

Teat sealants before calving

The administration of internal teat sealant to in-calf heifers before calving is discussed by Niamh Ryan MVB, formerly AGRIC, Jimmy Flynn, Noel Byrne, Sinead McParland, AGRIC, Teagasc, Moorepark; and Seán Arkins, University of Limerick



Internal teat sealant (ITS) forms a physical barrier in the teat canal which helps to prevent bacteria entering the mammary gland and causing mastitis. A heifer/cow's own seal isn't intact as she starts to spring up and so ITS strengthens her own natural seal. There is no antibiotic in the formulation and so excellent hygiene is an absolute must when administering ITS. Also, good facilities, good help and plenty of patience are essential, otherwise, there is potential for disaster – damaged teats, severe mastitis, etc. The practise of administering ITS to heifers pre-calving might be considered on farms where heifer mastitis is an issue (eg. >15%) or a potential issue (eg. <1 cubicle/cow), heifers at contract rearers, on slats, topless cubicles, etc. Preventing mastitis in first lactation has been shown to maximise potential future milk yield and longevity within the herd (Archer et al, 2013). Archer demonstrated that somatic cell count (SCC) at five to 30 days in milk (DIM) during first lactation, is an economically important predictor of future productivity at the herd level. In heifers, ITS should be administered four to six weeks before expected calving date. Studies overseas have shown favourable results but there is a lack of Irish data.

MASTITIS PREVALENCE: PILOT STUDY

A pilot study to investigate if administration of ITS to in-calf heifers before calving reduces the prevalence of mastitis post-calving was carried out in 2014/2015. For the study, in-calf heifers from four Teagasc farms were treated in batches, depending on their calving date. In two of the herds, the ITS was administered in the milking parlour; the other two in a cattle race. An artificial insemination (AI) race is also suitable. Whatever the setting, heifers need to be familiarised with it before the date of infusion. Heifers were restrained by their tails if needed. There were a small number of quarters (<5%) that had small-teat orifices and were difficult to infuse. If a heifer is persistently uncooperative, then she should not be

treated due to the risk of teat-end damage. All teats were disinfected using cotton wool soaked in methylated spirits, concentrating on the teat end, front teats first and then the hind. When administering the ITS, we started with the hind teats first and then the front. It is recommended to squeeze the base of the teat as you administer the entire tube of ITS, but don't massage in. The teats were teat-sprayed immediately after treatment. Two quarters in each heifer were given ITS and two quarters were left untreated. This means each heifer acts as her own control. Heifers were allowed to stand for 15 minutes to allow teat canal to close before returning to housing. They were closely monitored daily during the dry period to check for swollen quarters or signs of systemic illness. At first milking after calving, all heifers were quarter sampled. Bacteriological and SCC analysis of the samples was carried out. This was repeated 14 (+/-3) days post-calving, at mid-lactation and at drying off.

The administration of ITS pre-calving did not influence the subsequent somatic cell score (SCS) = log SCC, of quarters at calving ($p=0.52$), or subsequently, ($p>0.29$). However, teats not administered ITS were between 1.99 ($p<0.05$; mid-lactation) and 3.85 ($p<0.001$; first milking) more likely to have bacteria present than cows which were administered ITS prior to calving.

Further, larger-scale studies are required to demonstrate and if there is a difference in clinical mastitis rates between treated and control quarters.

READING LIST

Archer SC, McCoy F, Wapenaar W, Green MJ. Association between somatic cell count early in the first lactation and the longevity of Irish dairy cows. *Journal of Dairy Science* 2013; 96(5): 2939-2950. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/23522676>