Indigenous ethnoveterinary medicinal practices for management of mastitis in dairy cattle

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ABSTRACT

The role of ethno-veterinary medicine in livestock and human health is well known fact due to its widespread practice across the globe, including India. WHO stated that, 80% of people in developing countries depend on ethno-veterinary practices due to its inexpensive, easy accessibility and its preparations. Further, 50% of all modern drugs originally came from plants directly or its structural modification suggests for its potency and safety. Although, India has well practiced traditional knowledge, it could not capitalize the global market like USA, EU and China. Lack of well documentation of traditional “hidden” practices is one of the major limitations for its less exploitation. Therefore, an explorative study was conducted in participatory mode to explore and document the traditional practices for clinical mastitis management of dairy animals in the district of Bangalore urban, Karnataka. Since, the mastitis is most common and costly diseases of dairy animals in India and frequent reason for veterinary drug residue problem; in the present study, we have documented the indigenous practices and its procedure for the management of clinical mastitis in dairy animals.

Key words: Benachu kallu, Ethnoveterinary practices, Mastitis.

Ethnoveterinary medicine refers to the people’s knowledge, skills, methods, practices and beliefs about the care of their animals (McCorkle, 1986). From the Vedic period till the end of 19th century, much of the veterinary practice in India was based on the experiences gathered through generations and improved through informal experimentation this traditional system of medicine also referred to as ethno-veterinary medicine (Krishna et al., 2005). India has one of the sophisticated medical cultures with a tradition of over 5000 years. The livestock owners in India have been using traditional community medication based on plant formulations since time immemorial (Sri Balaji et al., 2010). Mastitis is the most common and costly disease of dairy cattle today and remains one of the major problems for the dairy industry (Heald et al., 2000 and Seegers et al., 2003). Mastitis is the inflammation of udder parenchyma and mostly occurs due to an invasion of bacteria through its teat canal from environment or during milking procedure. This disease can be identified by abnormalities in the milk, udder parenchyma with or without systemic illness. Significant economic losses are mostly due to pathogen-mediated damage of milk secreting tissue of udder and subsequent reduced milk production of affected animals. Besides, veterinary cost, premature culling and death in severe cases are also cause economic losses in mastitis animals. Among the several barriers in achieving the milk production targets, mastitis continues to remain as a most challenging impediment, since the affected quarters show 30% less productivity and cow loses about 50% of production (Srivastava et al., 2012).

This study was conducted in the Haniyuru village of Bangalore Urban district where agriculture and dairy farming is the main economic activity. Majority of the farm families depend on agriculture and milk production for their livelihood. Data were collected using a knowledge build questionnaire, demographic schedule, teacher-made knowledge test, participatory observation, Participatory Rural Appraisal (PRA) tools, and focused group discussions to document the indigenous ethnoveterinary practice for management of mastitis in dairy cattle.

In the first practice, the local community used the combination of Benachu kallu (Fig.1), Desi butter (Fig. 3), Betel leaf (Piper betle) (Fig. 4) and Sambrani (Benzoin resin) (Fig. 2) to treat the mastitis disease. In the first step, the people used to collect the good quality of Benachu kallu; a white colour stone which is available in plenty in the banks of water streams and out streaks of the village. In the second...
step, the pure Desi butter collected from healthy cow. In the third step, the Benachu kallu grind into fine powder and mixed with Desi butter systematically to make into paste form. This whole blending process should be done on the Betel leaf (Piper betle) because of the belief that, the betel leaves have some medicinal property which will diffuse into the paste while blending the Benachu kallu and Desi butter together. In the fourth step, the mastitis infected udder cleaned with fresh warm water which contains turmeric powder and common salt mixture with equal amount. In the fifth step, the medicinal paste which contains Benachu kallu and Desi butter (Fig. 5) were applied over the mastitis affected inflammatory udder of cow or buffalo from top to bottom and the udder left for drying about 20-30 minutes. In the final step, the Sambrani (Benzoin resin) smoke used to fumigate the mastitis affected udder for 5 – 10 minutes for better results of the treatment. This practice administered by the farmers twice in a week.

In the second practice, the local people used combination of Turmeric powder (Curcuma longa) (Fig. a), Drumstick leaves (Moringa oleifera) (Fig. b) and Common salt (Sodium chloride) (Fig. c) to control the clinical mastitis. Firstly, the people used to collect the fine quality of turmeric rhizome and the healthy rhizome dried up under shade for 20-25 days, after proper dried up the turmeric rhizome grind into fine powder. In second step, healthy and disease free fresh drumstick leaves collected from the tender shoots. In third step, the drumstick leaves crushed and grinded with the help of specially designed stone grinder (Fig. d). In fourth step, turmeric powder mixed with drumstick leaves paste (Fig. e) and allowed 30 minutes for complete blending. In fifth step, common salt mixed with the medicinal paste. Finally, the medicinal pastes (Fig. f) were applied over the mastitis infected udder. This method administered by the farmers thrice in a week for improved results.

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Ethnoveterinary Practice: 1

![FIG 1: Benaku Kallu](image1)
![FIG 2: Sembrani (Bebxiub resin)](image2)
![FIG 3: Desi Butter](image3)
![FIG 4: Betel leaf (Piper betle)](image4)

![FIG 5: Medicinal paste which contains Benachu Kallu and Desi Butter](image5)
![FIG 6: Mastitis affected udder](image6)
![FIG 7: Sambrani (Benzoin resin) smoke used to fumigate](image7)
REFERENCES