

## Livestock Insects-Cattle

### Stable Fly

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#### Identification and Field Biology

The stable fly is about the size of a house fly, but darker in color. The abdomen has dark irregular spots. The proboscis (mouthpart) protrudes bayonet-like in front of the head. The life cycle consists of egg larva pupae and adult. The life cycle can be completed in 21-24 days during the summer months. Stable flies breed in decaying wet organic matter, which includes spilled feed, manure mixed with wet soil, grass clippings and wet hay in areas where big bales are fed and in racks or bunks or stack yards, where hay accumulates on the wet ground. Stable flies feed on blood, usually by attacking the front legs of cattle or horses, although they will feed on other warm-blooded animals as well. Stable flies overwinter as slowly developing larvae in breeding areas but below the frost line. As temperatures warm in the spring, they migrate closer to the surface and pupate. The first adults that emerge probably freeze, but eventually enough survive to mate and deposit eggs for the new generation.

#### Animal Response and Economic Losses

Stable flies normally are considered pests of confined cattle at dairies or feedlots, but more recently, they have been noted as pests of range cattle as well. They feed on the front legs of cattle primarily, and cattle under attack will bunch with each animal attempting to protect its front legs. Losses occur from both the bunching, which increases or causes heat stress and from annoyance and use of energy to try to dislodge the flies by tail switching, stamping their feet, and throwing their heads down by their front legs. Range and pasture cattle will bunch downwind by a fence and fight flies in the same manner. Nebraska studies have shown decreased weight gains from 0.2 – 0.4 pound for feedlot cattle depending on the fly numbers and temperatures. Weight losses of a similar magnitude have been recorded for grazing steers.

#### Management Approaches

##### Cultural

Stable fly control for confined cattle starts with good sanitation, cleaning up spilled feed, fixing leaky waterers, providing good drainage from the pens and building, maintaining good mounds, cleaning pens, scraping behind feed bunk apron and restricting pen size to create better drying conditions.

##### Biological

Considerable research has been conducted on biological control of stable flies with parasites. Small wasps, termed pteromalids, parasitize stable fly and house fly pupae. Several commercial insectaries have several species of these for sale. Some researchers claim success with inundative releases of these parasites. Our experience with them was that they did not provide adequate control at release rates considerably higher than recommended, and that they were more expensive than standard control methods. This research was conducted at feedlots and dairies with confined cattle.

### Chemical

The insecticides recommended for stable fly control are listed at the end of the chapter. Stable fly control with insecticides may be achieved with two application methods. One is knockdown spray applied into fly infested areas, which kills flies by spray contact. The other method is the application of residual sprays to fly resting areas or shady surfaces. The mist applications as area sprays may be applied with hydraulic sprayers, aircraft or mist blowers. If the feedlot or dairy has a windbreak around some of it, misting in the trees during the hot part of the day, when flies seek shade, may be more effective than spraying the feedlot pens. Control of stable flies on range or pasture cattle is difficult. In Nebraska studies, cattle had to be sprayed three times per week to keep stable flies at levels that did not impact grazing steer weight gains.

#### *Insecticides Suggested for Treatment of Flies on Cattle*

<b>Insecticide</b>	<b>Application Method</b>	<b>Application Rate</b>	<b>Restrictions and Comments</b>
<b>Coumaphos</b> (Co-Ral)	Spray or Sponge	<b>11.6 % ELI</b> 1 pt/25 gal water	<b>Restricted-use Pesticide</b>
(Co-Ral Fly and Tick Spray)	Spray	6.5 % EC 2 qt/50 gal water or 10 oz/4 gal water	For horses not intended for slaughter. No more than 6 treatments per year, no less than 10 days apart.
(Co-Ral)	Spray	25 % WP 4 oz/12.5 gal water	
<b>Fenvalerate</b> (Ectrin)	Spray	10 % WDL 2 oz/12 gal water	Apply 8 oz of diluted spray per horse. Do not apply to horses intended for slaughter.
Methoxychlor	Spray or wipe-on	0.05 % Ready to use	Follow label instructions.
<b>Permethrin</b> (Atroban)	Spray	11 % EC 1 pt/25 gal water or 3 tbsp/2.5 gal water	Spray to thoroughly wet animal. Repeat every 10-14 days.

(Buss Off)	Wipe-on, Spray or Pour-on	7.4 % Permethrin + 7.4 % PBO	
(Ectiban)	Spray	5.7 % EC 1 qt/25 gal water or 22 tbsp/1 gal water	Repeat application every 14 days.
(Gardstar)	Spray	40 % EC 5-12.5 ml/2 gal water	Apply 30-60 ml per horse.
(Permethrin II)	Spray	10 % EC 2 oz/3 gal water	Spray thoroughly to wet horse. Repeat in 14-21 days.
<b>Pyrethrins</b>	Mist, spray or wipe-on	0.05-1.0 % Pyrethrins + Piperonyl Butoxide Many formulations of ready to use.	Follow label instructions.
<b>Stirofos</b> (Rabon)	Feed Additive	7.76 % ROL	Follow label directions. Horn and face fly control only.

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