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Limit the damaging effects of flies for young calves

Hot weather and flies tend to go hand-in-hand, but there are measures you can take to limit fly populations in the summer months.

Preweaned calves are especially susceptible to the detrimental effects of flies because they often live in confined spaces and cannot escape a fly-infested environment. What's more, the high sugar content of starter grain, the presence of manure and urine, and the potential for spilled or leaked milk or milk replacer on the premises, make calf-rearing areas a favorite spot for flies to spawn around the dairy.

Flies spread disease, cause discomfort

Face flies and house flies are common pests among calves, and present significant disease risk. House flies harbor more than 100 different species of disease-causing organisms and serve as vectors for many diseases that are detrimental to calves. Pinkeye, BVD, bacterial scours and several clostridial diseases all can be spread by flies, as can the eggs of parasitic worms.

Heifer mastitis is a serious industry concern that also is influenced dramatically by flies. Horn flies, in particular, are troublesome pests that bite the tender teat skin of young heifers and feed off of the blood from these lesions. The resulting chapping and scabbing of teat skin creates a fertile breeding ground for mastitis-causing bacteria—especially *Staph. aureus.* These higher bacterial populations increase the likelihood that quarters will become infected. Plus, horn flies are very effective at spreading the bacteria from one animal to the next, which has been proven by DNA studies.

Researchers at Louisiana State University (LSU) found that implementing fly control for heifers significantly reduced the incidence of mastitis caused by *Staph. aureus* and environmental streptococci, both major mastitis pathogens associated with elevated somatic cell count (SCC). The LSU researchers also demonstrated that bred heifers with bite lesions and scabs on their teats caused by horn flies had a 70 percent incidence of intramammary infections at freshening, compared to a 40 percent incidence for heifers with healthy teats. Heifers that freshen with mastitis also had elevated SCC levels in excess of 5 million/mL.

In addition to direct disease influence, flies also influence calf well-being by elevating their levels of discomfort and stress. Calves that are bothered by annoying and biting flies do not rest well, and are less likely to eat as vigorously. Calves that are not eating and resting are not growing – a large concern considering they are at a stage of development that is critical to their lifetime health and performance.

Keeping fly populations in check

Just one single female fly may lay 400 to 600 eggs in fresh manure or other organic material in her lifetime. It is easy to see how fly populations can multiply quickly and become difficult to manage in the summer months.

A comprehensive, Integrated Pest Management (IPM) program is advised for all livestock facilities to control populations of flies and other pests. Figure 1 illustrates how IPM employs a comprehensive approach to pest management, placing greatest emphasis on preventive management with the enhancement of other tools and commercial products.

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For dairy calves, suggested elements of an IPM approach to controlling flies include:

- Keep hutches and calf pens clean and well-bedded.
- Choose an inorganic bedding material such as sand.
- Eliminate standing water from calf areas.
- Clean up spilled feed.
- Do not dump unconsumed water or milk in front of calf pens.
- Do not store manure near calf-rearing areas.
- Keep grass mowed around calf housing.
- Use predatory wasps to reduce fly numbers.
- Use scatter bait and/or fly traps in calf housing areas.
- Use a feed-through larvicide to control fly populations.
- If fly populations become high, use pesticides that kill flies on contact.

Following the IPM model, conventional pesticides are the "control of last resort." Exposure of humans to pesticides, toxicity to non-target organisms (birds, fish, plants), and the potential for the development of resistance are all concerns with conventional pesticides.

A feed-through larvicide is an insect growth regulator (IGR) that falls under the "biorational" category of chemical deterrents in the IPM model. These products work by interrupting the molting and hatching process of flies. Because the feed-through compound is present in the manure where eggs are laid, young flies do not develop properly, and the larvae die before they can become breeding, adult flies.

Larvicide products have a fixed cost of pennies per day, compared to the variable cost of sprays, baits and traps.

Using feed-through products in both the calf starter and milk or milk replacer is important. Calves younger than three to four weeks of age do not eat enough starter grain to consume enough larvicide to optimally control fly populations. For best results, begin feeding larvicide 30 days before fly season is expected to begin, and continue feeding until 30 days after the first killing frost.

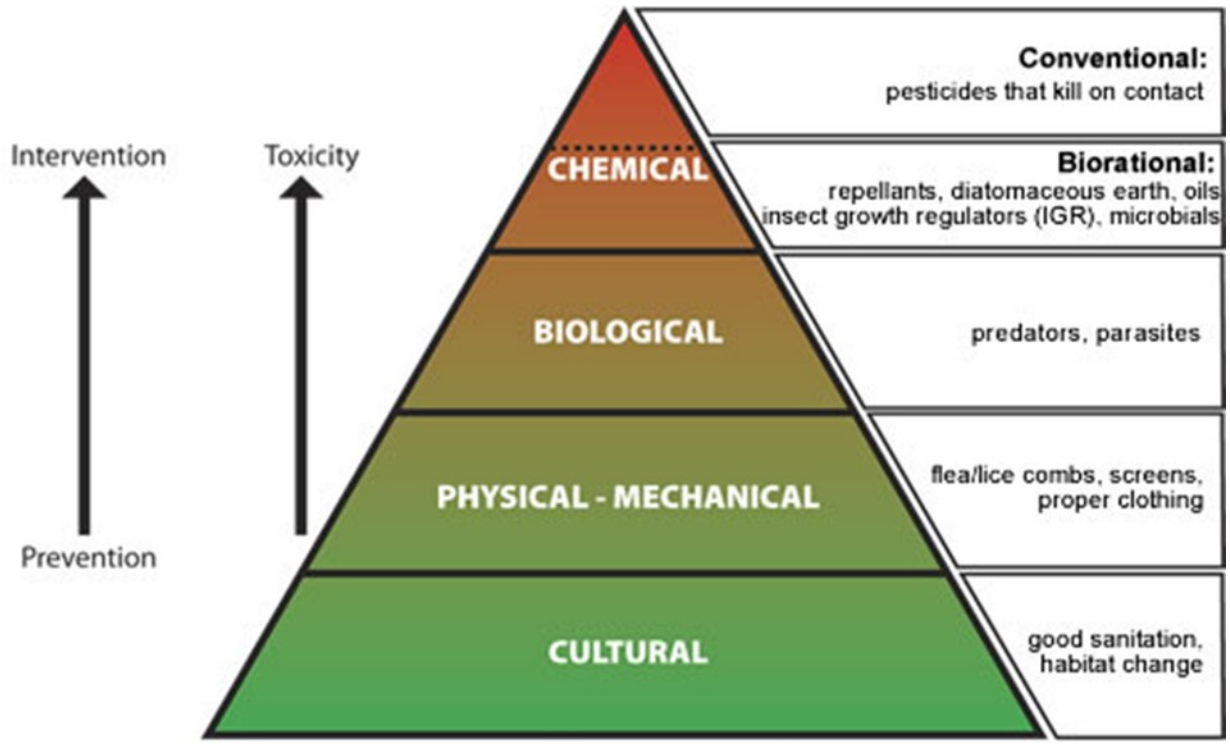

Figure 1. Integrated Pest Management for Pests of Animals and Humans

Source: Pennsylvania Department of Agriculture and Pennsylvania State University