticides is less likely to result in the flies receiving a lethal dose. It does appear that daily application of pyrethroid insecticides directly on the face of cattle does reduce the time that face flies will spend on cattle.

Backrubbers and dustbags that effectively apply insecticide to the face and ear tags are methods that can provide daily insecticide exposure. Because pour-ons and sprays are not applied daily, these methods of chemical application are not likely to reduce face fly problems.

Like the horn fly, face fly females also lay eggs in fresh, grass-fed manure pats, and the immature stages live in the manure pat and in the nearby soil. Because face flies can fly long distances, dragging pastures to break up manure pats and using oral insecticides in the mineral or feed may not be as effective as for horn flies, which migrate less.

Stable flies

Stable flies are bloodsuckers that mainly feed on the front legs of cattle. These flies have a very painful bite. Even a

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small population can cause a great deal of discomfort and cattle will try to avoid them by stamping their legs, bunching together or standing in water.

Stable fly eggs are deposited in rotting plant matter mixed with moist manure or soil such as around hay-feeding sites, the edges of feeding aprons and around haystacks. Because the fly eggs aren't laid in fresh manure, the oral larvicides do not provide effective control.

Applying insecticides with a spray or mist at weekly intervals is the only chemical control that is effective for pasture cattle.

Sanitation and cleanup of wasted feed around hay rings, feedbunks and fencerows is an important nonchemical method of stable fly control.

For cattle confined to a feedlot, fly predators (also called parasitic wasps) can be used because they effectively kill immature flies. However, because these types of non-stinging wasps are not strong fliers, they are not effective in pasture situations. Parasitic wasps must be purchased and released in areas likely to have fly eggs about once a month during the entire fly season.

Horse flies

Horse flies are very large and have a painful bite. After a blood meal, female horse flies will lay their eggs on plants near ponds or streams. Because horse flies are large and hardy, chemical pesticides seem to have little effect, and because they do not lay their eggs in manure or decaying plant matter, sanitation is not effective as a control method.

Complete elimination of all flies is not possible, but by knowing about different fly pests that will confront your cattle, effective control strategies can be planned. Because fly populations will vary from one year to the next based on factors such as rainfall, grazing density and previous exposure to chemical insecticides, fly-control strategies have to be flexible and may need to be changed.

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