Comparison of a novel umbilical dip, Super7+™ Navel Dip, to 7% tincture of iodine to desiccate the umbilical remnant in neonatal Holstein dairy calves

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Introduction

Reduction of naval infections through appropriate management including naval dipping is beneficial to the calf and the producer and is reported to decrease naval infection rates from 20-28% to 5-14%. Obviously, naval dipping is of great importance but obtaining tincture of iodine has become problematic. It has become necessary to develop other products that can be utilized to dry the umbilicus and assist in the prevention of navel infections. Hence, the aim of this study was to evaluate Super7+™ Navel Dip as an alternative to 7% tincture of iodine.

Materials and Methods

One hundred neonatal Holstein heifers were utilized in this study. Fifty calves were dipped with Super7+™ Navel Dip (treatment A) immediately following calving and 50 were dipped with 7% tincture of Iodine (treatment B). The umbilicus and the umbilical remnant of all calves were evaluated 48 hours following dipping and at least a 1 cm segment of umbilical remnant was removed and placed in a labeled airtight container. All samples were analyzed within 6 hours of sampling and in 12 hour increments until the samples contained less than 10% moisture. A serum sample was collected from each calf within 48 hours of birth and tested for total protein, immunoglobulins (IgG) and specific gravity. The workers dipping the calves and the technicians analyzing the samples were blinded to the treatment.

Results

Of the umbilical remnants undergoing treatment A, 88% and 100 were desiccated within 48 hours and 60 hours, respectively. Of the umbilical remnants undergoing treatment B, 58% and 100% were desiccated by 48 hours and 60 hours, respectively. There was a strong association between treatment A and drying at 48 hours. ($P = 0.0008$, Mantel-Haenszel Chi-Square). The odds of drying out at 48 hours were 5.31 times higher with treatment A compared to treatment B. There was no clinical evidence of umbilical infection in any of the calves utilized in this study. The total protein, IgG and specific gravity were analyzed from all calves (mixed linear models) and were determined to not be significantly different between treatments ($P = 0.415$, $P = 0.439$, and $P = 0.300$, respectively).

Significance

Super7+™ Navel Dip appears to be superior to tincture of iodine in its ability to more quickly desiccate the umbilical remnant. Hence, Super7+™ Navel Dip appears to function competently as a navel dip and is a viable alternative to 7% tincture of iodine.