

Udder health effects of polyurethane-based external teat sealer

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Abstract

Intramammary infections from the prepartum period can affect udder health in the following lactation. The aim of this study was to investigate the effects of a polyurethane-based external teat sealer, which was applied on average 4.4 days before calving to primigravid animals and 2.8 days before calving to multigravid animals, on the development of udder health.

In a split udder study, the teat canal orifices of the front left and the hind right udder quarter of clinical udder-healthy cows were sealed with the external teat sealer when first signs of approaching parturition were observed. Front right and hind left teats were left untreated. Aseptic quarter foremilk samples taken in week 1 and 2 after calving were investigated bacteriologically. Clinical mastitis in the first 100 days of lactation was recorded.

In total, 130 primigravid and 93 multigravid cows were included into the study. In comparison to unsealed quarters (2.9% infected quarters), sealed quarters had twice as many intramammary infections (5.8%). The higher rate of intramammary infections in sealed quarters was mainly due to CNS (4.0% in sealed quarters, 2.5% in unsealed quarters). Based on random logistic regression models, the application of the external teat sealer was associated with increased odds of intramammary infections ($P < 0.001$), but not with clinical mastitis occurring in the first 100 days of lactation ($P = 0.165$). Further investigations are needed to characterize the dynamics of microbial populations under the external teat sealer.

Keywords: External teat sealer, polyurethane, udder health, mastitis, dry period, split-udder design