Short Research Article

Incidence and Economics of Mastitis in Tamil Nadu

Abstract

This study was conducted to understand the incidence of Mastitis infection at the farm level. Data were collected from a sample of 120 cattle farms randomly selected from 12 blocks of Tiruvannamalai and Villupuram districts of Tamil Nadu respectively. Incidence of mastitis infection was high (72.5 %) during monsoon, though the spread of mastitis was found throughout the year. Majority (83.3 per cent) of animals in lactation of 30 to 90 days had higher incidence of mastitis. Two-thirds (75 %) of the animals in first and second lactation had high incidence rate of Mastitis. The overall average treatment cost was estimated to be ` 417 per day and the average number of days of illness was 4.19 days which resulted in an average overall treatment cost of ` 1747.92. Improper hygienic management practices lead to the increased incidence of Mastitis at the farm level. Educating the cattle owners on importance of the hygienic management practices and Clean Milk Production (CMP) through extension outreach centres and by field veterinarians would reduce the incidence of mastitis.

Key words: economic loss, Mastitis, incidence, Tamil Nadu

Introduction

Dairying plays an important role in Indian economy. About 20.5 million people depend upon livestock for their livelihood. Livestock contributed 16 per cent to the income of small farm households against an average of 14 per cent for all rural households. Livestock provides livelihood to two-thirds of rural community. It also provides employment to about 8.8 per cent of the population in India [1]. In spite of the contribution made by the livestock sector in many countries, animal diseases remain a major constraint on economic growth, poverty reduction and food security, as well as on health and well-being of the people [2] .

Mastitis in dairy animals was considered as one of the most important economic diseases resulting in huge economic loss to the country. Globally, Mastitis accounts for about 38 per cent of the total direct costs of the common production diseases [3]. In India, the economic losses due to mastitis had increased about 115 folds in the last five decades [4].

A study on economics of sub-clinical Mastitis in central region of India revealed that the overall losses were estimated at ` 1390 per lactation, in which around 49 per cent was due to reduction of milk production alone followed by veterinary expenses which accounted for 37 per cent of the total loss [5].

A study on economic loss due to Mastitis in Tamil Nadu reported that Bovine Mastitis was considered to be one of the most economically important diseases for the dairy industry in developed countries. Total direct economic loss due to acute, sub-acute, chronic and gangrenous Mastitis were found to be ` 1163.80, ` 1817.80, ` 3111.00 and ` 35085.60, respectively in which milk production loss constituted the bulk [6]. The losses in Mastitis were either due to temporary or permanent loss of milk production, poor milk quality, discarding of milk from affected animals prior to or after antibiotic treatment and pre-mature culling of the cow or reduced productive life of animals resulting in more expensive replacement, veterinary fees, cost of medicines and payment for extra labour hours [7].

A study on incidence and economics of clinical mastitis in Karnataka reported that incidence of Mastitis was high during rainy season, followed by winter and summer. Animals in 30 to 90 days of lactation had higher incidence and incidence was highest in III and IV lactation [8].

There are comparatively few studies in the area of incidence of mastitis at the field level. Hence this study was carried out to understand the incidence of Mastitis in the study area of Tiruvanamalai and Villupuram districts of Tamil Nadu

Materials and Methods

To study the incidence and average treatment cost of Mastitis affecting livelihoods of cattle owners, Tiruvannamalai and Villupuram districts which had a greater number of clinical cases treated for Mastitis and recorded highest milk production in Tamil Nadu were selected purposively. A total of 10 cattle owners whose cattle were affected with mastitis

from 12 blocks, six blocks each from the two districts were selected randomly. A total of 120 cattle owners were selected. A well-structured interview schedule was used to collect the data from the farms that had been affected by mastitis. The incidence of clinical mastitis cases was documented based on the distribution over season, order and stage of lactation. The average veterinary expense per day was calculated based on the antibiotic, antipyretic, vitamin supplements, intra-mammary infusion and creams used for the treatment of Mastitis affected cattle.

Results and Discussion

Incidence of Mastitis in the study area

The incidence of clinical Mastitis cases distributed over season, order and stage of lactation are presented in Table 1.

Incidence of Mastitis infection in the study area was high (72.5 per cent) during monsoon between June and December, followed by summer (19.2 per cent) and winter (8.3 per cent). Though the spread of Mastitis was throughout the year it was observed that most of the infection occurred during monsoon.

Table 1

Incidence of Mastitis in the study area

N=120*

S.No.	Season	Frequency	Percentage
Season			
1.	Monsoon (June – December)	87	72.5
2.	Winter (January- February)	10	08.3
3.	Summer (March – May)	23	19.2
Order of lactation			
1.	I and II	90	75.0
2.	III and IV	30	25.0
3.	V and above	-	-
Stage of lactation			
1.	Upto 30 days	18	15.0
2.	31 to 90 days	100	83.3
3.	Above 90 days	02	01.6

*total no. of respondents

Majority (75 per cent) of the animals in first and second order of lactation had high incidence rate of Mastitis followed by animals in third and fourth lactation (25 per cent). This might be due the fact the milk production was highest in second and third lactation. Also poor

hygiene of the shed and reduced attention of milk cattle during the monsoon would have exhibited this result.

An overwhelming majority (83.3 per cent) of animals in lactation between 31 and 90 days exhibited higher incidence of Mastitis followed by 15 per cent in less than 30 days of lactation and a meagre percentage (1.6 per cent) of the animals in more than 90 days category. The high incidence of Mastitis in animals between 31 and 90 days might be due to the fact that high milk yield was noticed during mid-lactation period.

The results were similar to the study conducted by Kumar *et al.,* (2010) in Karnataka on incidence and economics of clinical Mastitis.

Average veterinary expense per day towards Mastitis treatment

The average veterinary expense per day was calculated based on the antibiotic, antipyretic, vitamin supplements, intra-mammary infusion and creams used for the treatment of Mastitis and the results are presented in Table 2.

Table 2

Average veterinary expense per day for treatment of Mastitis in study area

S.No.	Veterinary expenses per day	Dosage per day	Average amount (in `)
1.	Doctor fee	Per visit	100.0
2.	Antibiotic cost (i/m) Intacef / sulbactum	-	200.0
3.	Antipyretic cost (i/m) Meloxicam with paracetamol	20ml	30.0
4.	Vitamin B complex cost (i/m) Multivitamin	10 ml	25.0
5.	Intra-mammary infusion Pendistrin / Mammitol	2 tubes	45.0
6.	Disinfectant Bleaching powder / KMnO4	5 g	07.0
7.	Antiseptic spray / Wisprec spray	1 can	10.0
Total cost			**417.0**
Average number of days of illness			**4.19**
Overall treatment cost			**1747.92**

The treatment cost was calculated based on average cost of each drug used for the treatment of mastitis. The cost of treatment was calculated on a daily basis and the treatment cost was multiplied by the number of days the cattle was affected with mastitis infection.

The average amount spent for antibiotic was found to be `200 followed by antipyretic cost (`30), vitamin supplement injection (`25), oral supplement (`20), while disinfectant and antiseptic spray accounted for `10 each. The cost of intra-mammary infusion was `45. The doctor fees was around `100 per visit and it was mainly the para-veterinarians who exploited the situation and charged more fee during the mastitis infection which was mainly due to lack of manpower in SDAH. The overall average treatment cost was estimated to be ` 417 per day. The average number of days of illness was 4.19 days which resulted in the overall treatment cost of ` 1747.92.

Conclusion

Incidence of mastitis infection from the study area was high (72.5 per cent) during monsoon between June and December, though the spread of Mastitis was found throughout the year. Majority (83.3 per cent) of animals in lactation of 30 to 90 days had higher incidence of Mastitis. Two-thirds (75 per cent) of the animals in first and second order of lactation had high incidence rate of Mastitis. The overall average treatment cost was estimated to be ` 417 per day and the average number of days of illness was 4.19 days which resulted in an average overall treatment cost of `1747.92. It was observed that improper hygienic management practices lead to the increased incidence of Mastitis at the farm level. Hence the cattle owners need to be trained on the importance of the hygienic management practices and Clean Milk Production through extension outreach centres and by field veterinarians.

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