

What's Bugging You (or should I say your cows)?

As you all well know, the fly season in 2011 was as bad as I've seen for years. As a result of the large fly numbers, we also have seen an increase of fly related diseases such as pinkeye. Many producers are at their wits end dealing with the flies and don't know what to do to control them. There are many products on the market to help control the fly population, but it takes a comprehensive plan to use them effectively. The first thing you need to know is what kind of flies you're dealing with in order to know what products to use.

The three most common flies dairy cattle encounter is the face fly, horn fly, and common house fly. The house fly is the one that we see all over the barns' ceiling and walls. They have sucking mouth parts and are annoying to the cow. The face fly likes to sit on the face of cattle and feed off the secretions from the nose and eyes. This is the fly which is responsible for transmitting the bacteria that causes pinkeye. The horn fly is half the size of the house fly and likes to rest on the back and shoulders of the cow where it bites and feeds on a blood meal. The horn fly leaves the cow only to lay eggs in the manure and immediately returns to the cow. Their feeding activity is painful and annoys the animal, as well as causing blood loss. All of the flies reproduce by laying eggs in manure, feed piles, compost piles, decaying organic matter, and under bunks and waterers. The eggs develop into larvae (maggots) which progress into pupae and eventually an adult fly emerges. This takes only 4-5 days for an egg to develop into an adult. That is why we can see fly numbers rise quickly during the right conditions.

It has been determined that when fly numbers on the animal are above 100-200 flies, the animals will have detrimental effects from the flies. These effects are decreased weight gains in the young stock, decreased milk yields in the cows, and disease transmission (pinkeye, anaplasmosis and mastitis). It is considered economically beneficial to institute a fly control program once numbers are above 200 flies per cow. There are many steps involved in a comprehensive fly control program which includes environmental management; control of adult flies through biologic and chemical means; and prevention of

future flies by using feed-thru insect growth regulators or treating manure with products that stop larval development.

Basically, environmental management means controlling/reducing the flies ability to reproduce in the environment. Since flies like to reproduce in manure and other organic matter, it is imperative that we keep manure cleaned up as well as possible. That is why we generally see fewer flies in areas where manure is scraped away multiple times per day versus bedded pack areas. Also, flies love to use spilled feed to reproduce. You always see more flies in barns where feed is allowed to accumulate in front of the animals and not scraped away on a daily basis. Manure piles close to buildings are also great breeding grounds, as well as manure pats in the pasture. Whatever we can do to reduce the breeding grounds will greatly impact the overall fly population.

One of the biggest failures we have in fly control is starting the control measures too late. We can't wait to start fly control once we see a lot of adult flies, because they have already deposited eggs in the environment, starting the next batch of flies. We need to address the problem early in the spring, even before the dormant flies emerge. This is where insecticides come in handy to kill adults as soon as they emerge.

There are many products on the market designed to kill adult flies and have residual effects. Traditionally, the use of pyrethroid/organophosphate products in the form of pour-ons, sprays, dusts, and oilers have been used. They can still be effective at killing adult populations with proper use, but we have seen some local fly populations become resistant to them. Companies are constantly adding new and innovative chemicals to their products to reduce this resistance. Some of the newer products on the market for premise applications are QuickBayt® Spot Spray (Bayer Animal Health); Elector PSP® and Standguard Premise® (Elanco Animal Health); Oxyfly® (Novartis Animal Health); and Maxforce Fly Spot® (Bayer Environmental Services). These products contain ingredients such as pheromones and sweeteners which attract flies to the bait. Many of them last 4-6 weeks indoors and 2 weeks outdoors. These can be used on the ceiling, walls, window sills, posts and any surfaces where flies rest as long as

animals don't come into direct contact with them. They are also great for spraying on the outside of calf hutches. Many of them only need to be sprayed in circular spots instead of all over the building. It is important to follow the manufacturer's labeled directions when applying these products.

Many granular fly baits are also available from a variety of manufacturers. These are designed to be sprinkled in areas which are inaccessible by animals such as window sills, floors, elevated fly bait trays, and around calf housing. Some of these granular baits can also be mixed with water and used as a premise spray. Some of the tradenames are QuickBayt® Fly Bait, QuickStrike Fly Bait, Snip Fly Bait, Elector® Fly Bait, Maxforce granular fly bait, and Bonanza Fly Bait. These also contain attractants that stimulate the flies to feed. The flies eat the granular bait and fly off to die, leaving the bait area clean.

The pour-on products are designed to be used directly on the cattle to treat and control flies, especially the horn and face fly. Since these flies have a tendency to stay on the animal, the premise sprays have little effect on them. Most of the pour-on preparations are made of pyrethroids or organophosphates. Due to resistance, newer pyrethrin pour-ons have been developed. Cylence® (Bayer Animal Health) and UltraBoss® (Intervet/Schering-Plough) are two such products which are designed to not only treat flies but also lice. These are approved for both lactating and non-lactating dairy cattle, calves, and beef cattle. UltraBoss is applied as needed, but not more than every 2 weeks. Cylence is applied as needed, but not more than every 3 weeks. Also available is Durasect® Long-Acting Pour-On (Pfizer Animal Health) which is approved for all cattle. It claims to have a 4-10 week control of horn flies and 1 month control of face flies. There are also many other manufacturers which produce a pour-on products that can be used.

New to the market for fly control are the feed through insect growth regulators. ClariFly® larvicide is intended for blending into cattle (lactating and non-lactating beef and dairy cows, slaughter, stocker and feeder cattle, and dairy and veal calves) rations to control house flies, stable flies, face flies, and horn flies, which develop in cattle manure. This product prevents the emergence of

adult flies from the manure of the treated cattle. Used in conjunction with other adulticides this has proven to be very beneficial for fly control. It needs to be fed 30 days before the flies begin to appear and continued throughout the summer and into the fall. It is available in granular form to be added to rations, including starter rations. Also, I have seen it being added to milk replacers. Another product similar to Clarifly but more designed for the beef market is Altosid® IGR. It specifically is approved for horn fly control only and is also a feed through product. It has no claims to prevent other fly species from hatching from the manure.

Lastly, for organic farms or producers interested in non-chemical methods of fly control come the natural fly predators. Fly predators are an insect (fly wasp) which attack and eat fly larvae in the manure. Since fly predators cannot move long distances they need to be applied directly to manure areas. These are the natural enemy of flies, yet never bother people or animals. They need to be released early in the season and continued into the fall. A schedule for how many fly predators are needed and when to receive them can be generated on a website at <http://www.spalding-labs.com>. Usually, the fly predators need to be released about once a month, but this may vary according to farm size and amount of manure to be treated.

Depending on the costs, producers may decide to control fly populations on their own instead of hiring professional services. One thing to remember about the professionals who spray for flies is that they are most likely only killing the adult house fly and having very little effect on the more problematic face and horn fly. If you decide to use professional services, I would recommend at least using the Clarifly® to control the fly reproduction. Attached will be a sample integrated pest management protocol (including products to use) for you to review. The products I suggest may not be the only ones on the market available for that intended use, so shop around for the best price available for comparable products. It is imperative that you read and fully understand how to use each product before starting. If you have any further questions, feel free to contact me.

Sample Integrated Pest Management Protocol

1. Starting in mid to late April (about a month before adult flies emerge) begin feeding Clarifly® to all animal groups. That way once adult flies lay eggs in the manure the insect growth regulator will be present and working.
2. Begin using the granular fly baits such as QuickBayt® or Elector® around the calf hutches and in areas inaccessible by the animals even before a lot of flies are seen. Also start using the premise sprays such as QuickBayt® Spot Spray, Elector® PSP, etc. to kill flies as soon as they emerge. Don't start too late or it will be less effective.
3. Start using the pour-on products such as Cylence®, UltraBoss®, or Durasect® as soon as more than 200 flies are observed on the animals or animals seem to be bothered by them (swatting tails, grouping, stomping, running, head shaking). Follow the manufacturer's directions regarding dosing frequency and application rates. Some of these products are very concentrated so it doesn't take much. The use of these products will also treat and control lice so the animals should have less lice going into the winter months.
4. Clean up manure piles and spilled feed as much as possible to eliminate breeding grounds.
5. Continue using the products throughout the fly season until a good killing frost.
6. Less flies in the barn, less flies in the calf hutches, less flies in the house, less flies on the animals, and decreased disease transmission is the ultimate goal. With the combined use of the Clarifly® and the various adulticides you and your cows will be much happier.