

# Periodic Research

## Study of Mastitis in Cattle of Dairy Farms

### Abstract

Present study deals to determine the effect of mastitis during early lactation in dairy cows. Mastitis is the most costly disease of dairy animals. Clinical mastitis is known by sudden onset, swelling in udder, pain and reduction in size. This condition alters the milk secretion from the affected udder. The constitution of milk may flake. Or watery in consistency. Mastitis caused by pathogenic agent like bacterial species and viruses and stain. It is decreased lactation of host factor (cow) and also decline image and immune status of the animal. While somatic cell count increased in affected animal.

**Keyword :** Cattle, Mastitis, Lactation, Pathogenic factors.

### Introduction

Mastitis is the inflammation of the udder, that affects a large numbers of dairy cattle. Graves and Fetrow(1993) stated Mastitis has been described as most economically imposing disease facing by dairy producers. Cady et. al.(1983) reported that mastitis significantly decrease production of milk and alters its composition. It also shortens lactation period of animals by days on an average. In this disease udder became inflamed and several bacteria are able to invade the mammary gland and teat canal and multiply to produce harmful substances that results to cause injury of milk secreting tissues. Moore (1993) studied that mastitis caused by gram negative pathogens. Mastitis greek, Mastos = breast, it is = inflammation) is a multiethiological complex disease, which defined as inflammation of mammary gland and is characterized by physical, chemical, and pathological changes in glandular tissues, Radostitis et al. (2000). Mastitis caused considerable changes in milk composition (Table - 1). it alters milk composition and appearance, decrease milk production, elevated body temperature, swelling, redness or heat in infected quarters.

### Materials and Methods

Samples of milk collected from dairy farms of Jabalpur district. The samples of milk collected from dairies in morning at the time of milking. Total 15 samples of raw milk collected and were analyzed for California mastitis test (CMT).

California mastitis test estimating somatic cell count using CMT. It is simple, economical, less time consuming and easy to use at the spot. It provide no indication of bacteria type but the score can be use to determine infection status of quarters.

The B.V.Biological India launched a CMT reagent along with plastic paddle by the name of CMT kit. The accuracy of this method is found to be 88.60%, Sharma (2003). Fresh milk can also be tested using CMT. The procedure is as per Sharma et al.(2009). A plastic paddle with four chambers or shallow cups used to test. About 2 ml of milk directly striped into the cups, LF, RF, LH, RH of the quarters. Then approximately equal quantity of the reagent add to each quarters. The milk and reagent mix gently and result will be noted.

### Results and Discussion

During the testing of raw milk samples the different types of mastitis were identified-- clinical, sub- clinical, latent and aseptic. Table -2 shows the presence of healthy udder and incidence of mastitis in dairy cattle. The samples yielded by cows with clinical mastitis types was estimated to be 50% and the remaining 50% were classified as healthy cows. Allore (1993), Kapur et.al. (1992) stated that the sub- clinical mastitis caused by deferent bacterial species i.e. Staphylococcus aureus, Streptococcus dysgalactiae, E.coli, Mycobacterium tuberculosis, Corynebacterium, Pseudomonas species.



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Image-1- Shows the mastitis udder

# Periodic Research



**Image-2- Shows the Gram positive bacteria (Streptococcus aureus, Staphylococcus agalactiae)**

Image-1- Shows the mastitis udder of an animal.  
Image-2- Shows the Gram positive bacteria (S. aureus, S. agalactiae)

In diseased cattle the percentage of fat, lactose, protein and casein is lower than the healthy cows. As in normal milk it is 3.5, 4.9, 3.6, 2.8 percent and in mastitis milk 2.6, 3.8, 3.45, 2.2 percent, which is lower than normal milk and the concentration of sodium and chlorides were significantly higher (sodium- 0.057, chloride- 0.091) in the milk of inflamed quarters than those in normal once (sodium- 0.105, chloride- 0.137) (Table – 1). Total 15 milk samples tested for mastitis and 8 samples were affected with this disease. Table – 2 shows the infectious udder (LF, RF, LH, RH ) in which mastitis causing bacteria grows and damage the mammary gland, these cause increase in the number of Leucocytes and reducing milk quantity and adversely affected its quality. It is largest problem for dairies. It may be suggested that proper hygienic condition should be maintain by the milk man and other workers. Environment should be clean and healthy for cow as well as human beings

**Table- 1-** Comparison of values percentage of normal milk with mastitis milk.

Constituent	Normal milk	Mastitis milk
Fat	3.5	2.6
Lactose	4.9	3.8
Total protein	3.61	3.45
Total casein	2.8	2.2
Sodium	0.057	0.105
Chloride	0.091	0.137

**Table- 2-** Test of mastitis in raw milk samples

No. of cows	Test of mastitis present in Quarters			
	FR	FL	HR	HL
1	+	+	-	-
2	+	-	+	+
3	-	-	-	-
4	+	+	+	-
5	+	-	+	-
6	+	-	-	+
7	-	-	+	+
8	-	-	-	-
9	-	-	-	-

10	-	-	+	+
11	-	-	-	-
12	-	-	-	-
13	+	+	-	+
14	-	-	-	-
15	-	-	-	-

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