RESEARCH NOTE

Technoeconomics of control of foot and mouth disease in crossbred cattle

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INTRODUCTION

Foot & Mouth Disease (FMD), a serious problem in crossbred cattle, is currently receiving worldwide attention. An economic analysis should be attempted to understand the extent and magnitude of the problem. Also, the Beneift Cost ratio become important to policy makers to provide the cost of inputs including the operational expenses.

A case study onFMD is made in crossbred cattle to understand the economic consequences and to arrive at Benefit Cost ratio of a vaccination programme. Three villages namely, Gamadi, Bedwa and Chikhodara were selected purposively for the study. Total population of the crossbred cattle in three villages was 200, out of which approximately 30% of the crossbred population (71) was randomly selected for the study.

Four inter-related steps of the study were as under:

1. Generation of data at rural household level.

2. Development of parameters for quantification of economic losses.

3. Cost of inputs for alternate strategies of control.

4. Calculation of benefit cost ratio of vaccination programme.

1. Generation of data at rural household level :

The data on FMD generated from 30% of the crossbred population of three villages are presented in Table 1.

Table 1 :   Analysis of data.

Particular	No.of animals.
Population under study	71
Numbers clinically affected with FMD	15
Mortality (cases)	2
Abortion/metritis cases	3
Mastitis cases	4
Duration of sickness	8 to 20 days
Milk losses	40%

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2. Development of parameters for quantification of economic losses :

Several fectors both direct and indirect were found to contribute towards economic losses due to FMD. It is difficult to quantify the indirect ones for want of reliable data. (eg. impairement of breeding efficiency and consequent calf losses, cumulative life span loss and thus milk loss, rearing and management cost of diseased animals, decreased work output of bullocks, etc.) and only significant accountable components are quantified which are presented in Table 2.

Table 2 : Quantification of economic losses.

Particulars	Approx. economic loss (Rs.)*
Treatment cost	1,149.00
Milk production losses	7,840.00
Losses due to mortality	800.00
Total	9,789.00

* Calculation is derived for 200 crossbreds.

3. Cost of inputs for alternate strategies of control.

There are two effective strategies of control of FMD in the international context.

a. Destruction of population and paying compensation to the farmers.

b. Vaccination of all animals.

The first strategy is not practicable in India because of socio-economic reasons, but the mass vaccination is practicable, the cost of which is depicted in Table 3.

Table 3 : Cost of inputs for mass vaccination

Particulars	Approx.input Cost (Rs.)*
Vaccination cost	852.00
Incidental cost	60.00
Other expenses	100.00
Total	1012.00

* Calculation is derived for 200 crossbreds.

4. Benefit cost ratio of vaccination programme :

The projected economic loss due to FMD was Rs. 9,789.00 and the cost of inputs for mass vaccination was Rs.1,012.00. Therefore, derived benefit cost ratio was 10 : 1.

From Beneift: Cost ratio, it is concluded that by spending one rupee for the control of FMD, the net saving is Rs.10/-. The mass vaccination policy is worth to apply for the control of FMD.