



## Efficacy of MASTIGUARD and Treatment of Subclinical Mastitis in Dairy Cattle

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### ABSTRACT

A study was conducted to assess the efficacy of TANUVAS MASTIGUARD (Teat protect spray with TANUCHEK SCC kit) in dairy cattle during 2018-19 and 2020-21. Animals in mid lactation were screened with somatic cell count (SCC) test kit and animals having SCC of more than 2.0 lakh were selected for the study. One group of 10 animals was kept as control and the other group of 10 animals were sprayed with teat protect for 6 wk. The observations recorded at weekly intervals and economics and BCR were also studied. At the end of 6<sup>th</sup> week, reduction in SCC of milk was recorded in animals of treatment group (1.5 lakh cells / ml) whereas the SCC remains same in control group (2.7 lakh cells/ml). The net returns from treatment group increased owing to increase in milk production and reduction in cost incurred towards treatment. Hence, use of MASTIGUARD was found to be effective in prevention and treatment of subclinical mastitis in dairy cows.

**Key Words:** Subclinical mastitis, Mastiguard, Teat spray, TANUCHEK kit.

### INTRODUCTION

Mastitis is the one of the economically important diseases of dairy cattle which continues to be the major disease that affects milk production especially of the high yielding crossbred cattle. Mastitis is having significant impact on milk production, milk quality and herd health. The cost towards treatment of mastitis is high and the recovery of udder health is also questionable when it is diagnosed at a later stage. Clinical mastitis can be diagnosed based on clinical signs like udder swelling or redness of udder and changes in milk quality that are visible to naked eye. In subclinical mastitis, there won't be any visible changes in milk quality which makes it difficult to detect and also subclinical mastitis contributes to reduction in milk quantity significantly and there are every chance for the animals with subclinical mastitis to become clinical mastitis. By diagnosing subclinical

mastitis, it would become easier for the farmers to adopt prophylactic and treatment measures at the earliest to prevent subsequent losses. The economic loss due to subclinical mastitis in terms of monetary loss per lactation is huge owing to reduction in milk yield and veterinary expenses. Higher losses were observed in crossbred cows as their high production potential is affected during mastitis period (Sinha *et al*, 2014).

Use of various teat dips and sprays found to be effective in prevention and treatment of subclinical mastitis, and teat protect sprays were found to be more effective than potassium permanganate teat dips (Sukumar *et al*, 2019). Somatic cell count (SCC) is the most widely used single reliable indicator of udder health and SCC can be successfully used in field for diagnosis of subclinical cases of mastitis (Yadav *et al*, 2018; Sharma *et al*, 2010).

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Sr. No.	Particulars	2018-19		2020 -21	
		Treatment	Control	Treatment	Control
1.	No. of cows in each group	10	10	10	10
2.	Milk yield (Litres/day)	8.04	7.20	8.6	7.4
3.	Somatic cell count before treatment (lakh cells/ml)	2.7	2.7	3.0	3.0
4.	Somatic cell count after treatment (lakh cells/ml)	1.5	2.7	2.0	3.0
5.	Gross cost (Rs.)	26954	29754	22316	24725
6.	Gross return (Rs.)	68628	63154	61896	50248
7.	Net return (Rs.)	41674	33400	39580	25523
8.	BCR	2.55	2.12	2.78	2.03

In view of the above, the present study was conducted during 2018-19 and 2020-21 to assess the efficacy of MASTIGUARD (contains Teat protect spray and TANUCHEK SCC Kit) a product from TRPVB, TANUVAS, Chennai, 2016.

### MATERIALS AND METHODS

In this study, TANUCHEK SCC kit and teat protect sprays were used in crossbred animals in mid lactation. TANUCHEK SCC Kit is an on – farm test kit for quick determination of the somatic cell counts which increase in milk samples upon infection of the udder. The specific substrate used changes to blue colour by the membrane bound enzymes from the cells. Accordingly, a drop of milk sample was added to the tube having reagent and 3 drops of enhancer solution was added, mixed well and kept 30 minutes for colour development. The colour development in the test samples was compared with standard colour chart to estimate the SCC count. TANUCHEK SCC kit detects SCC of milk in cases of subclinical mastitis and SCC of milk of animals which recovered from clinical mastitis could also be detected.

Teat protect is an unique germicidal teat protective spray for mastitis. This gel works by preventing mastitis causing bacteria from entering the teat canal and provides extended antimicrobial protection. It is having good antibacterial activity against common bovine mastitis pathogens (*Staphylococcus aureus*, *Escherchia coli*). It

promotes healing of minor cuts and abrasions in teat, udder hygiene and health.

The study was conducted in 2 phases. In each year, crossbred dairy cattle in mid lactation were screened for subclinical mastitis using TANUCHEK SCC Kit and 20 animals with somatic cell count of more than 2,00,00 cells /ml were selected for the study. One group of animals with 10 numbers was kept as control and other 10 animals from second group were sprayed with Teat protect spray on all the four teats and udder after each milking for 6 wk. SCC of milk was recorded at weekly intervals. Gross cost, gross returns, net returns and BCR were calculated and the results were interpreted.

### RESULTS AND DISCUSSION

From the study, it was observed that increase in milk yield of 11.67 and 16.21 per cent was recorded in the treatment group over the control group in the first and second phases, respectively. Use of teat protect spray was effective in reducing the somatic cell count in treatment group to 1.5 lakh cells/ml and 2.0 lakh cells/ml in the study conducted during 2018-19 and 2020-21, respectively. In the first phase, net return and BCR of treatment and control groups were Rs. 41674/-, 2.54 and Rs. 33400/-, 2.12, respectively. In the second phase net return and BCR of treatment and control groups were Rs. 39600/-, 2.78 and Rs. 25550/-, 2.03 respectively. These results were in resemblance with the findings of Thangadurai *et al* (2019) who recorded a somatic

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cell count of 1.6 lakh cells/ml in teat protect spray treated group in comparison to control group 2.75 lakh cells/ml. TANUVAS teat protect was found to be effective in reducing SCC of milk in subclinical mastitis cases that indicated udder health.

### CONCLUSION

It was concluded that, Teat protect spray was effective in treatment of subclinical mastitis and along with TANUCHEK – SCC counter and easier for the veterinary professionals and farmers to detect SCC at field level. By detection of subclinical mastitis, treatment could be initiated at the earliest to prevent further losses by preventing the condition to become a clinical mastitis. The net return from dairy farming increased owing to increase in milk yield and reduction in treatment cost.

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