A STUDY ON EVALUATION OF ECONOMIC LOSSES DUE TO MASTITIS IN BOVINE IN PURVANCHAL REGION OF U.P.

Dhananjay Singh and Sanjay Kumar

Division of Livestock Economics,Statistics and Information Technology

Indian Veterinary Research Institute, Izatnagar-243122

Corresponding author : drruchidsingh@gmail.com

ABSTRACT

The present study was carried out to analyze the morbidity rate as well as to evaluate economic losses due to Mastitis in bovine in Purvanchal Region of Uttar Pradesh. Overall morbidity rate in lactating bovine was 15.5% in the study area. The morbidity rate of mastitis were higher in cows (18%) than in buffaloes (12.3%).Among cows crossbred cows were more affected (28.5%) than nondescript cows (6.5%). Chi square test statistic (χ^2) concluded significant difference (P<0.05) of morbidity rates in between nondescript cattle and crossbreed cattle. Total economic losses due to mastitis per lactation in nondescript cows, crossbred cows and buffaloes were Rs.868.34, Rs1314.10 and Rs.1272.36 respectively.

INTRODUCTION

Cattle and buffaloes dominated the livestock production systems in India. The consequences of animal diseases and their economic impact in livestock is complex and well recognized beyond the instant effects on affected animals and producers. Mastitis is the inflammatory condition of the udder irrespective of causes. The decreased milk production accounts for nearly 70% of the total cost of mastitis In India total estimated loss due to bovine mastitis was Rs. 1607.20 crore/annum during 1992 (Singh et al.,1992) which was reached to Rs.6053.21 crores per year in 2001 (Dua 2001). To ensure disease-free animal health status and international standards laid down by the World Animal Health Organization, it is imperative to address the issues of animal health and economic losses due the diseases The government provide financial assistance to the states to control major livestock diseases. Keeping in view the above back ground the present study was undertaken.

MATERIALS AND METHODS

Stratified multistage random sampling was applied for present study. The Purvanchal region is divided into five divisions consisting of seventeen districts. From each division one district and from each district two blocks were selected randomly. From each selected block, two villages were selected by simple random sampling without replacement sampling scheme and the same constituted total ten blocks and twenty villages for the study. From each selected village, 15 respondents were selected for collection of information on morbidity rate and parameters for estimating economic losses due to mastitis.. Thus the total sample size is 300 livestock owners.

(A) Morbidity Rate

The morbidity rates due to mastitis were determined using standard statistical indices. For estimation of morbidity rates of mastitis, the population at risk was taken as Mid-year population i.e. June 2011 population. This was done so that births and deaths in population were balanced for the year of study period. So we avoid taking average population as population at risk. Morbidity rates were calculated on the basis of total prevalence during the period.

$$\text{Morbidity Rate (\%)} = \frac{\text{No. of cases observed during study period}}{\text{Population (mid year)}} \times 100$$

(B) Estimation of Economic Losses

For calculating the losses due to mastitis data like average daily milk yield of lactating animal, price of milk per liter, reduction in milk yield during the affected periods, number of days of illness, discarded milk within affected periods, cost of treatment including veterinary charges were collected from the sample farmers .Yield loss was found out by multiplying reduction in milk yield during the affected periods by the number of days of illness by the price of milk per liter. All these factors were converted into monetary terms and the loss due to mastitis disease was calculated by adding all these factors.

Total Economic Loss = Production Loss (Yield Loss + Loss of discarded milk) + Cost of Treatment (Medicine charges + Veterinary fee)

RESULTS AND DISCUSSION

(A) Morbidity Rate

The results of the present study revealed that morbidity rates of mastitis were significantly .(P<0.05) higher in crossbred cows (28.5 %) than desi cows (6.5 %) and buffaloes (12.3). High incidence of mastitis in cows than in buffaloes were also reported by Dua(2001),Nandkumar(2007), Singh et al. (2008) and Katheria(2011)

(B) Estimation of Economic Losses

The major part of the loss in lactating animal suffering from mastitis was due to cost of treatment because medicine required for curing mastitis is costly . Cost of treatment includes medicine charges and veterinary doctor fee. In case of nondescript (ND) cows it was found out to be Rs.525 whose share was 60.46 per cent out of the total loss. (Table 1) In case of CB cows it was found out to be Rs.695.53 whose share was 52.92 per cent out of the total loss. In case of buffaloes the major

Table -1 Economic losses per animal per lactation in mastitis

Spp/Breed	Yield loss (A) (Rs.)	Discarded milk (B) (Rs.)	Production loss (A+B) (Rs.)	Treatment cost (Rs.)	Total loss (Rs.)
Nondescript (ND)	316.67(92.23)[a]	26.67(7.76)[a]	343.34(39.53)[b]	525(60.46)[b]	868.34
CB cows	546.42(88.33)[a]	72.14(11.66)[a]	618.56(47.07)[b]	695.53(52.92)[b]	1314.1
Buffaloes	552.63(88.42)[a]	72.36(11.57)[a]	625(49.12)[b]	647.36(50.87)[b]	1272.36
Total	522.64(88.62)[a]	67.07(11.37)[a]	589.71(47.22)[b]	658.96(52.78)[b]	1248.67

(a: figures in parentheses indicates percentage to production losses)

(b: figures in parentheses indicates percentage to total losses)

contribution to the total loss was also cost of treatment and was found out to be Rs.647.36 (50.87 per cent of total loss)

Total losses due to mastitis per lactation in ND cows,CB cows and buffaloes were Rs.868.34,Rs1314.10 and Rs.1272.36 respectively. Similar observations were also reported by Ranjeet (2002), Singh et al. (2008). Nandkumar(2007).

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