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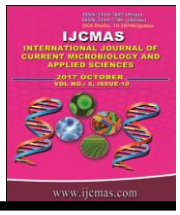

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Testing the Efficacy of Potassium Permanganate as Antiseptic Agent for the Control of Bovine Mastitis

P. Abinaya[1] and S. Thangarasu[2*]

[1]Veterinary practitioner, Salem, Tamil Nadu, India
[2]TANUVAS, Chennai, Tamil Nadu, India
**Corresponding author*

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A B S T R A C T

In milk production India occupies first position in the world. Tamil Nadu occupies Tenth rank in our country. Milk contains all essential micro and macro nutrients compared to other foods. Milk is very good medium for the growth of microorganisms. Teat canal remains open for 5 to 10 minutes after milking. In this situation the microorganisms can easily invade the udder and cause mastitis. Mastitis will affect the quality of milk and production capacity of the cow not only in current lactation and also affects subsequent lactation. In the field condition Tamil Nadu dairy farmers are regularly using the potassium permanganate teat dip solution for cleaning the udder and teat before and after milking. Even though the occurrence of mastitis was persist. In this situation we conduct the study to test the efficacy of potassium permanganate as antiseptic agent for controlling the bovine mastitis in Salem district of Tamil Nadu during the year of 2015.

Introduction

Milk is the lacteal secretion of healthy udder after giving birth in female animals. Dairy farming is the major secondary source of income for small and marginal farmers.

So prevention of mastitis is very essential for production of good quality milk and to increase the production capacity of animals (Vicario *et al.,* 2009).

Thirty eight per cent of mastitis is caused by *Staphylococcus* spp. and *Streptococcus* spp. (Makovec and Ruegg, 2003). *Escherichia coli* and *Klebsiella spp*. are the other mastitis causing organisms. In previous studies 0.10 to 1.0 per cent of Iodine solution (Boddie *et al.,* 2000; Leslie *et al.,* 2005), include bronopol (Boddie and Nickerson, 2002), Sodium chlorite (Oura *et al.,* 2002) and Hydrogen peroxide (Leslie *et al.,* 2006) were used as teat dip solution to control the mastitis.

Somatic Cell Count increases only after the occurrence of mastitis not in other diseases.

Normal Somatic Cell Count in milk is less than two lacks in lactating cows. Somatic Cell Count is the good indicator to test the efficacy of teat dip solutions; this procedure is followed by Vicario *et al.,* (2009)

Materials and Methods

In study area, Animal owners were informed about the importance of teat dip solution and prevention of mastitis. California Mastitis Test was conducted in 40 dairy cows which show the symptoms of low milk yield, less Fat and SNF percentage to find out the occurrence of subclinical mastitis. 30 California Mastitis Test (two or more quarters) positive animals were selected for this study. According to Bilal (2003) study one per cent potassium permanganate teat dip solution was applied and milk was collected in early morning four days once for one month. Direct Microscopic Somatic Cell Count (DMSCC) method is adapted for counting the somatic cells in the collected milk. This method is recommended by FDA Laboratory Quality Assurance Team (Form FDA – 2400d)

Results and Discussion

The result is presented in Table 1. In Somatic Cell Count there was no significant reduction between before and after treatment of potassium permanganate teat dip. Instead of reduction the Somatic Cell Count was increased gradually and this result is against the Bilal (2003). The study revealed that one per cent of potassium permanganate teat dip solution does not have significant effect on control of mastitis in Tamil Nadu.

Table.1 Somatic cell count before and after treatment with potassium permanganate

S. No	Day	Control (X 10^4)	Before treatment (X 10^4)	After treatment (X 10^4)
1	4^{th}	25	25	25
2	8^{th}	25	25	25.5
3	12^{th}	26	25.5	25.6
4	16^{th}	27	25.6	27
5	20^{th}	27	27	27.5
6	24^{th}	28	27.5	28
7	28^{th}	29	28.5	29

One per cent of potassium permanganate solution is clinically not effective to control mastitis in dairy cow. So the researchers are requested to do necessary research to find out the effective teat dip solution to control the mastitis in dairy cow.

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