

milk replacer and pasteurized milk, respectively ($P > 0.05$). Preweaning health and performance was significantly better in calves fed pasteurized waste milk as compared to calves fed a traditional 20:20 milk replacer feeding program. Further work is planned to evaluate

the cost-benefit of feeding pasteurized waste milk, the impact on fecal shedding and antimicrobial resistance patterns in fecal pathogens, and prevalence of Johne's disease infection once heifer calves reach maturity.

Effectiveness of an Internal Teat Seal in the Prevention of New Intramammary Infections During the Dry and Early Lactation Periods in Dairy Cows When Used with an Intramammary Antibiotic

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Introduction

The practice of blanket dry cow antibiotic therapy has been very successful in eliminating many existing infections at dry-off and in preventing new intramammary infections (IMI) during the dry period. However, many new intramammary infections still occur during the dry period due to factors such as delays in keratin plug formation, poor sensitivity of some invading pathogens to intramammary antibiotic preparations, and decreases in antibiotic concentrations near the end of the dry period. The primary objective of this study was to describe whether quarters treated with an internal teat sealant in addition to an antibiotic (treated) at dry-off would develop fewer new intramammary infections during the dry period and early lactation, as compared to quarters treated with antibiotic alone (control). Secondary objectives were to describe the effect of treatment on the prevalence of intramammary infection after calving, the incidence of clinical mastitis events between dry-off and 60 days in milk (DIM), and linear score (LS) after calving.

Materials and Methods

The study enrolled 437 cows from two commercial dairy farms in western WI, with four functional quarters and no evidence of clinical mastitis at dry-off. On the day of dry-off, all four quarters were sampled for bacteriological culture and somatic cell count (SCC) measures. After the final milking, all four quarters were

routinely infused with a commercially available long-acting antibiotic. Two contralateral quarters (LF/RH or RF/LH) were then randomly assigned the additional treatment of infusion with an inert internal teat sealant (Orbeseal[®], Pfizer Animal Health, Groton, CT). The teat sealant was stripped out at first milking after calving, and the quarters re-sampled at both 1-3 DIM and 6-8 DIM for bacteriological culture and SCC analysis.

Results and Conclusions

Quarters treated with Orbeseal[®] had significantly lower prevalence of IMI at 1-3 DIM (tx = 22.8%, control = 29.1%), had significantly fewer quarters that acquired a new IMI between dry-off and 1-3 DIM (tx = 20.2%, control = 25.4%), and had significantly fewer quarters affected by a clinical mastitis event between dry-off and 60 DIM (tx = 5.9%, control = 8.0%; $P < 0.05$). Multivariable analysis showed a significant effect of treatment, with treated quarters being 30% less likely to develop a new IMI between dry-off and 1-3 DIM, 31% less likely to have an IMI present at 1-3 DIM, 33% less likely to experience clinical mastitis between dry-off and 60 DIM. Finally, there was a significant reduction in LS associated with treatment. Mean linear scores for control vs. treated quarters were 5.4 vs. 5.1 at 1-3 DIM, and 3.1 vs. 2.8 at 6-8 DIM ($P < 0.05$). Orbeseal[®] teat sealant offers the dairy industry a very promising management tool to prevent new intramammary infections during the dry period.