

## Summer Mastitis Vet Times June 2004

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Summer mastitis is a disease of dry cows and heifers and is prevalent in northern Europe. The disease can cause an acute mastitis and commonly results in the loss of the affected quarter. It is estimated that up to 60% of herds in the UK are likely to experience summer mastitis each year with approximately 20,000 or 1.5% of the national herd affected. The incidence is even higher in other countries such as Denmark, which runs at almost 5%.

The disease is predominantly caused by *Arcanobacterium [Corynebacterium] pyogenes* which is the most frequent isolate and responsible for the severe tissue damage and necrosis. Other bacteria have also been associated with summer mastitis and these include *Peptococcus indolicus*, *Bacteroides melaminogenicus*, *Fusobacterium necrophorum* and *Streptococcus dysgalactiae*. *Peptococcus* ferments milk and is responsible for the characteristic foul smell associated with summer mastitis. Despite the number of organisms that have been associated with the disease, they are not all isolated from every case. There are occasions when only a couple of organisms maybe isolated.

Summer mastitis is associated with late summer and autumn but can occur at other times of the year. The seasonality is probably related to calving patterns, and also the time of the year when the sheep head fly [*Hydrotaea irritans*] is most active. These flies have been shown to carry the summer mastitis organisms even in the absence of disease and are believed to be the major means of transmission. They prefer woods, damp ground and stagnant water, sheltered from wind. The flies live in bushes and trees and only fly out to feed on cattle when wind speeds are low, generally less than 20km per hour, and in the absence of rain. They favour landing on the legs, abdomen and udder. 60% of summer mastitis infections occur in the front quarters, and it has been suggested that these are reached more easily. Possibly the swishing effect of the tail removes flies more from the hind teats.

There is controversy about the effect of the sheep head fly, because it has been found without causing disease in cattle. Summer mastitis occurs in parts of the world where *Hydrotaea irritans* are not found and the disease can occur in the wintertime when no flies are present. Other factors such as teat damage maybe required to enable the spread of infection. Teat damage can occur from fly bites, damage from thistles, thorns and maybe even cattle licking themselves. Experiments have been carried out to try and experimentally spread infection from the fly to bovines unsuccessfully. There is still much to be learnt about this disease.

The classic presentation is a quarter that is hot, hard and swollen with a tense and engorged teat. The condition is extremely painful and the secretion from the udder is thick and clotty with a characteristic foul smell. Lameness is often seen because of the painful quarter and it is not uncommon to see swelling in the hocks. Many affected

animals have high temperatures as the disease produces toxæmia. When checking dry cows and maiden heifers it is important to get these animals standing and moving in order to diagnose the disease early. Abortion due to summer mastitis can occur. If the animals are not picked up and treated promptly, death may result.

The classic clinical signs do not occur in every case and farmers and vets will be aware of heifers and cows who come into to be milked after calving and have one or more quarters which can't be milked out. The centre of the teat appears to have a thickened fibrous core running down the centre, which almost feels like a piece of string and is a characteristic sign of an animal that has had summer mastitis infection. These animals may well have had mild infection without showing any significant clinical signs.

The important part of treatment and control is a prompt diagnosis and so during high-risk periods it is important that dry animals are checked twice daily. Any suspect animals should be examined more closely. If cases are diagnosed then these should be removed from the remainder of the dry stock to limit further spread. These animals can be housed and because the sheep head fly does not enter buildings, this is very effective in reducing spread of infection.

Many farmers feel that the administration of intramammary milking cow tubes and injections of antibiotics are adequate for treatment success. As summer mastitis produces toxæmia the more frequently the mastitic secretion can be removed from the udder the greater the likelihood of success. Intramammary antibiotics may have some benefit but a much greater benefit will be achieved from stripping.

Systemic antibiotics will be helpful to minimise the effects of toxæmia. Despite early treatment, very few quarters are likely to recover. Many animals strongly resent stripping and in these cases it is likely that there is going to be a build up of infection. In these cases the only option is to make a longitudinal incision down the teat to allow infected material to discharge. These animals must be kept away from other stock as this discharge is likely to be highly infectious. Even if the teat is not opened it is important that the animal should be removed from the rest of the herd to avoid acting as a reservoir of summer mastitis.

Reducing exposure, fly control and dry cow management can control summer mastitis. It is important to keep animals which are susceptible to infection away from known summer mastitis pastures. Grazing susceptible animals on fields which have no stagnant water, few trees and plenty of wind are likely to limit the prevalence of the sheep head fly.

There are a variety of fly control measures which can be used. Most rely on the flow of sebum over the body surface but it must be remembered that the udder and teats have no sebaceous glands and so there would be no sebum flow and the effect of fly repellents is limited. Fly tags can give good protection of the head and neck but the abdomen and udder are not particularly well protected and these are the favourite target area of the sheep head fly. Fly sprays can be used but it can be very difficult to achieve a thorough covering of each animal and during wet weather their persistence is reduced. This is the same with pour-on preparations.

Some farmers on the continent cover teats with 'micropore tape' so that the flies will not be able to contact the teat. This is very labour intensive and the tape needs to be replaced regularly as often as every 2-3 weeks.

Some of the old fashioned remedies such as Stockholm tar can be very effective. This is an unlicensed preparation but a weekly application can be effective. At high-risk periods some farmers mix some pour-on fly repellent with the Stockholm tar for an enhanced effect, but again this is unlicensed.

The use of antibiotic dry cow therapy definitely has a beneficial effect on reducing summer mastitis but despite the long milk withdrawal period there is normally only adequate cover for 3-4 weeks. During periods of high risk or in high-risk areas some farmers repeat infusions of dry cow therapy 3-4 weeks after the initial dry off. It is important remember that the second infusion of dry cow therapy is likely to be off-label and care needs to be taken to ensure that antibiotic residues do not enter milk.

It is also possible to infuse dry cow therapy into maiden heifers. This must be done very carefully and it is recommended that only the tip of the tube is placed against the teat end and antibiotics squirted through the teat canal under pressure. It is not recommended to insert the tube into the teat canal itself as this is likely to cause more harm than good.

There are a variety of other measures that can be taken such as changing the calving pattern so that the number of dry cows and maiden heifers at the high-risk period will be reduced. This is a longer-term strategy which may or may not fit in with other farm management practices.

Housing animals during the high-risk period will also be effective as the sheep head fly will not enter buildings. It is also possible to put these animals out by night and in by day because at night the sheep head fly is not active. Some farmers like to run their dry cows with the milking herd and apply a teat dip with fly repellents on a twice-daily basis. This can prove very effective.

Most farmers now manage their dry stock in a way to minimise summer mastitis. Animals are kept off summer mastitis pastures and are checked twice daily during the dry period. Antibiotic dry cow therapy is administered to most stock to provide protection during this period and if infected animals are identified they are isolated from the rest of the herd with prompt treatment being instituted. The economic effects of summer mastitis can be severe, especially in maiden heifers, which may end up being culled as they may only milk on two quarters. Now is a good time to talk to farmers about preventative measures for summer mastitis.