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MORE THAN ANNOYANCE:

Flies Can Impact Health and Profits

In the thick of fly season, evaluate and refine your management plan to stay ahead of the pests.

> “If your 2024 control efforts underperformed, consider adjusting your approach,”

says David Boxler, Nebraska Extension livestock entomologist.

“The best control method will depend on several factors including efficacy, cost, convenience and your current herd management practices.”

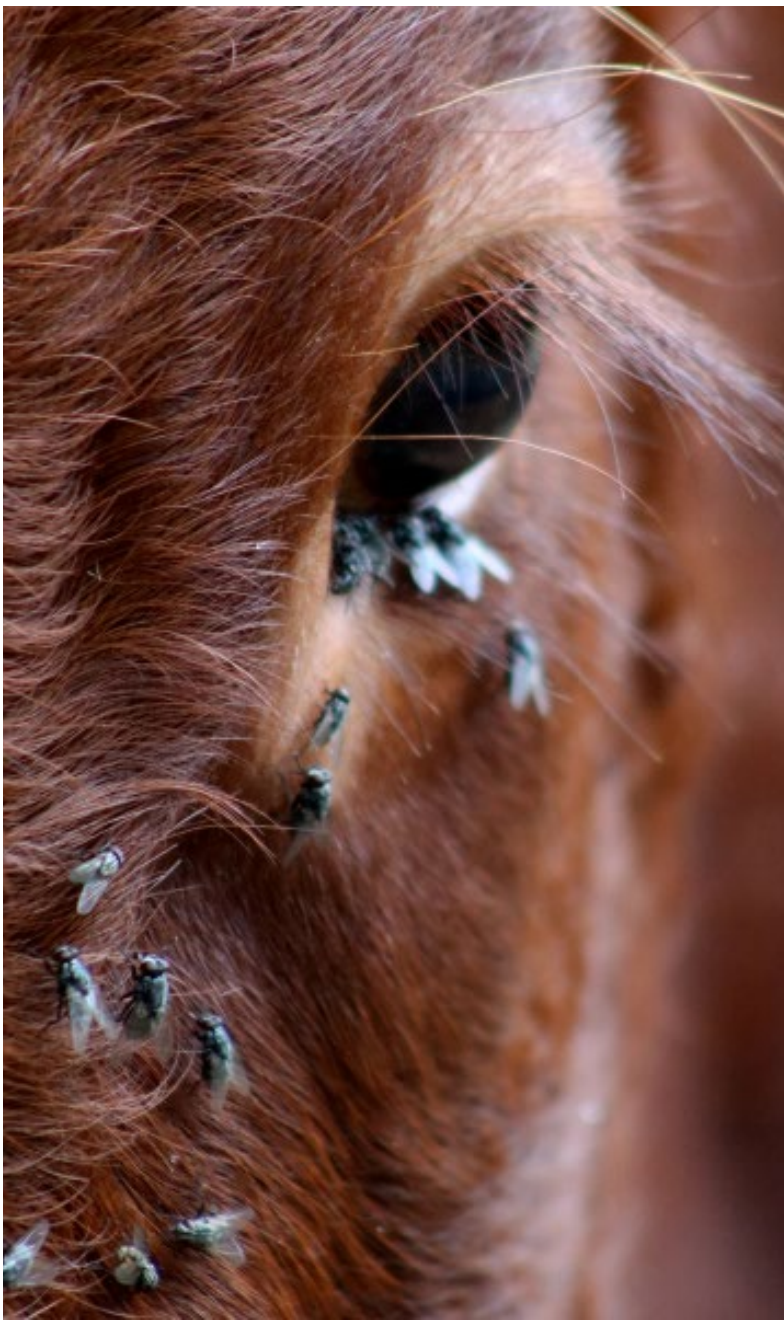
He also reminds producers that horn flies can migrate from neighboring untreated herds, masking the effectiveness of your efforts and increasing fly pressure. For this reason, Boxer recommends a comprehensive, integrated fly control.

The horn fly is one of the most damaging pests of pasture and rangeland cattle across the U.S., Boxler says in a recent “UNL Beef Watch.”

> “Adult horn flies are blood-feeding insects that take an average of 30 blood meals per day,” he says.

“Their populations can build rapidly and often exceed the Economic Injury Level defined as 200 flies per animal. Once fly numbers surpass this threshold, cattle experience reduced weight gain and milk production due to fly-induced stress and altered grazing behavior.”

Observing your cattle during summer months is key to detecting fly pressure. Boxler asks, “Are they constantly tossing their heads, swishing their tails or twitching their skin?”



These signs of fly irritation indicate a more effective control strategy might be needed.

"If you are seeing flies, ticks, lice or insect damage to your cattle herd, we know there is an economic impact; however, that impact can become far greater than production or weight gain loss alone," says Ashby Green, DVM, Neogen senior technical services veterinarian. "Insect pressure affects grazing patterns of cattle, it affects their comfort and it can lead to health issues. Some of those health issues can be definite, such as anaplasmosis."

The vectors responsible for spreading anaplasmosis include horse flies, stable flies and ticks. This condition has been reported in most states across the U.S., while the disease has been recognized as endemic throughout the South and several Midwestern and Western states.

"With horn flies, we're looking at mastitis risk, so that's going to impact both dairy cattle and also our cow-calf operations," says Jonathan Cammack, Oklahoma State University assistant professor and state extension specialist. "A lot of times, horn flies will feed on the udders of the animals, and they transfer the Staphylococcus aureus bacteria because they land on the manure, then they go back to the animal to feed and bring those bacteria with them."

Several other conditions are propagated by flies or ticks, including pinkeye, which can be spread by face flies and causes inflammation and ulceration of the eyes. Pinkeye-affected calves are, on average, 35 lb. to 40 lb. lighter at weaning compared to healthy calves, according to a University of Kentucky report.

Cammack says that due to flies,

"We're looking at probably **$6 billion in losses annually**

to U.S. cattle production, and that encompasses everything from actual loss in production due to decreased weight gain or decreased milk production, veterinary needs associated with treatment of cattle with exposure to pathogens from some of these insects, and then also the control measures associated with managing those individual fly species."

Ticks present economic risks as well. Cammack says that during a 100-day growing period producers can see a decrease in total weight gain in calves by about 20 lb. For stockers, over that same 100-day period during the summer months, they can experience a decrease in weight gain by about 60 lb.

"With what current prices are, 60 lb. could translate to a significant amount of money returned when we're talking about the few dollars that it might cost for some tick control," he says.

CONTROLLING FLIES AND INSECTS:

Tips to implement

Now is the time to take steps to control flies and ticks, as populations emerge with the warmer weather.

In "Stopping Flies in 2025: Tips to Battle These Economic Pests," Cassandra Olds, Kansas State University Extension entomologist, shares four steps to controlling flies.

1. Know what flies you're dealing with.

2. Reduce populations.

3. Eliminate breeding grounds.

4. Consider chemical control options.

Similar to Olds, Green recommends using a multi-pronged approach to insect control. Fly tags, feed-through insect growth regulator (IGR) products, pour-ons, back rubbers and dust bags can help diminish the population. A pour-on with an IGR destroys the larval development in flies and greatly reduces the fly population. For ultimate control using a pour-on, look to a unique combination of actives within one solution that includes an IGR, an adulticide, and a synergist that supplies relief to cattle from infestations and provides producers with a reliable solution that helps minimize handling, time and labor costs.

"Both back rubbers and dust bags can be highly effective if managed correctly. Keep in mind, when these are put out to withstand the elements, including moisture and rain, it's key to keep the dust fresh or the oil recharged in your back rubbers. Otherwise, they will diminish in their ability to control flies quickly," Green advises.

Cammack stresses the importance of accurate dosing by the individual animal's weight and following label guidelines.

To best control flies and insects on cattle operations, "the easy and effective way is the best way," Green summarizes. "It's up to you and with the help of your veterinarian to help create that combination."

STOPPING FLIES IN 2025:

Tips to Battle These Economic Pests

With warming weather and cattle going out onto pasture soon, now is the time to consider fly control options.

"Every year, stable and horn flies cause significant economic losses, but a good fly control program can minimize this impact," says Cassandra Olds, Kansas State University Extension entomologist, in a recent "K-State Beef Tips" article. "Although often grouped together, these are very different flies that need different control approaches."

Olds shares these tips to stopping flies, or at least reducing their impact this year:

STEP 1:

Knowing what you have

"The first step in developing a good fly control program is knowing who you have," Olds explains.

Horn flies feed 20 to 30 times a day and stay associated with their chosen animal 24/7, with females only leaving briefly to lay eggs. Stable flies in contrast only feed once or twice a day, remaining on the host for a short period of time (3 to 5 minutes).

When not feeding, flies are resting in shaded areas such as building sides and vegetation. This short feeding time means producers often underestimate their stable fly burdens.

While both flies affect pastured cattle, horn flies are not a problem in confined settings such as dairies and feedlots. This is because horn flies need fresh, undisturbed manure as a breeding site while stable flies can develop in any decaying plant matter such as hay bales, feed bunk spill over and decaying grass.

STEP 2:

Reduce populations

Olds explains with either fly species, using non-insecticidal control methods are essential for slowing insecticide resistance. For horn flies, pasture burning in spring kills any flies overwintering, which can significantly reduce fly populations emerging as weather warms. A healthy dung beetle population will also significantly reduce your fly numbers for free.

"Dung beetles are very susceptible to macrocyclic lactones so avoid using injectable and pour on avermectins (abamectin, eprinomectin, ivermectin etc.)," Olds says.

Because horn flies die within hours of being removed from cattle, non-chemical walk-through traps can be effective if animals pass through them regularly.

STEP 3:

Eliminate breeding grounds

Round hay bales result in significant wastage, which when mixed into the manure contaminated mud around bales, provides a prime breeding site for stable flies.

Olds explains each round bale can produce 200,000 stable flies.

"Reducing hay waste and spreading/drying areas around finished bales is key to reducing stable fly numbers," she says. "In feedlots, minimizing feed spillage and waste is critical to remove breeding sites for stable and house flies."

Parasitoid wasps are available from multiple sellers and should be released around fly breeding sites. These are very effective if released before fly populations emerge and released repeatedly though the fly season.

Be careful using insecticides if using parasitoid wasps as they are very small and sensitive to these chemicals. Keeping vegetation surrounding pen areas short and exposed will remove sheltered resting areas, making life more difficult for the flies.

STEP 4:

Consider chemical control options

Olds stresses chemical control options should be used as a supplement not the basis of a fly control program.

"For horn flies, insecticidal ear tags are an effective method of control if correct rotation is used," she adds. "Rotate the chemical class of your tag annually, in year one using pyrethroid-based products, year two use organophosphate-based products and year three use macrocyclic lactone tags. Repeating this three-year cycle will reduce the selection pressure on the fly populations, slowing down the spread of resistance."

Olds also shares these tips for effective tagging.

"Tag both ears and place the tag directly into the ear," she explains. "For the tag to be effective, it must come into direct contact with the animal's skin, which is greatly reduced when daisy chained."

Olds also instructs producers not to tag young calves and adds mature bulls with thick necks might not benefit from tagging unless the tag can touch the skin.

"Although the box may label products as effective for four to five months, field trials have shown that tags only remain effective for 90 to 100 days," Olds says. "If possible, wait until fly populations are noticeable before tagging animals to get control over peak fly activity period. After 90 days, remove the tag to reduce the risk of insecticide resistance developing."

To increase coverage, pour-ons of the same chemical class as the ear tag can be used to increase coverage.

"Be aware that a macrocyclic lactone pour-on will impact dung beetle populations," Olds says. "Make sure animals are dosed accurately according to weight and ensure head to tail coverage. Due to their low contact time with the host and preference for the legs, topical insecticidal treatments are generally not useful against stable flies."

Spraying the legs can provide some relief, although it should be used sparingly as most sprays are pyrethroid based, not allowing for effective annual rotation. Baits and premise sprays can be useful in controlling both house and stable flies, look for areas where flies are found resting such as building walls, fence posts and inside sheds and shelters.

Another option is feed through insect growth regulators (IGRs) to control horn fly. Olds says it is important cattle consume the correct amount, which can be difficult under free-choice conditions.

"Under-dosing will result in resistance developing over time, reducing product efficacy," she says. "Although labeled for stable fly control also, when manure containing the IGR is diluted in the mud and hay, it is no longer effective."

Often marketed as dung beetle safe, Olds says evaluations of these claims in most species have not been carried out, and their true impact remains unknown.

"Insecticide resistance to IGRs can and does happen; to slow this, rotate annually between Methoprene-based (Group 7A) and diflubenzuron-based products (group 15)," she adds.

The Veterinary Entomology website provides a searchable database that can help producers select the right products. Producers can select from type of animal, insect and application method.

The Insecticide Resistance Action Committee (IRAC) codes are given for each product in addition to trade names.

"For on-animal use, select the best product to allow an annual rotation between pyrethroid (Group 3A), organophosphate (Group 1B) and macrocyclic lactone (Group 6) groups," Olds says.

Controlling Flies on Cattle Requires Proper Timing

Face flies, horn flies and stable flies are the most common and most treated pests on North Dakota livestock operations. Left uncontrolled, these pests can cause significant loss in livestock production.

Fortunately, North Dakota State University Extension specialists say that the proper pest management strategy can provide effective control.

While integrated pest management is commonplace for controlling crop pests, similar concepts can apply to controlling livestock pests, according to Extension veterinarian and livestock stewardship specialist, Dr. Gerald Stokka.

"Integrated pest management involves using the right type of control at the right time for the right duration to control pests effectively," Dr. Stokka says. "For example, in beef cow-calf operations, applying pest control for lice and flies prior to pasture turnout will not be effective and will waste resources related to pest control."

Timing and type of pest control depends on the species of flies. Horn and face flies typically are not present at pasture turnout and do not reach economic thresholds for applying control until midsummer.

Horn flies are gray and look like small houseflies. Horn flies bite and spend most of their time clustered around the head, shoulders and back of cattle. These blood-sucking flies feed up to 20 to 30 times per day. This constant biting causes cattle pain and stress, and can reduce the cattle's weight gains by as much as 20 pounds, according to Dr. Stokka.

Face flies look like large, dark house flies. They are nonbiting flies that feed on animal secretions, plant nectar and manure liquids. Face flies may transmit pathogens responsible for infecting the eye and causing pinkeye in cattle. The life cycle of a face fly is approximately 21 days. Populations tend to peak in late summer.

Stable flies are similar in size to house flies, but have circular markings that distinguish them from horn flies. In addition, these flies bite on the abdomen and legs, feed on blood, and are very disruptive to cattle grazing. They breed on organic matter and are very difficult to control with topical pour-on and injectable products.

Pest density is another factor in determining timing of control strategy, according to Colin Tobin, animal scientist at the NDSU Carrington Research Extension Center.

> "When fly counts reach 200 flies per animal, the economic threshold has been reached and animals will have significant weight loss," Tobin says.

"The economic threshold is the pest density at which producers should take action to manage the pest."

Tobin says that the first step in determining when to apply control is to properly scout pastures and cattle to determine fly type and fly populations. Horn flies typically rest on cattle throughout the day, whereas face flies land on the face of cattle for a meal and then retreat to nearby structures (forages, fences, etc.).

Ear tags contain insecticides that are released slowly into the animal's hair by movement, so ear tags should not be applied until fly populations are nearing the economic thresholds (typically from mid-June to July). Tobin advises reading insecticide labels carefully because recommendations can vary for the number of tags to apply (one or two), the age of cattle that can be tagged, and the chemical class of active ingredient (pyretheroid, organophosphate or a combination).

NDSU Extension specialists recommend rotating the class of insecticide each year and removing tags when they no longer provide effective fly control to help prevent flies from becoming resistant to the insecticides.

"To achieve proper fly control, pour-on and sprays must be applied every two to three weeks throughout the fly season," Tobin says. "Applying these products before pasture turnout likely will not be an effective fly control method. Additionally, all avermectin pour-ons and injectables impact internal parasites and are not labeled for fly control."

Feed additive insecticides can be included in mineral formulations for the cattle. The additives pass through the animals' digestive system and destroy the developing horn fly

maggots in the manure. These additives are effective in killing 80% to 90% of the developing fly larvae in animals that have consumed the product.

Extension livestock specialist Karl Hoppe advises ranchers to offer feed additives at least 30 days prior to fly emergence in late June or early July. Continuous use of these products may speed up resistance in the fly populations, he warns.

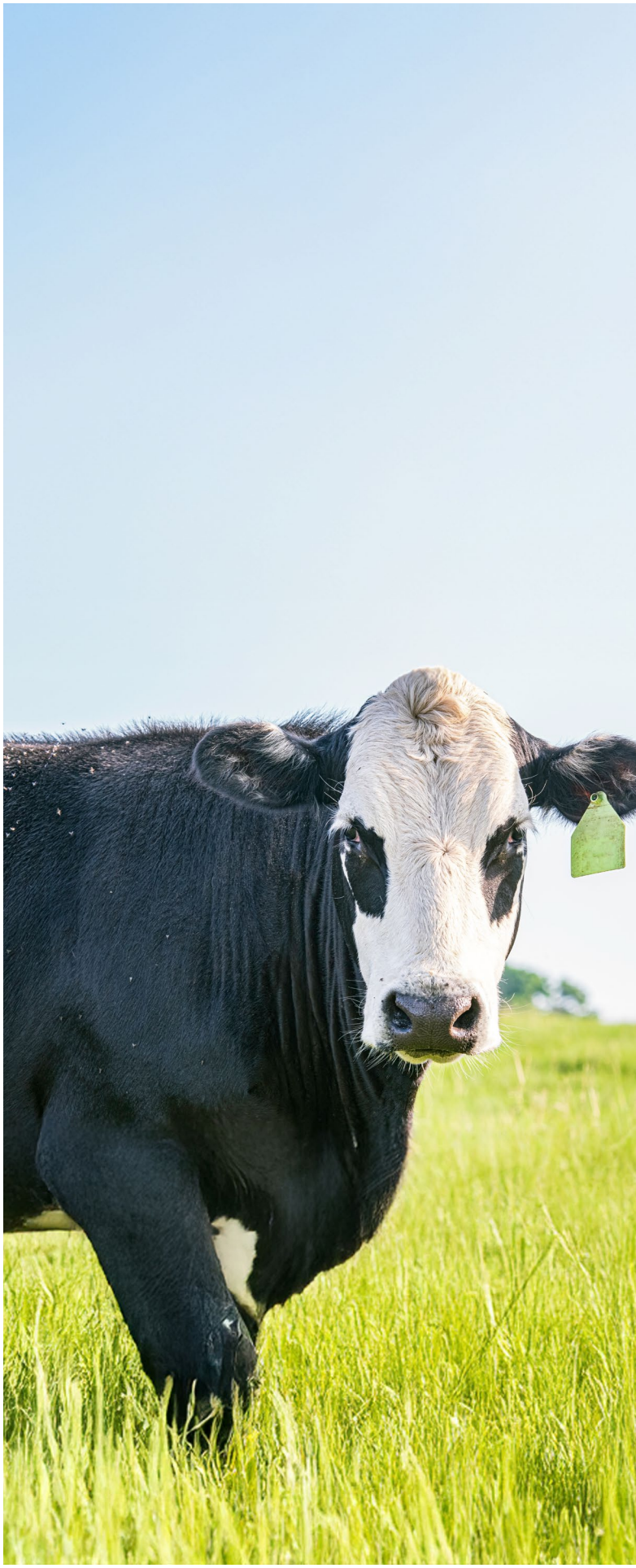
Back rubbers, dusters and other means of delivering insecticides, as well as nonchemical fly traps and reliance on natural fly defense mechanisms (dung beetle control of larvae), also are available. As with the other control methods, Hoppe advises watching for economic thresholds and considering what control measure will work best.

> “When applying any type of pest control, be sure to carefully read the label prior to application,” Hoppe says.

“It is important to monitor populations to see if the product is achieving the desired level of control.”

If a product is not effective, the fly population may have developed a resistance to that type of insecticide, which may require another method or product.

“Pest control can be costly,” Hoppe says. “Producers can reduce costs by following principles of integrated pest management and applying the appropriate products at the appropriate time for the appropriate control of pest populations.”



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