



# DAIRY SOLUTIONS

## Summer fly preparations for your dairy

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With the cooler temperatures we have been having in much of the upper Midwest, fly control may seem like the last thing to worry about on the dairy. However, if you haven't already started to implement fly control measures, now is the time to start. Not only are flies a nuisance to cattle and employees, but they transmit diseases. Both can have a negative impact on the dairy.

In northern regions, flies are most active from May to October. During this time, they can affect all animals on the dairy, from calves and heifers to dry and lactating cows. In addition to being a nuisance and spreading disease, flies also decrease production efficiency: cattle can become stressed and irritated by excessive fly populations, resulting in less lying time and more time and energy spent trying to fend off flies. In lactating cows, stable flies can cause milk production to drop 15–30%. The average daily gain of heifers, both in confinement and on pasture, can be significantly decreased as well.

Knowing the types of flies that you have, as well as understanding their life cycles, can help you develop a management plan that will work in your situation. All flies go through four life stages: egg, larva (maggot), pupa and adult. A female house fly can lay approximately 1,000 eggs during its lifecycle, which lasts about 30 days. The eggs are laid in moist manure or another type of moist or decaying organic matter, and they hatch 10–12 hours later. After hatching, the maggots move into the wet manure, where they mature in 4–5 days, followed by pupation, which occurs in the drier parts of the manure. The adult flies then emerge in 3–5 days.

### The most common flies found on a dairy:

**House fly (Figure 1):** Does not actually feed on cattle, but relies on a wide array of food sources, such as manure, decaying silage or other organic material. House flies are a non-metallic, dull gray color, with a pale-yellow abdomen. These flies are non-biting but have sponging-type mouthparts. They regurgitate small amounts of digestive enzymes onto their food sources, then sponge up the predigested liquid. When not feeding, these flies can be found resting on barn walls, ceilings or fences. More than 65 different diseases can be spread to cattle by the house fly, including mastitis, pinkeye and bovine respiratory disease (BRD).

**Stable fly (Figure 2):** About the same size as a house fly, the stable fly is also a dull gray color but has a checkerboard pattern on the abdomen. These are biting flies and contain piercing mouth parts which protrude from under the head and deliver a painful bite. Stable flies are often found on the legs of cattle. When not feeding, these flies can be found on barn walls and fences, in tall grass, or on other surfaces within three feet of the ground.

**Horn fly (Figure 3):** Horn flies are small, blood-feeding, biting flies that can be found along the backs or sides of cattle, which is where they spend their time. They are much smaller than house flies. Horn flies develop only in fresh manure. They can cause mastitis in heifers by biting the teat ends of heifers on pasture. This can destroy milk-producing tissue and cause blind quarters, consequently affecting future milk production.

**Face fly (Figure 4):** Face flies closely resemble house flies, but they feed on bodily secretions typically around the nose, eyes and mouth of cattle. Even though they are non-biting pests, face flies can spread pinkeye. These flies don't typically enter barns, so they are mostly found on pasture cattle, and they breed in fresh, undisturbed manure. Face flies only spend about 10% of their time on animals; otherwise, they are found resting in tall grass and on fences and other surfaces.



Figure 1. House fly



Figure 2. Stable fly



Figure 3. Horn fly



Figure 4. Face fly

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There are many ways to manage flies on the dairy. The best way is through an integrated pest management practice. Historically, insecticide use was the main approach used to combat fly populations; however, insecticide can increase fly populations' resistance to insecticides while also destroying natural predators of flies. Integrated pest management works to decrease insecticide use, instead using other strategies to successfully decrease fly populations.

No matter what fly control strategy you choose for your farm, do not wait for heavy fly populations to build up before you begin to control flies.

## Sanitation

Routine sanitation is the most effective and economical way to manage fly populations. Insecticides alone cannot eradicate fly populations when sanitation is poor. Since flies reproduce in areas of undisturbed, damp organic matter, cleaning once a week can break their life cycle. This includes removing and disposing of refused and wasted feed, spilled milk, silage seepage, standing water and manure piles. When cleaning pens, make sure that areas around feed troughs and water fountains get cleaned as well. These areas are often more difficult to clean, but they house damp organic matter that can be a breeding ground for flies.

For cattle on pasture, dragging the pasture can decrease the breeding grounds for horn and face flies, which lay their eggs in fresh manure. If pasture cattle are fed hay, clean up any residual hay that has been left around the feeding area, because it can become mixed with manure and trampled into the soil, creating another breeding area for flies.

## Residual sprays and bait

Residual sprays can be applied within buildings. These sprays are applied to the walls, ceilings, posts and other fly resting places. There are several options on the market. Follow the directions on the label exactly when using a residual spray, as not all are labeled for use in milk rooms. Fly bait works well in conjunction with residual sprays. Use bait liberally and repeat as needed, still following label directions.

## Insect growth regulators

An insect growth regulator is an additive that can be added to the feed of calves and heifers as well as cows that are housed in areas that allow manure to accumulate. It works best when it is fed to all age groups of cattle, and it is designed to be used in conjunction with timely manure sanitation. Begin adding the insect growth regulator approximately one month before flies are expected to emerge, and follow through until one month after the first freeze. In the upper Midwest, this is typically from April through October. This strategy helps prevent the development of future flies, but it will not decrease fly populations that have already been established. Several options are available that can be added to the feed, milk replacer, blocks or tubs, for animals in confinement and on pasture. Work with your nutritionist to determine which option is best for you.

## Additional strategies

Fly tapes or light traps may be best used in confined areas, such as milk rooms, where there are moderate fly populations. Confirm that there is no damage to the screens of windows and doors that lead to the milk room and that the windows and doors close tightly; both these steps can significantly decrease the number of flies gaining access to the milk room. Within barns, make sure that there is adequate air flow by natural ventilation or by fans, as this can also deter flies. Also, keep the grass mowed short around the outside facilities, as tall grass can become a resting place for flies as well.

Space sprays can effectively knock down and kill adult flies. Always read and follow directions on the labels of these products, as not all are designed for use in milk rooms. There are also pour-ons for lactating and non-lactating cattle, as well as cattle fly rubs, available to help control flies.

Flies are problematic on the dairy in many ways, and since they can reproduce so quickly, it is important to get ahead of the problem early. Work with your trusted Hubbard Feeds representative to develop a fly management strategy that works for your farm.

## References:

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