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A front line demonstration on successful treatment of mastitis in dairy cows using ethno veterinary medicine

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Abstract

A Front Line Demonstration for treating mastitis cows with ethno veterinary medicine was undertaken by Krishi Vigyan Kendra, Namakkal for the farmers reporting to the Kendra, in the NICRA village and as well as in the cases reporting to the Teaching Veterinary Clinical Complex, Namakkal. The cows which were in the acute stage of mastitis were selected and the symptoms exhibited were pyrexia with restricted feed intake, swollen udder and serous discharge from the affected quarter with sour taste of milk and a sudden drop in milk production. After physical examination of the udder, the milk was completely drained from the udder and was washed with ordinary tap water and an ethno veterinary medicine paste of Aloe vera (250g), Turmeric (50g) and Calcium oxide (10g) was applied over the entire udder. The farmers were advised to go for six to seven applications daily by making fresh preparation every time for five days.

Keywords: Mastitis, ethno veterinary medicine, cost benefit ratio

Introduction

Mastitis continues to be recognized as one of the major disease problems concerning the dairy industry caused by many bacteria, which includes the *coliform* group, *Streptococci*, *Staphylococci*, *Corynebacteria*, *Pasteurella*, *Mycoplasma*, *Leptospira*, *Yersinia*, *Mycobacteria*, *Pseudomonas*, *Serratia* etc. In India, *Staphylococcus*, *Streptococcus* and *E.coli* generally cause 90-95% of all infections with *Staphylococcus* sp as the chief etiological agent of mastitis in cattle and buffaloes. (Sharma *et al.*, 2007; Sharma, 2008; Singh *et al.*, 2005) [9, 10, 11]. Affected animal loses fifteen percent of production potential and affected quarter loses up to thirty percent milk producing capacity (Hamadani *et al.*, 2013) [5]. Severe mastitis is usually treated systemically, although intramammary therapy will often be used adjunctively with antibiotics. The goal of antibacterial therapy is to attain effective concentrations of the drug at the site of infection (Cebra *et al.*, 1996) [3]. It was well established fact that repeated and improper use of chemicals enhance bacterial resistance (Awandkar *et al.*, 2013; Abrahmsen *et al.*, 2014) [2, 1] thereby reducing the effective health care for mastitis. Thus control of mastitis ailment remains a challenge attributed to multifactorial cause as well as cost of treatment (Moges *et al.*, 2012) [7]. In developing countries, traditional veterinary medicine is particularly important because modern medicines or remedies for animal health care are either inaccessible or unaffordable by poor rural people. Thus with the main objective of promoting the indigenous ethno veterinary practice for mastitis, this front line demonstration was conducted to educate the farmers to prepare the medicine with the easily available house hold herbal preparations for the first aid treatment of mastitis.

Materials and Methods

A Front Line Demonstration for treating mastitis cows with ethno veterinary medicine was conducted by Krishi Vigyan Kendra, Namakkal for the farmers reporting to the Kendra, for the farmers of National Initiative on Climate Resilient Agriculture (NICRA) scheme undertaken village and as well as in the cases reporting to the Teaching Veterinary Clinical Complex, Namakkal. The cows with acute case of mastitis were selected for the study. The cows were reported to have pyrexia, restricted feed intake, swollen udder and wateryserous discharge from the affected quarter with sour taste of milk and a sudden drop in milk production. After physical examination of the udder, the milk was completely drained from the udder and was washed with ordinary tap water and an ethno veterinary medicine paste of Aloe vera (250g), Turmeric (50g) and Calcium oxide (10g) was applied over the entire udder.

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The farmers were advised to go for six to seven applications daily by making fresh preparation every time for five days.

Results and Discussion

The animals recovered uneventfully within three days and feed intake resumed to the normal (Figure I). Farmers generally depend on antibiotic intramammary infusion and the commonly used antibiotics include Ceftiofur, Cefquinome and Ceftriaxone & Tazobactam combinations. But the cases are not responding to therapy and bacterial resistance has been major cause for the failure of treatment. (wang *et al.*, 2013) [12]. Study conducted by Naresh *et al.* (2002) [8] indicated that on an average 5 days were required for therapeutic cure with antibiotic intramammary infusion. Hence, an average cost of Rupees 3500/- per animal towards cost of medicine (Table-I) alone was likely to be incurred by farmers in treating mastitis. This is in concurrence with Devgania *et al.* (2015) [4]. Hence the high costs and

inaccessibility, together with other problems associated with modern healthcare systems, have helped the farmers to switch on to traditional treatment practices. In contrast traditional medicines are affordable, effective, easily available as these are prepared by using locally available plants, plant-parts (Mangal A.K., 2014) [6]. During this front line demonstration, social skills such as explaining the purpose with people, maintain trust of villagers and to act as a point of reference through knowledge were actively performed by our kendra. This was related to social goal for welfare of animal, society and belief in utility value of traditional knowledge derived from elsewhere. This experimentation was successful and the study vindicated that on adopting ethno veterinary practice, the total cost of treatment gets reduced with the benefit cost increasing to 1.12 as against 1.01 in the cases being treated with modern medicine. Thus integrating traditional knowledge with the formal research system ensured desire progress.



Fig 1: Cow with mastitis treated with ethno veterinary medicine

Table 1: Cost benefit analysis of Ethno veterinary medicine over conventional medicine

Parameters	EVM treated (demo)	Regular treatment (check)
Treatment materials used	EVM treatment with Aloe vera (250g), Turmeric(50g) and Calcium oxide(15g)	Antibiotics, Antihistamines, Anti inflammatory Intramammary antibiotic infusion
Number of days of treatment	5	5-7
Number of days for Recovery	3	7
Number of recurrences	3	7
Cost of treatment (Rs.)	50	3500
Milk yield/day	7	6.0
Cost of milk/lit (Rs.)	18	18
Production cost/lit of milk/year (Rs.)	37800	32400
Gross cost (Rs.)	37850	35900
Selling price /lit of milk (Rs.)	20	20
Gross return/year (Rs.)	42500	36500
Net Profit (Rs)	4700	1000
Benefit Cost Ratio	1.12	1.01

Number of farmers: 25

Number of animals treated: 50

The nature of social interaction, and networking with stakeholders can expand and provide intellectual space to communities. As formation of active utilizer group is an essential step for transfer of technologies this front line demonstration made impact through the knowledge system gained by the farming community and enhanced scope of livestock health care as the resource-limited farmers started using ethno-veterinary medicines as their alternative and first aid remedy, for its advantage of less cost and easy accessibility than conventional medicine.

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