Full Length Research Article

A STUDY ON INCIDENCE OF FOOT AND MOUTH DISEASE IN THE CUDDALORE DISTRICT OF TAMIL NADU

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ABSTRACT

Diseases are serious constraints affecting dairy cattle production and these diseases affect livestock production in various ways, such as reduced growth rate, milk production, fertility and value of hides and mortality, thus cause considerable economic losses to livestock keepers. Foot-and-mouth disease (FMD) is a highly contagious viral disease of many wild and domestic cloven-footed mammals and many other animals. Hence, this study was planned to estimate the incidence of Foot and Mouth Disease among dairy cows in the Cuddalore District of Tamil Nadu. Multistage random sampling technique was used to select the dairy farmers and dairy animals. The selected district comprised 13 blocks of which, four blocks, *viz*., Parangipettai, Bhuvanagiri, Kammapuram and Virudhachalam were randomly selected. In the next stage, two villages from each selected block were chosen randomly. In total, 1000 farmers having dairy herd size of 2 to 8 were chosen again randomly from the selected blocks, 500 from each block. The study was taken up during the months of April and May, 2009 and the data collected from the sample units related to the year 2008-2009. Foot and Mouth Disease incidence in the study area was found to be ranged from 20.2 per cent in Parangipettai block to 21.4 per cent in Bhuvanagiri block with overall incidence rate of 20.7 per cent. Chi- square analysis revealed that the incidence of mastitis was independent of block where the dairy animal belonged to.

INTRODUCTION

Livestock contribute products for home consumption and use such as milk, meat, hides, skins and manure. In addition, surplus livestock products are sold to generate income that enhances household food security (Perry *et al*., 2003). Livestock in general and dairying in particular play a major role in the Indian rural economy. The importance of dairying in India hardly needs emphasizing as this sector is the major source of income for an estimated 27.6 million people, Livestock sector provides employment to many people and nearly 70 per cent of them are women (Subbarama Naidu, 2004). Diseases are serious constraints affecting dairy cattle production and these diseases affect livestock production in various ways, such as reduced growth rate, milk production, fertility and value of hides and mortality, thus cause considerable economic losses to livestock keepers. In dairy practice, disorders of the udder are among the most frequent clinical conditions encountered (Fourichon *et al.,* 2001).

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Foot-and-mouth disease (FMD) is a highly contagious viral disease of many wild and domestic cloven-footed mammals and many other animals. The disease is characterized by the formation of painful, serous vesicles on the tongue, lips and other tissues of the mouth, and on less stratified integumentary parts of the body such as the udder and teats, the interdigital space and the coronary band above the hooves. It is considered as one of the most costly disease affecting dairy cows. Hence this study is planned to estimate the incidence of clinical mastitis among dairy cows in the selected area.

METHODOLOGY

Cuddalore District of Tamil Nadu was randomly selected for the present study. Multistage random sampling technique was used to select the dairy farmers and dairy animals. The selected district comprised 13 blocks of which, four blocks, *viz*., Parangipettai, Bhuvanagiri, Kammapuram and Virudhachalam were randomly selected. In the next stage, two villages from each selected block were chosen randomly.

Table 1. Incidence of mastitis in the selected blocks

S. No	Name of the Block	No. of FMD affected animals	No. of non-FMD animals	Total
1	Parangipettai	101 (20.2)[*]	399 (79.8)[*]	500 (100.0)[*]
2	Virudhachalam	105 (21.0)[*]	395 (79.0)[*]	500 (100.0)[*]
3	Bhuvanagiri	107 (21.4)[*]	393 (78.6)[*]	500 (100.0)[*]
4	Kammapuram	102 (20.4)[*]	398 (79.6)[*]	500 (100.0)[*]
Grand Total		415[a] (20.7)[**]	1585 (79.3)[**]	2000 (100.0)[**]

* Figures in the parenthesis indicates percentage to the total
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[a] Incidence of clinical mastitis is independent of block (x^2 2.252[NS] P>0.05)

In total, 1000 farmers having dairy herd size of 2 to 8 were chosen again randomly from the selected blocks, 500 from each block. The study was taken up during the months of April and May, 2009 and the data collected from the sample units related to the year 2008-2009. Relevant data were collected from the chosen respondents through personal interview using a pre-tested interview schedule. Cross checks were made to minimise the errors due to recall bias and also to ensure reliability of the information provided by the respondents. Percentage analysis was employed to analyse the incidence of mastitis.

RESULTS AND DISCUSSION

Table 1 presents an overall view of the incidence of mastitis during the study period in the selected blocks. The incidence rate measures the number of new mastitis cases recorded over a period of time, in the form of number of cases per 100 cows over a 12-month period. Foot and Mouth Disease incidence in the study area was found to be ranged from 20.2 per cent in Parangipettai block to 21.4 per cent in Bhuvanagiri block with overall incidence rate of 20.7 per cent. Chi- square analysis revealed that the incidence of mastitis was independent of block where the dairy animal belonged to. This result concurred with the findings of Khounsy et al. (2008).

Conclusion

Foot and Mouth Disease incidence in the study area was found to be ranged from 20.2 per cent in Parangipettai block to 21.4 per cent in Bhuvanagiri block with overall incidence rate of 20.7 per cent.

A well-knit extension programme about disease awareness, giving adequate emphasis to management and control measures is to be developed for education at farmers' level as vaccination and culling of affected animals reduce the FMD incidence. The best and cost effective practices for reducing the incidence of FMD should be propagated widely among the dairy farming community through appropriate channel.

REFERENCES

Alexandersen S, Zhang Z, Donaldson AI, Garland AJ. 2003. The pathogenesis and diagnosis of foot-and-mouth disease. J Comp Pathol. 129:1–36.

Fourichon, C., Seegers, H., Beaudeau, F., Verfailleand L., Bareille, N.2001. Health-control costs in dairy farming systems in western France. *Livestock Production Science.,*68:141–156.

Khounsy, S., Conlan, J. V., Gleeson, L. J., Westbury, H. A., Colling, A., Paton, D. J., Knowles, N. J., Ferris, N. P., Blacksell, S. D. 2008. *Rev Sci Tech*., Dec; 27(3): 839–849

Perry, B.D., Randolph, T.F., Ashley, S., Chimedza, R., Forman, T., Morrisson, J., Poulton, C., Sibanda, L., Stevens, C., Tebele, N. and Yngström, I. 2003. The impact and poverty reduction implications of foot and mouth disease control in southern Africa, with special reference to Zimbabwe. International Livestock Research Institute (ILRI), Nairobi, Kenya, pp.152

Subbarama Naidu, A. and Kondaiah, N. 2004. Livestock production and post production systems – Need for a pragmatic approach. *Indian Journal of Agricultural Marketing.,* 18: 91-105.

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