



## Evaluating Post-Milking Teat Dip efficacy Using Somatic Cell Count Data

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### ABSTRACT

Teat dipping is an essential practice in preventing new intramammary infections in cows. The procedure involves dipping teats of dairy cows before and after milking with a germicidal solution to reduce teat skin colonization and contamination with mastitis-causing bacteria and minimize penetration. Chlorhexidine is a commonly used teat disinfectant, as it is recognized for its rapid action and residual activity against intramammary infections. However, it is also known for causing anaphylactic reactions and bioaccumulation in the environment causing reactions to form more toxic bi-products. With these concerns in mind, Accelerated Hydrogen Peroxide® (AHP)® products have been found to be non-hazardous, non-irritating to skin or respiratory tract. Furthermore, hydrogen peroxide breaks down into water and oxygen reducing environmental impact.

### BACKGROUND

Post milking teat disinfectants, such as DeLaval Prima and Hamra Blue, are traditionally assessed by identifying new intramammary infections (IMI), using regular individual quarter bacteriology. Although effective, this approach is costly, making field efficacy studies and product registration prohibitively expensive. Somatic cell counts (SCC) are recognized as a proxy for IMI and are relatively inexpensive to perform. SCCs can be used to identify cows as infected or uninfected and can identify new infections by movement across defined thresholds.

### STUDY

The objective of this study was to compare the efficacy of using bacteriology and SCC when comparing two teat dip formulations, one using chlorhexidine and the second using AHP. The study compared the efficacy of these two different teat dip formulations and the impact the products had on teat skin condition.

The two teat dip formulations used in the study were DeLaval Prima (0.5% Accelerated Hydrogen Peroxide) and Hamra Blue (0.4% chlorhexidine). The formulations were compared on three farms in the UK. Four hundred and fourteen cows were recruited over a 20 week period and randomly selected to be dipped post

milking with one of the two formulations. Quarter milk samples were collected for bacteriology and SCC from all cows at enrolment and on completion of the study. Teat skin conditions were assessed bi-weekly and scored on a scale from 1 to 5 encompassing smooth supple skin through to severe chaps. A change in teat condition was calculated by subtracting the mean score at each visit from the score at enrollment.

### RESULTS

The results of the study revealed that both DeLaval Prima and Hamra Blue were effective teat dip formulations that resulted in a significant improvement in teat skin condition. There was no significant difference in teat skin condition between the two formulations. Additionally, it was identified that SCC could effectively identify new intramammary infections, as effectively as bacteriology.

### CONCLUSION

Analysis by various statistical protocols showed that DeLaval Prima was equivalent to Hamra Blue. Although both products are deemed equally efficacious disinfectants, AHP in DeLaval Prima is designed to be non-hazardous and non-irritating for both humans and animals, and is inherently biodegradable making it environmentally preferred.

### IMPLICATIONS FOR AHP

#### AHP has proven cleaning efficacy

- AHP has powerful surfactants, which means it disinfects while it cleans
- High efficacy means low somatic cell counts ensuring high quality milk products

#### AHP is topically compatible

- AHP has been tested to ensure extra emollient care for cows with delicate skin

#### AHP is environmentally sustainable

- AHP's active ingredient, hydrogen peroxide, breaks down into water and oxygen leaving no active residues
- AHP products have been inherently proven to be biodegradable indicating that properly maintained septic systems and/or manure pits can handle normal wastes generated from the use of AHP formulations

## Technical Bulletin



### **AHP provides the perfect balance between safety and efficacy**

- AHP provides a HMIS rating of "0", the safest allowed by the EPA. Handling the product without the usual personal protective equipment means less cost and downtime

### **AHP has realistic contact times**

- Short contact times ensure surfaces remain wet for the required contact time, providing comfort and confidence that disinfection has occurred

### **REFERENCE**

*Bradely, Breen, Janowicz, McKinzie & Hemling (2002). Evaluating Post-Milking Teat Dip Efficacy Using Somatic Cell Count Data University of Bristol Research Poster. Journal of Dairy Science, 2002*