

# Flies and Disease

John H. Kirk

Veterinary Medicine Extension, School of Veterinary Medicine, University of California  
Davis, VMTRC, Tulare

As we approach the warmer seasons of the year it is well to think about controlling flies on dairies, as they are known to carry both animal and human diseases. With the approach of warmer weather, the flies begin to increase in numbers rapidly as their generation time within manure and decaying feeds becomes increasingly shorter. Here are some reasons to prepare for fly season.

## Mastitis

Flies are known to carry *Streptococcus* and *Staphylococcus* bacteria in their mouthparts and on their feet. The common housefly, which is not a biting fly, sponges up moist materials with its mouthparts as it feeds. The “fly specks” seen on walls and corral fences are actually small amounts of vomit and fecal matter left behind by the flies. Often these “specks” contain bacteria that will also be deposited at the next place the fly lands to feed or rest. Flies particularly like decaying matter whether animal or plant so they feed on rotting placentas or manure pats. Cows that leak milk in between milking periods are frequent targets for housefly feeding. And it just happens that cows that leak milk are more likely to have mastitis than other cows. So more often than not, the milk that the housefly sponges up contains mastitis-causing bacteria.

The biting flies are particularly troublesome for cows. They often bite on the teats and teat ends of cows where the skin is thin. These flies have been shown to be able to cause enough irritation and damage on the teat ends to result in wounds and scab formations. *Staphylococcus* bacteria such as *Staph. aureus* readily grow in these bite injuries and around the scabs. Even in heifers before they calves, mastitis can occur from the bite injuries that become infected with bacteria. As with any wound on the teat, mastitis is almost always sure to happen. These cases of *Staph. aureus* mastitis often become chronic resulting in decreased milk quality and production or perhaps early marketing.

## Pinkeye

The *Moraxella* bacteria that cause pinkeye in calves are readily available in the tears and discharge from calves for flies to feed on. When fly populations are high, pinkeye infections rapidly spread from calf to calf as the flies move from one calf to another. Houseflies are particular adept at moving bacteria as they feed from one moist area to another. Face flies will also increase the spread of pinkeye. While most of the pinkeye lesions will heal slowly over 45-60 days leaving only a white scar, however, in about 1% of the cases the eye will rupture and eyesight will be lost. In addition, expensive antibiotic treatment is required in most cases of pinkeye.

## **Decreased Production**

When biting fly populations become excessive, they chase cows and calves as they attempt to bite. In an effort to avoid fly bites, the cattle will crowd together constantly trying to get in the center of the herd. This avoidance behavior takes them away from the feed bunks and production may suffer 5–20%. Growing heifers also demonstrate this avoidance behavior when chased by many biting flies. They may even lose weight during the peak of the fly season instead of gaining.

## **Potential Infections**

Flies are also known to carry bacteria such as *Salmonella* and *E. coli* O157 that are potential human food borne pathogens as well as animal pathogens. Flies can carry *Salmonella* from a cow with diarrhea in the hospital pen to nearby calves in hutches. A recent report indicates that *E. coli* O157, “the hamburger *E. coli*”, beyond just being carried on the fly mouthparts and feet, can multiply within the housefly. Thus the housefly is more than just a carrier; it is a source of multiplication. As these bacteria are being monitored in slaughterhouses that take market dairy cows, fly control may become another avenue for reduction of contaminated dairy cows arriving at the slaughterhouses.

## **Basic Control Strategies**

The basic strategy for control flies on dairies is to reduce the amount of potential breeding locations. The primary fly breeding locations are in fresh manure (Photo 1), bedding materials such as straw in calving areas or around hutches (Photo 2) and decaying plant material such as silage or hay. Composting grass clippings are also suitable breeding locations for some flies. Common locations for these breeding sites are along fence lines and around feed bunks. Removing these breeding sites is the cheapest means of controlling flies. More expensive steps for fly control may include biological control and insecticides.

Now is the time to begin gearing up for fly control. Search the dairy for breeding locations and remove them before the fly populations begin to develop. Once the weather gets really warm and ideal for rapid fly propagation, control becomes much more difficult and expensive.

Photo 1. Fresh cow manure is an ideal breeding site for some flies.



Photo 2. Straw bedding materials around calf hutches provides an excellent breeding site for flies.

