

Short Research Article

Incidence and Economics of Mastitis in Tamil Nadu

Abstract

A-This study was conducted to understand the incidence of Mastitis infection at the farm level. D-The data were collected from the a-sample of 120 cattle farms randomly selected from 12 blocks of Tiruvannamalai and Villupuram districts of Tamil Nadu respectively. Incidence of Mastitis-mastitis infection was high (72.5 per cent) during monsoon, though the spread of m-Mastitis was found throughout the year. Majority (83.3 per cent) of animals in lactation of 30 to 90 days had higher incidence of Mastitismastitis. 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. 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 m-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 as-against an average of 14 per cent for all rural households. Livestock provided—provides livelihood to two-thirds of rural community. It also provided provides employment to about 8.8 per cent of the population in India (DAHD, 2015). 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 (Forman *et al.* 2009).

29 Mastitis in dairy animals was considered as one of the most important economic
30 diseases resulting in huge economic loss to the country. Globally, Mastitis accounts for about
31 38 per cent of the total direct costs of the common production diseases (ref?). In India, the
32 economic losses due to mMastitis had increased about 115 folds in the last five decades
33 (NAAS, 2013 and Tiwari *et al.* 2013).

34 A study on economics of sub-clinical Mastitis in central region of India revealed that
35 the overall losses were estimated at `1390 per lactation, in which around 49 per cent was due
36 to reduction of milk production alone followed by veterinary expenses which accounted for
37 37 per cent of the total loss (Sinha *et al.* 2014).

38 Christy (2014a) in his study on economic loss due to Mastitis in Tamil Nadu reported
39 that Bovine Mastitis was considered to be one of the most economically important diseases
40 for the dairy industry in developed countries. Total direct economic loss due to acute, sub-
41 acute, chronic and gangrenous Mastitis were found to be `1163.80, `1817.80, `3111.00 and `
42 35085.60, respectively in which milk production loss constituted the bulk.

43 The losses in Mastitis were either due to temporary or permanent loss of milk
44 production, poor milk quality, discarding of milk from affected animals prior to or after
45 antibiotic treatment and pre-mature culling of the cow or reduced productive life of animals
46 resulting in. Therefore more expensive replacement, veterinary fees, cost of medicines and
47 payment for extra labour hours (NAAS, 2013).

48 Kumar *et al.*, (2010) in their study on incidence and economics of cClinical cMastitis
49 in Karnataka reported that incidence of Mastitis was high during rainy season, followed by
50 winter and summer. Animals in 30 to 90 days of lactation had higher incidence and incidence
51 was highest in III and IV lactation.

52 There are comparatively few studies in the area of incidence of mMastitis at the field
53 level. Hence this study was carried out to understand the incidence of Mastitis in the study
54 area of.....

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Comment [MD1]: Farm level?

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57 Materials and Methods

58 To study the incidence and average treatment cost of Mastitis affecting livelihoods of cattle
59 owners, Tiruvannamalai and Villupuram districts which had ~~morea~~ greater number of clinical
60 cases treated for Mastitis and recorded highest milk production in Tamil Nadu were selected
61 purposively. A total of 12 blocks, six blocks each from the ~~following two~~ districts were
62 selected randomly. A well-structured interview schedule was used to collect the data from the
63 ~~farmsthat had been Mastitis-affected~~by mastitis farms. The incidence of ~~the~~ clinical mastitis
64 cases was documented based on the distribution over season, order and stage of lactation. The
65 average veterinary expense per day was calculated based on the antibiotic, antipyretic,
66 vitamin supplements, intra-mammary infusion and creams used for the treatment of
67 Mastitisaffected cattle.

68 Results and Discussion

69 Incidence of Mastitis in the study area

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

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

76 **Table1**
77 **Incidence of Mastitis in the study area**

78 **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
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79 Majority (75 per cent) of the animals in first and second order of lactation had high
80 incidence rate of Mastitis followed by animals in third and fourth lactation (25 per cent). This
81 might be due the fact the milk production was highest in second and third lactation. Also poor
82 hygiene of the shed and reduced attention of milk cattle during the monsoon would
83 have exhibited this result.

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

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

91 Average veterinary expense per day towards Mastitis treatment

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

95 **Table2**

96 **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 / sulbactam	-	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

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

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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 mMastitis 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.

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Conclusion

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Incidence of mMastitis 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

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resulted in an average overall treatment cost ~~of~~ of `1747.92. Improper hygienic management practices lead to the increased incidence of Mastitis at the farm level (ref?). 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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