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Effect of usage of TANUCHEK SCC kit for screening of mastitis in dairy cows

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Abstract

This study was conducted to screen dairy animals with clinical mastitis using TANUCHEK SCC Kit. A total of 320 milk samples were collected from four quarters of 80 cows from 20 different small dairy farms located at Tirupur district. Out of the 320 samples screened, 75 samples were found to be positive for sub-clinical mastitis (23.43%) and 61 samples for clinical mastitis (19.06%). The farmers were advised to use Teat-Protect germicidal spray in these dairy cows twice daily after milking for a period of one month. The milk samples collected from same milch animals after one month period when screened using TANUCHEK SCC Kit showed that 38 samples were positive for sub clinical mastitis (11.87%) and 19 samples for clinical mastitis (5.62%).

Keywords: Cow, mastitis, TANUCHEK

Introduction

Bovine mastitis is considered to be one of the major economically important disease in dairy cows. Regular screening of dairy cows for sub-clinical mastitis is better to prevent and combat mastitis at an early stage. Mastitis defined as inflammation of mammary gland parenchyma, which is caused by bacteria and its toxins (Sharma *et al.*, 2006) ^[4]. Mastitis is characterized by physical, chemical and bacteriological changes in the milk and pathological changes in the glandular tissue of the udder (Sharma, 2007) ^[5]. Mastiguard, the kit developed at TRPVB, TANUVAS contains TANUCHEK SCC Kit and Teat-protect a germicidal spray that can be used by the farmers to control mastitis.

Materials and Methods

Demonstration and Hands on training on the use of Mastiguard kit was given to 20 dairy farmers from five blocks of Tirupur district, Tamil Nadu, India. Out of the hundred farmers, twenty farmers were selected and the dairy cows in their farms were selected for the study. Now, a total of 320 milk samples were collected from 80 dairy cows (all four quarters) and screened for clinical and sub-clinical bovine mastitis. Udder and teats were cleaned with water and KMnO₄ solution and left to dry and the first three streams were discarded and then 2 ml of milk from each quarter were collected in sterile containers and screened for bovine mastitis. Based on the colour card given in the TANUCHEK SCC Kit the Somatic cell count was assessed as per the guidelines prescribed. According to the results interpreted as positive for clinical and sub-clinical bovine mastitis using TANUCHEK SCC kit, the farmers were advised to use the Teat-Protect germicidal spray after milking. After one month interval the same dairy cows were tested with TANUCHEK SCC Kit and the impact of the Teat-Protect germicidal spray was analysed. Data on number of positive cases (quarter-wise) was recorded as per standards prescribed in Table 1.

Results and Discussion

Out of 320 milk samples collected and screened with TANUCHEK SCC Kit, 75 milk samples were identified as positive for sub-clinical mastitis (23.43%) and 61 milk samples for clinical mastitis (19.06%) based on the somatic cell count (Table 1 and Table 2). The owners of the bovine mastitis affected dairy cows were instructed to follow the proper control measures such as, using Teat-Protect germicidal spray after milking twice daily.

After one month interval the same dairy cows were tested with TANUCHEK SCC Kit and the impact of the Teat-Protect germicidal spray was recorded. Now, the 320 milk samples

Table 1: Mastitis Assessment Table

TANUCHEK SCC KIT	Somatic Cell Count	Interpretation
100 x 1000	1,00,000	Healthy Quarter
300 x 1000	3,00,000	Sub clinical Mastitis
500 x 1000	5,00,000	Clinical Mastitis
700 x 1000	7,00,000	Clinical Mastitis
900 x 1000	9,00,000	Clinical Mastitis

Table 2: Percentage of quarters affected before usage of germicidal teat spray

Total animals	Total test	Healthy quarter	Subclinical Mastitis	Clinical Mastitis
80	320	184	75	61
		(57.5%)	(23.43%)	(19.06%)

Table 3: Percentage of quarters affected after usage of germicidal teat spray

Total animals	Total test	Negative	Subclinical Mastitis	Clinical Mastitis
80	320	263	38	19
		(82.18%)	(11.87%)	(5.62%)

Collected from the dairy cows treated with Teat-Protect germicidal spray showed 38 samples to be positive for sub clinical mastitis (11.87%) and 19 samples to be positive for clinical mastitis (5.62%) (Table 3). Studies reported by Devi *et al.* (1997) ^[1] showed that, 75.3% Sub clinical bovine mastitis seen commonly in many dairy animals in India. California mastitis test (CMT) kit also records clinical and sub clinical mastitis using somatic cell count is another field level kit that can be used by the farmers. Karimuribo *et al.* (2008) ^[2] reported that the percent prevalence of sub-clinical mastitis in dairy cows were 75.9 when assessed by the CMT and 43.8 when assessed by culture. Khan and Muhammad (2005) ^[3] reported that prevalence of clinical and sub-clinical mastitis was higher in hind quarters than forequarters and among hind quarters, left hindquarters were more susceptible than the right. This study shows that Mastiguard containing TANUCHEK SCC KIT and Teat Protect spray is an effective and user friendly farm level kit that can be suggested to the farmers to control bovine mastitis effectively.

Summary

TANUCHEK SCC Kit is helpful to identify the mastitis in early stage based on the somatic cell count in milk. Proper udder hygiene and regular screening with TANUCHEK SCC Kit is the way to curtail the mastitis in dairy farm.

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