

Dairy Heifers and Horn Flies

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For most dairy producers, mastitis is the most common and costly disease on their farm. According to one model, the direct cost to dairies is \$128 per case in the first 30 days of lactation (Rollin et al., 2015). In addition to the direct cost, the producer suffers indirect costs such as loss of milk, premature culling, and replacement costs. Since mastitis is such a costly disease, most producer go to great lengths to prevent the disease. One area of prevention that might need attention on dairies is horn fly control. In dairy heifers, researchers have discovered that teat lesions caused by horn flies were associated with a high level of *Staphylococcus aureus* mastitis in the dairy (Ryman et al., 2013). Since dairy heifers represent the future of the milk production, producers should try to provide an environment that allows these animals to reach their full potential. Producers may want to evaluate their horn fly control program to make sure that it is protecting their heifers from this menacing pest.

The scientific name for horn flies is *Haematobia irritans*. As the name implies, the flies are very irritating to cattle. Physiological changes occur in cattle with horn fly infestations such as increase in heart rates, increase in respiration rates, increase in rectal temperatures, and increase in water consumption. If the flies are not controlled, the cattle waste energy licking their backs, twitching their flanks, switching their tails, and stomping their feet. Spending all this energy on combating this pest and less time eating results in weight loss and lower milk production. The economic loss to producers can be very high. The horn fly is a costly parasite to the cattle industry with estimates of \$1 billion in lost production. In addition to lost production cost, producers spend an additional \$60 million in horn fly control.

The life cycle of the horn fly is simple. Horn flies, which are about ½ the size of a house fly, spend most of their time on cattle. Horn flies are distinguishable from other flies because they congregate with their heads pointed down. They are usually seen in groups on the backs and shoulders of cattle. They migrate to the belly when it is hot. The flies may take up to 40 blood meals a day. The female fly must have a blood meal to reproduce. The only time the female leaves the cow is to lay eggs in a fresh manure pile. The eggs will hatch and the larvae will live on the material in the manure pile. In a few days the larvae move into the soil to pupate and emerge as adults. The life cycle from egg to adult takes 2 to 4 weeks. For a more detailed description of the horn fly life cycle go to <http://livestockbugs@okstate.edu>.

Most beef producers are aware that controlling horn flies results in improved weight gains in growing cattle. In addition to better performance in dairy heifers, controlling horn flies will result in decrease in mastitis cases. In one study in Louisiana, dairy heifers without fly control had a tenfold increase in *S. aureus* mastitis when compared to herds with fly control (Nickerson et al., 1995). This information should convince producers who lack a horn fly control program to reevaluate their situation. If producers are concerned about the economic cost of horn fly control, then they should begin when 100 flies are on the animal. This is referred to as the economic threshold. This article deals with heifers; however, past research has shown in dairy cows that have 100 or more flies production losses will occur (Garrett et al., 1956).

One of the most common method of controlling horn flies is the use of insecticides. The insecticide comes in many forms such as organophosphates, pyrethroids, and macrocyclic lactones which can be applied in a spray, pour-on, dust bag, back rubber, or oiler. Insecticide impregnated ear tags are a commonly used method to control horn flies. Since the tags will protect for a limited amount of time, producers should not place the tags in the animal until flies become a problem. Ear tags should not be left in the animal year-round. It is important to remove the tags by fall to reduce resistance problems. Since resistance is a problem with fly tags, producers need to rotate classes of insecticides every year. For more information about rotating fly tags go to <http://livestockbugs.okstate.edu/horn-flies/insecticide-ear-tags>. When using any insecticide, dairy producers should read and follow label directions especially since not all products may be used in dairy cattle.

Other control methods of fly control are larvicides, non-insecticidal, and biological. Larvicides such as Insect Growth Regulators (IRG) are fed to cows in a feed or mineral supplement. The IGR passes through the animal and kills the immature horn fly. An example of a non-insecticidal control method is the use of an insect trap. They work when a cow walks through the trap and the fly is either electrocuted or attaches to a sticky strip. Another type of a trap that was specifically designed for dairies and horn flies is the CowVac which sucks the horn flies off the animals which is good for those dairies in a certified organic program (https://www.spalding-labs.com/products/fly_control_products/cow_vac/default.spx). Traps can destroy large numbers of horn flies quickly. Biological methods of control use some type of predator insect such as dung beetles which eat the immature stages of the fly such as eggs. Producers should never forget how important sanitation is in controlling horn flies. Simply breaking up fecal piles will help because this allows the manure to dry out. Dry manure is not a favorable environment for development of the immature horn fly. The best horn fly control programs will take an integrated pest management (IPM) approach using a variety of control methods for long term success.

Dairy producers are concerned about the wellbeing of their cattle. Controlling horn flies in dairy animals is proven to increase milk yields and in heifers to reduce mastitis. This will not only improve the health of the animal, but also improves the economics of the dairy. If a producer would like a more detailed report on horn flies and mastitis in dairy heifers, go to http://extension.uga.edu/publications/detail.html?number=B1474_2.PDF.

References

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