The Role of *Haematobia irritans* (Horn Fly) in Mastitis Among Dairy Heifers

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In the United States, annual losses from mastitis have been estimated to be over $181 per cow or $2 billion. It is recognized that dairy heifers are at risk of developing mastitis long before calving and that these infections can often persist through calving into the first lactation. Although infections can be caused by a variety of pathogens, approximately 80% of dairies have some level of infection with *Staphylococcus aureus*. Mastitis has been reported in 97% of heifers of breeding age and in pregnant heifers, and 37% of these infections are caused by *S. aureus*.

The horn fly, *Haematobia irritans*, has long been suspected as being a primary carrier of *S. aureus*, and also in creating the lesions that permit the establishment of mastitis in dairy heifers. An earlier study of heifer mastitis showed a higher prevalence of *S. aureus* in Louisiana, compared to Vermont, California or Washington, suggesting that the prevalence might well be higher in states with heavy horn fly populations. Heifers without scabs and abrasions on the teat skin surface have a much lower prevalence (40%) of mastitis than those with scabs and abrasions (70%), and it was assumed that the horn flies can play a major role in creating these lesions. Herds with some form of fly control have also been reported to have had fewer cases of heifer mastitis caused by *S. aureus* and environmental streptococci than did heifers from herds with no fly control.

A recent study was conducted to determine if the horn fly could indeed be the host for colonization of *S. aureus*, and whether its colonization would persist for a time period adequate for the transmission of the organism to the heifer with resultant mastitis.
• This study showed that horn flies can in fact transmit *S. aureus* and cause mastitis by carrying the organism and creating lesions and scabs on teat skin.

• The investigators recommended initiation of a fly control program to reduce populations of the biting and irritating horn fly, especially in herds with an *S. aureus* problem.

• In addition to controlling other production-robbing internal and external parasites, a strategic horn fly control program using IVOMEC® EPRINEX® (eprinomectin) Pour-On for Beef and Dairy Cattle along with permethrin ear tags or self-treatment devices for horn fly control may help reduce horn fly-mediated *S. aureus* mastitis in dairy heifers.

Discussion

The horn fly is a very persistent and costly external parasite and its control is economically important. It is found throughout the United States, although its season is longer and stronger in the southern United States. The horn fly becomes active as early as March in the South with populations peaking around June. A second peak in numbers occurs again around August and September. In the middle to northern regions of the United States, horn flies become active around May and peak in August. The parasite becomes somewhat dormant in the winter season.

One of the tools to control this annoying pest is the appropriate and timely use of IVOMEC EPRINEX (eprinomectin) Pour-On for Beef and Dairy Cattle along with permethrin ear tags or other self treatment devices for horn fly control. IVOMEC EPRINEX Pour-On will control horn flies for up to 7 days after treatment. It is the only pour-on approved for broad spectrum control of internal and external parasites in cattle of all ages, including female dairy heifers of breeding age and lactating dairy cows.

IVOMEC EPRINEX Pour-On controls a wide range of internal and external parasites, including horn flies, so the use of this product in a horn fly control program provides the added benefit of controlling many other important internal and external parasites as well.

Several strategies can be used to control horn flies with IVOMEC EPRINEX. The following is a suggested program for dairy heifers in the South:

**Spring:** IVOMEC EPRINEX Pour-On and either dust bags or back rubbers containing appropriate horn fly insecticides, or insecticidal ear tags. This treatment will give early control of internal parasites and markedly decrease egg shedding, as well as giving early horn fly control.

**Mid-summer:** IVOMEC EPRINEX Pour-On for heifers and remove insecticidal ear tags at this time, if used. This treatment will control internal parasites, especially inhibited *Ostertagia* (brown stomach worm), cattle grubs, and horn flies.
**Fall:** If horn flies are still a problem, use IVOMEC EPRINEX Pour-On and again use ear tags, back rubbers or dust bags.

**Mid-winter:** IVOMEC EPRINEX Pour-On treatment at this time is designed to control internal parasites and lice. Remove ear tags if applied during the fall treatment.

**Horn fly control strategies for the northern United States are as follows:**

**Spring:** IVOMEC EPRINEX Pour-On and insecticidal ear tags or dust bags or back rubbers. This will help prevent the spring and early summer build-up of parasites on the pasture and prevent heavy reinfection.

**Mid-summer:** IVOMEC EPRINEX Pour-On, primarily to control the continued build-up of parasites on the pastures and eliminate any internal build-up. Recharge the self-treatment horn fly treatments, if they are still a problem.

**Fall:** IVOMEC EPRINEX Pour-On and remove ear tags if present. This treatment is especially effective against the inhibited *Ostertagia*.

**Conclusion**

(In addition to controlling other production-robbing internal and external parasites, strategic horn fly control procedures utilizing IVOMEC EPRINEX Pour-On, in conjunction with other horn fly control products, may help reduce horn fly-mediated *S. aureus* mastitis in dairy heifers.

**References**


