

Summer Mastitis – insights on cause, signs, and prevention

Dr. Luciana da Costa, DVM, MSc, PhD. Dept. Veterinary Preventive Medicine - The Ohio State University, Columbus, Ohio.

Although can happen year-round, cases of **summer mastitis** as the name implies increase from June to August, as the combination of wet weather and warmer temperatures encourage fly activity. It can affect beef and dairy cattle (heifers and dry cows as well). Below we discuss briefly the cause, the signs, and prevention measures for this important disease.

Cause

The primary causal organism is the bacteria *Trueperella pyogenes* (previously classified as *Corynebacterium*, *Actinomyces* and *Arcanobacterium*) in combination (or not) with other organisms (*Streptococcus* spp, *Fusobacterium* spp) to cause infection. Important to consider in the pathogenicity of disease are factors intrinsic to *Trueperella pyogenes* such as the presence of virulence factors related to tissue damage (pyolisin) and others associated with mucosal adherence and colonization (neuraminidases, fimbriae, and collagen-binding protein). Additionally, *Hydrotaea irritans*, an insect closely related to the housefly is commonly considered to be the primary vector for the bacteria to cause summer mastitis in cattle. However, not only the presence of flies can cause the disease - damage to the teat, trauma and irritation of the udder are also important risk factors.

Signs and Symptoms

Summer mastitis is a severe form of mastitis causing udder damage with cows presenting high temperature and toxemia. Infected quarters become swollen, hard to touch, and not uncommonly lost. When stripping the infected quarter the content can present a malodorous smell, and curds/traces of blood may appear as the damage to tissue progresses.

Other symptoms can include irritability (as large numbers of flies often grouped around the udder, causing cows to kick frequently), high somatic cell count, reduction in milk yield, and a tendency toward culling since the recovery rate is low even when treatment starts at an early stage. Still, some farmers found to accept a loss in milk yield and sacrifice the infected quarter to save the cow – imperative in those cases is an early start on treatment and careful evaluation to preserve animal well-being.

Better yet is to invest in preventive measures to reduce the chance of cows becoming sick.

Prevention Measures and Treatment

Not different from other diseases, prevention is the ideal strategy as much as possible. Those are the main topics that should be considered to prevent or ultimately treat those affected cows.

1. Fly control is the first line of defense against summer mastitis. In a non-organic system, a pour-on suspension applied early in the grazing season before eggs and larvae start to develop will prevent the fly population from being out of control. Several synthetic pour-on products such as permethrin and deltamethrin are available to control flies. Those are to be applied along the back of the animal. Usually will give protection for 4 weeks but in times when the incidence of summer mastitis is high should be considered more frequently. Be aware of withdrawal time that varies among products (meat from 3 to 14 days and milk from 0 to 6 hours). Organic farms cannot apply those products and should rely on other strategies such as flies trap, grazing management, teat stripping, and isolation of the animal (details below).
2. Grazing Conditions – Reducing larval habitats attractive to flies by removing overgrown vegetation, and tall weeds which can provide cover for flies. Also, keeping the area dry by eliminating standing water. Avoid cows to be near areas where likely there will be high numbers of active flies, such as soggy pastures, and fields next to dense woods where flies can shelter.
3. Teat Damage- monitoring fly numbers surrounding the udder is advised as a great number of flies will increase the likelihood of infection. Animals with any teat damage should be housed if possible.
4. Isolation of infected animals – varies in accordance to the evaluation of condition or teat damage and the number of flies present in the environment - affected animals should be isolated for better monitoring.
5. Stripping - of the udder should be undertaken as often as practical but could present a challenge due to the painful and edematous teat/gland – careful when doing it as kicking is common due to discomfort. When stripping please use a container (not stripping on the floor) to avoid the risk of spreading infection. More details on stripping can be found in English [Stripping to control mastitis - what are the facts behind it Final English.pdf \(osu.edu\)](#) or Spanish [Stripping to control mastitis - what are the facts behind it SPANISH Final.pdf \(osu.edu\)](#).

6. Consult your veterinarian that will consider various drugs including parenteral antibiotic injections and/or intramammary antibiotics as well as non-steroidal anti-inflammatory drugs to reduce fever, swelling, and pain.

Let us know if you are experiencing summer mastitis cases on your farm. We will be glad to help. You may contact us at: Luciana da Costa: da-costa.2@osu.edu