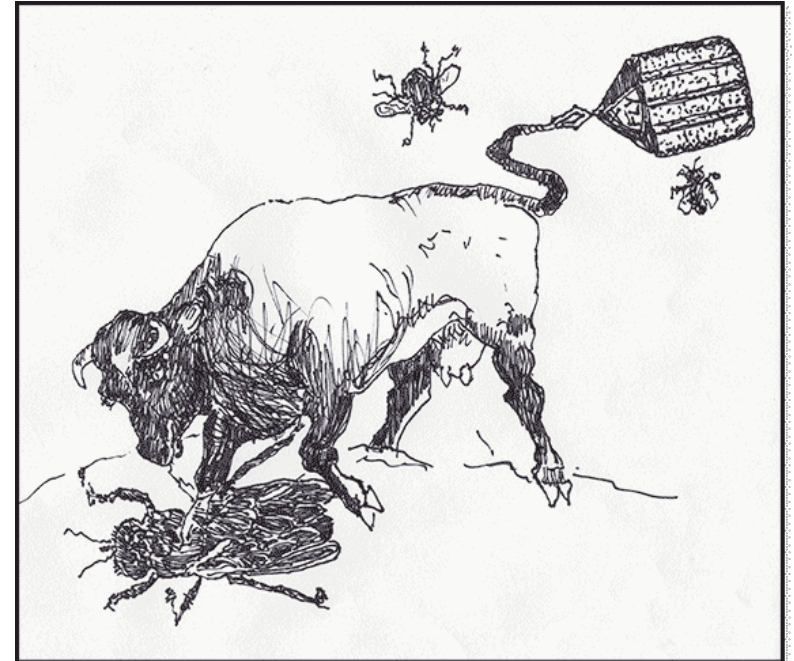


THOSE ANNOYING FLIES!

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First published in American Livestock, 2013; revised July 2017

Flies. What can I say? They're everywhere. They annoy every mammal. They spread disease. They're just awful.

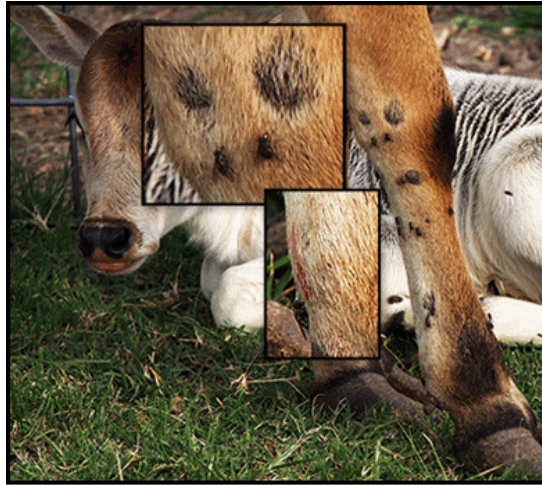


Not only do biting flies bother your livestock to the point of weight loss and frenzy, they're mechanical vectors of many diseases. Eradication is impossible. The first step is to know your enemy: make a positive identification. Flies look a lot alike, but there's enough variance in their behavior to tell the difference. With more than 1,000 species in the world, let's concentrate on the four major biting types in North America.

NAME/ID	BEHAVIOR	SYMPTOMS	BREEDING SITES	DISEASES TRANSMITTED	TREATMENT THRESHOLD	MECHANICAL CONTROLS	CHEMICAL CONTROLS
<p>Face flies (<i>Musca autumnalis</i>)</p> <p>Identify them by their location on the animal: the eyes, nose, and mouth.</p>	<p>Only females bite. They attack the faces of cattle to feed on protein in eye and nasal secretions, saliva, and blood that oozes from scratches. Feeding only in daytime, they rest on fence posts or vegetation at night. Their raspy, sponging mouth parts irritate mucus membranes and increase tear production.</p>	<p>Increased tears and mucus production.</p>	<p>Fresh (less than 15 minutes old) manure from grass-fed cattle. They do not lay eggs in manure piles around barns or in trampled manure.</p>	<p>Face flies can transmit infectious keratoconjunctivitis (pink eye), brucellosis, and bovine herpes virus-1, which causes infectious bovine rhinotracheitis (IBR).</p>	<p>5 per animal.</p>		<p>Chemical controls are difficult as flies feed on the face where it's difficult to apply insecticide. Sprays and wipe-on insecticides applied to the head or neck is the most effective method of control. Cattle can self-treat with dust bags placed low enough so that the cow must lift it up with its head.</p>
<p>Horse flies (<i>Tabanus</i>, 52 species) and Deer flies (<i>Chrysops</i> spp., 33 species)</p> <p>Horse flies are black and 3/4"-1"; deer flies are yellow-brownish and black, and 1/4"-1/2".</p>	<p>They feed on cattle, horses, mules, hogs, dogs, deer, and other warm-blooded animals, as well as humans. Only females bite. The flies are vicious, painful biters and frighten animals with their persistent swarming and loud buzzing. They're most frequently seen on warm, still, sunny days.</p>	<p>Animals react with frantic stampeding. Their panic can cause them to crash into fences, barns, and trees, and seriously injure themselves. They will seek protection in barns and deep shade.</p>	<p>Breeding sites are marshy areas at the edge of woods and ponds. Most adults live for 1 month, but often different species' life cycles will overlap during the season.</p>	<p>Horse and deer flies are vectors of anthrax, tularemia, anaplasmosis, hog cholera, equine infectious anemia, filariasis and are suspected of transmitting Lyme disease.</p>		<p>Nonchemical controls include draining marshy areas where they breed (not practical nor ecological) and sticky traps.</p>	<p>Permethrin-based sprays cause horse and deer flies to leave almost immediately after landing; but often they're not in contact with the insecticide long enough to be killed. Pyrethrin sprays are effective but don't last as long as Permethrin.</p>
<p>Stable flies (<i>Stomoxys calcitrans</i>)</p> <p>About the same size as house flies. May appear darker.</p>	<p>Their bayonet-type mouths slice a hole into victims' skin. When feeding, their bodies point up and parallel to hair growth. Both sexes bite. Stable flies stay less than 30" from the ground and attack legs and bellies. They feed several times per day. The flies bite humans readily.</p>	<p>Animals react by stamping, bunching in tight groups, standing in water, lying with legs tucked underneath, and seeking out dark locations. Bites bleed and can cause welts, especially on lighter cattle.</p>	<p>Breeding sites are decaying organic matter: wet hay/straw mixed with manure older than 10 days, old manure under fences, and spilled feed. Of particular importance is waste hay from hay ring sites and rollouts.</p>	<p>Stable flies are vectors for <i>Habronema microstomata</i> which causes habronemiasis (summer sores) in horses.</p>	<p>10 per animal.</p>	<p>Keep all areas clean and dry. Remove breeding areas and spread over pasture or pile up in hills. Pay attention to barn stalls and edges of fences and pens. Use shavings in bedding as they won't breed there.</p>	<p>No insecticide is effective; sprays are removed when cattle walk through dewy grass. Feed additives are ineffective because flies breed only in old manure where larvicide levels are degraded. Pyrethrins can be used as a "knockdown" spray. Synthetic pyrethroids (Permethrin) have a residual kill of up to two weeks; use on shady walls and trees where flies rest after feeding.</p>
<p>Horn flies (<i>Haematobia irritans irritans</i>)</p> <p>Half the size of house flies, with a lighter gray color.</p>	<p>They feed almost exclusively on cattle and point their bodies down with wings at a 45-60 degree angle. Both sexes bite. They reside on heads and backs and take 20 or more blood meals each day. In very hot weather horn flies move from the back to the belly and legs. They swarm when disturbed but immediately return. In fact, the horn fly lives its entire life on one animal. Females leave the animal only to deposit eggs on manure within 10 minutes of it hitting the ground.</p>	<p>Cattle react to bites by throwing their heads, licking their backs, twitching their flanks, switching their tails, and kicking at their bellies. Bulls usually carry the heaviest infestations. Bites bleed and can cause welts, especially on lighter cattle. Bos Indicus (Zebu) breeds are much less attractive to horn flies than Bos Taurus breeds.</p>	<p>Eggs only develop in fresh cattle manure and do best in the grass manure of pastured cattle.</p>	<p>Horn flies spread summer mastitis, which affects the mammary glands of dry cows; and have been implicated in the spread of anaplasmosis.</p>	<p>The treatment threshold for beef cattle is 100 flies per side; for dairy cattle it's 50 per side.</p>		<p>Ear tags and dust bags give the best chemical control. Ivermectin (used in worming) gives resistance for about two weeks. There are many pour-on and backrubber products. Backrubbers allow daily use and protection; pour-ons can only be used at intervals. Some of the "milk jug" type traps are effective; check the labels.</p>



Horn flies



Horn fly bites



Welts from horn fly bites



Stable fly sticky trap



After three hours



NZI trap



Barn swallow nest. They return every year to the same nest.



Artificial nest

MY EXPERIENCES

I have never noticed **face flies** on my Zebu cattle. Perhaps it's that they have shorter hair on their faces or not having white eye rings. Lucky for me!

In North Central Texas with no swampy areas, I only see a couple of **horse flies** a year. Again, lucky for me!

Stable flies are demons from Hell!!! The only good thing I can say about them is they usually bite me on my lower legs. They will settle on you and continue biting. I've used sticky traps that will attract hundreds in a day, but they also catch butterflies (I can live with that, but some tiny birds got caught once—I think they were Carolina Chickadees--and that was awful. I pulled them off but they died anyway.

Horn flies, when disturbed, will rise in a mass; you can feel the wind from their flight. They will immediately land again. At night, a flashlight will attract them. I've tried holding strips of flypaper inches above them and battery fly swatters. No success at all.

Chickens help--A LOT--by consuming larvae in manure. Also, **dung beetles** help by doing the same. Some pesticides will kill dung beetles, so do research on that. By the way, there are different types of dung beetles; some will roll a ball while others make many very small piles of balls. They look kind of like ant activity in the pile.

I have never used **fly predators**, but I understand that they need to be utilized for a long time, and before the fly population is active. Also, make sure the predators are species that will thrive in your part of the country. Those advertised in many farm magazines may not be suitable. I've had no success with **fly blocks**; protein blocks that include growth regulators (will stop flies from maturing). They also need to be placed in the spring before the fly activity, and continued all throughout fly season. I think I'm too irresponsible for that; better to buy several blocks at a time and monitor closely.

Some people swear by **diatomaceous earth** mixed into feed. I've never tried it as I don't feed grain often. If you buy some, make sure it's the food grade, not the swimming pool DE.

Ivermectin, used for intestinal parasites, will repel horn flies for about two weeks, but frequent use leads to parasite immunity. The pour on works as well as the injectable, I believe, but I could easily be wrong. My problem with applying it is that the cows seem to smell it, and all run away. So I pen them as tight as possible and use a giant syringe (without the needle) and squirt them as they run by. The syringe seems to get gummed up quickly, so I filed down the stopper. The ivermectin comes with a dosage spout, but only measured for large cow breeds.

Sprays works very well when you can hold the cow still long enough. You can even use "OFF!" in a pinch. I don't have any restraint method but tying them, and my adult cows won't allow that.

I've used **backrubbers** with success, but now I have several large Zebu breed cattle, so it's impossible to reach them all. I tie old socks to the backrubber. This year I bought fly bullets that I think will help. Place the backrubber in a gate where they have to go for water. I mix it with diesel oil and it doesn't harm their skin, but once I wiped it on a cow and it caused a minor skin reaction.

Insecticidal **ear tags** can be used; I don't have any experience with them because I don't want to poke holes in my cows' ears. I've seen people hang them from halters, but the manufacturers' directions emphasize the tag needs to be in close contact.

Barn swallows eat as many flies per day as purple martins eat mosquitos.

The "**NZI**" **Fly Trap** was invented in Africa to trap the deadly tsetse fly (NZI is Swahili for "fly"). It is a blue, black, and white fabric tentlike structure that stands in your pasture. Flies perceive the trap as a cow shape and fly in, only to drown in the trap. The colors and materials are very specific. They can be purchased for \$195, and you can find directions to make your own.

There are many brands/formulations of fly **pesticides**. Some require strict dosing and strict schedules, so I don't use those, worrying about calves' sensitivities.

ADDITIONAL INFO ABOUT INTEGRATED PEST MANAGEMENT

Fly numbers can be reduced using an approach called Integrated Pest Management (IPM). This method starts with biological and cultural techniques, leaving pesticide usage as a last resort.

BIOLOGICAL CONTROLS

Biological control uses natural predators, parasites, and pathogens to reduce fly populations. Dung beetles help to break up manure pats and speed dryout; fly larvae need moisture to grow. The maximum benefit from predators and parasites is achieved with dry manure. In very wet manure, predators cannot move about effectively to find and consume fly eggs and larvae. Parasitic wasps can be helpful, but the wasps must be the appropriate species for your area. Wasp releases should begin early in the season and continue at suggested intervals. Parasitic wasps should not be used as the sole method of control; combine with cultural techniques.

CULTURAL CONTROLS

Inspect your barn, pens, and pasture and remove spilled feed and empty feed sacks; fix leaky faucets and waterers. Remove and dry hay and straw piles, especially matted areas. Never use hay or straw for bedding; use shavings instead—biting flies don't breed in shavings. Constant manure removal and spreading helps it to dry and provide a less hospitable environment for fly eggs. If you feed round bales, you must be vigilant in removing wasted hay: mixed with manure, it is the favorite breeding site for stable flies. Take it away and spread it to dry.

Chickens, guineas, and other birds can provide very good control (except geese, which are herbivorous). If you're lucky enough to have nesting barn swallows, you have very valuable helpers: barn swallows are to flies as purple martins are to mosquitos. Do everything you can to encourage them to take up residence with you. These swallows return to their nests every year for two hatchings.

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