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Comparative efficacy of lactic acid teat dip and TANUVAS teat protect on prevention of sub-clinical mastitis in dairy cows

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Abstract

Mastitis is the most economically important disease in dairy cows and contributes to substantial losses to the dairy farmers. Detection and prevention of sub-clinical mastitis is better than controlling clinical mastitis. Teat dipping with Lactic acid provides disinfection of teats and prevents entry of bacteria into the teat canal, thus preventing the sub-clinical mastitis. Teat Protect, a unique germicidal teat protective spray developed by TANUVAS forms a protective coating on the teat after spraying and prevents microbial entry into the teat canal. Thus On Farm Testing on the efficacy of TANUVAS Teat Protect Spray over the conventional Lactic acid teat dip will be evaluated for the prevention of sub-clinical mastitis in dairy cows.

Keywords: Mastitis, subclinical mastitis, dairy cows, teat dipping, teat disinfection, lactic acid

Introduction

Methodology

Twelve lactating dairy cows were selected from each dairy farm and a total number of 60 dairy cows from 5 dairy farms were selected for the trial. All the 60 dairy cows were screened for somatic cell counts in the milk using CMT kit and 60 dairy cows which are negative for sub-clinical mastitis were selected for the trial. In each dairy farm, for 6 lactating dairy cows, lactic acid were used as a teat dip post-milking and for the other 6 dairy cows, TANUVAS Teat Protect were sprayed on the teats post-milking. Thus in the 5 dairy farms, a total number of 30 dairy cows were receive post- milking teat dipping with lactic acid and another 30 dairy cows received TANUVAS Teat Protect spray after milking for one month. All the 60 cows were screened for sub - clinical mastitis using CMT Kit at weekly intervals up to one month.

Results and Discussion

On Farm Test on 'Lactic Acid Teat Dip on Prevention of Sub-clinical Mastitis in Dairy Cows' using CMT kit

Bovine mastitis is an infectious disease of the mammary glands of dairy cattle, with high worldwide prevalence at both the cow and udder quarter levels. Mastitis alter milk quality, reduce milk yield, and increase treatment and care costs, resulting in great economic losses to the dairy industry (Rajala-Schultz *et al* 2007) [2]. Detection of mastitis is generally based on indicators of the inflammation, such as somatic cell count (SCC), inflammatory cytokine, enzyme activity (e.g., LDH or NAGase), and the electrical conductivity However, California Mastitis Test (CMT) is widely used for preliminary detection of bovine mastitis, which is a cost effective, rapid, user friendly method used to measure the SCC in milk samples (Viguier *et al* 2009) [3]. Five dairy farms belonging to the five progressive dairy farmers of Coimbatore district were selected for the conduct of OFT programme. Twelve lactating dairy cows were selected from each dairy farm and a total number of 60 dairy cows from 5 dairy farms were selected for the trial. All the 60 dairy cows were screened for somatic cell counts in the milk using CMT kit and 60 dairy cows which are negative for sub-clinical mastitis were selected for

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the trial. In each dairy farm, for 6 lactating dairy cows, lactic acid was used as a teat dip post-milking and for the other 6 dairy cows, TANUVAS Teat Protect was sprayed on the teats post-milking. Thus in the 5 dairy farms, a total number of 30 dairy cows received post-milking teat dipping with lactic acid and another 30 dairy cows received TANUVAS Teat Protect spray after milking for one month. All the 60 cows were screened for sub-clinical mastitis using CMT Kit at weekly intervals up to one month. The presence of sub-clinical mastitis in the dairy cows received post-milking teat dipping with lactic acid is in 18 dairy cows (60.00%). The presence of sub-clinical mastitis in the dairy cows received TANUVAS Teat Protect spray after milking is in 13 dairy cows (43.33%).

Use of TANUVAS teat protect spray prevented the entry of the microbes in to the teat canal and decreased the somatic cell counts and preventing sub-clinical mastitis. Compared to the Lactic acid Teat Dip, TANUVAS Teat Protect more effectively prevented the sub-clinical mastitis. It is correlated with the findings of Wan-Ting Yang *et al* (2019) ^[4] that *A. dahurica* and *R. officinale* have heat-clearing, detoxifying, anti-inflammatory, and antibacterial activities and help maintain the normal histopathology of the mammary gland in dairy animals. TANUVAS teat protect is advantageous over the conventional lactic acid teat dip in terms of application, cost and effectiveness in preventing sub-clinical mastitis.

OFT Farms	Date	No. of Cows Screened	No. of Positive Cases					No of Negative Cases
			Single Quarter	Two Quarters	Three Quarters	Four Quarters	Total Positive Cases	
Kaali palayam, S.S. Kulam Block	10.08.18	06	-	-	-	-	-	06
Veda patty, Thonda muthur Block	13.08.18	06	03	01	-	-	04	02
Peelamedu, Coimbatore South Block	14.05.19	06	04	-	-	-	04	02
M.G.C. Palayam, Annur Block	21.05.19	06	04	01	-	-	05	01
Ganapathy, Coimbatore North Block	28.05.19	06	03	02	-	-	05	01
Blocks - 5		30	14	04	-	-	18	12

Total number of Blocks covered – 5

Total number of OFT conducted – 5

Total number of dairy cows received Lactifence Teat Dip - 30

Total number of positive cases – 18 (60.00%)

Total number of negative cases – 12 (40.00%)

Total number of positive cases with single quarter involvement – 14 (77.78%)

Total number of positive cases with two quarters involvement – 04 (22.22%)

On Farm Test on 'TANUVAS Teat Protect' on Prevention of Sub-clinical Mastitis in Dairy Cows' using CMT kit

OFT Farms	Date	No. of Cows Screened	No. of Positive Cases					No of Negative Cases
			Single Quarter	Two Quarters	Three Quarters	Four Quarters	Total Positive Cases	
Kaali palayam, S.S. Kulam Block	10.08.18	06	02	-	-	-	02	04
Veda patty, Thonda muthur Block	13.08.18	06	02	-	-	-	02	04
Peelamedu, Coimbatore South Block	14.05.19	06	03	-	-	-	03	03
M.G.C. Palayam, Annur Block	21.05.19	06	03	-	-	-	03	03
Ganapathy, Coimbatore North Block	28.05.19	06	03	-	-	-	03	03
Blocks - 5		30	13	-	-	-	13	17

Total number of Blocks covered – 5

Total number of OFT conducted – 5

Total number of dairy cows received TANUVAS Teat Protect - 30

Total number of positive cases – 13 (43.33%)

Total number of negative cases – 17 (56.67%)

Conclusion

Mastitis in dairy cows is the most economically important disease and contributes to substantial losses to the farmers due to reduced milk production and high treatment costs. Hence, the study was conducted to found out the comparative efficacy of Lactic acid Teat Dip and TANUVAS Teat protect in preventing sub-clinical mastitis. The presence of sub-clinical mastitis in the dairy cows received post-milking teat dipping with lactic acid is in 18 dairy cows (60.00%). The presence of sub-clinical mastitis in the dairy cows received TANUVAS Teat Protect spray after milking is in 13 dairy cows (43.33%). TANUVAS teat protect is advantageous over the conventional lactic acid teat dip in terms of application, cost and effectiveness in preventing sub-clinical mastitis. Awareness was created among the dairy farmers about TANUVAS Teat Protect and preventing the occurrence of mastitis. The farmers will screen for sub-clinical mastitis regularly and mastitis will be prevented in dairy cows.

Conflict of Interest

Not available

Financial Support

Not available

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