COMPARISON OF POSTMILKING TEAT DIPPING WITH TEAT SPRAYING UNDER NATURAL EXPOSURE CONDITIONS

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A hypochlorous acid germicide was used as a postmilking teat dip or teat spray to determine differences in new intramammary infection (IMI) rates between the two methods of germicide application. From mid March through the end of June 1997, data have shown no significant difference in the application method when IMI caused by all microorganisms is considered. However, there were more new *Staphylococcus aureus* IMI in quarters of the sprayed group than in the dipped group quarters, and more new *Staphylococcus* spp. IMI in the dipped quarters than in the sprayed quarters.

Introduction

Postmilking teat spraying as the method of applying a teat disinfectant has become popular in large dairy herds in which a greater number of cows are milked per man hour (3). Whether a hand-operated pump and reservoir or an electric pump with drop hoses located near each milking unit is used, there are advantages in using this system of disinfection. The most obvious and probably the greatest benefit is that the disinfectant is free of contamination by milk, manure, and dirt. Other advantages include reduction of milking time, and minimum loss of disinfectant due to spillage.

In the present study teat spraying was compared with the conventional method of teat dipping under natural exposure to mastitis pathogens.

Materials and Methods

The Hill Farm Research Station herd of Jersey cows was divided into two groups of approximately 75 cows each. Teats of the first group of cows milked were predipped and postdipped with a teat dip containing 8.84 grams of sodium dichloroisocyanurate (NaDCC) per gallon (gal) of tap water, which released hypochlorous acid as the active ingredient. Four effervescent Agrisept® MC Tabs (marketed by Schering-Plough Animal Health, Union, N.J) were added to 1 gal of tap water and allowed to dissolve thoroughly. Teats of the second group of cows were presprayed and postsprayed with the above dilution of Agrisept® MC Tabs and tap water using hand-operated pumps with reservoirs that held approximately 16.9 ounces. Sampling schedule, procedures, and criteria for diagnosing new IMI were as in (2), except that single quarter milk samples were collected and cultured every 2 weeks during the study.

Results and Discussion

Data are summarized in Table 1. Twenty-eight new IMI have been diagnosed in the dip group and 25 new IMI in the spray group. There were more new *Staph. aureus* IMI in the spray group than the dip group, 8 IMI vs. 3 IMI, respectively. The number of new *Streptococcus spp*. IMI was the same in each group (7 IMI). For coliforms, there were 3 IMI in the dip group and 0 IMI in the spray group. The greatest difference in number of new IMI was for *Staphylococcus spp*., 15 new IMI in the dip group and 9 new IMI in the spray group. When IMI caused by all microorganisms were considered, teat spraying and teat dipping were equally effective.

To be effective, the milker must assure that the spray is applied to the teat from directly below and that the entire teat is covered so that a drop of disinfectant collects at the distal end of the teat (4,5). Efficacy for the NaDCC disinfectant that was applied as a spray agreed closely with an earlier study where this product was applied as a dip (1).

References

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TABLE 1. Comparison of teat dipping and teat spraying using a hypochlorous acid disinfectant under natural exposure conditions. (Updated (9/8/97).

	New intramammary infections (IMI)	
Organisms	Dip	Spray
Staph. aureus	4	15
Staph. spp.	29	15
Strep. spp.	9	11
Coliforms	4	0
Bacillus spp.	0	1
Nocardia spp.	0	2
Pseudomonas spp.	0	1
Total new IMI	46	45