

ETHNOVETERINARY MEDICAL TRADITIONS AND METHODOLOGY FOR THEIR DOCUMENTATION, ASSESSMENT AND PROMOTION

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1. INTRODUCTION

Prevention, control and eradication of diseases among domesticated animals are major concern as diseases in animals lead to economic losses and possible transmission of the causative agents to humans. It is estimated that approximately Rs 50 billion annually are lost on account of livestock diseases in India. The high treatment cost, inaccessibility and indiscriminate use of antibiotics and hormone, which leads to user-unfriendly effects such as high antibiotic and hormone residues in the milk and other animal products, are serious limitations of modern veterinary management. Modern veterinary care reaches to only 20% of livestock owners.

The veterinary science in India can be classified into codified traditions and folk medicine and has a documented history of around 5000 years. The codified knowledge exist in the form of texts manuscripts on various aspects of veterinary care of the livestock. The folk health practices largely remain undocumented and are passed on from one generation to the other by word of mouth. There is a rich and efficient ethnoveterinary traditions exist in the villages of India which form integral part of the family and plays an important social, religious and economic role. They comprise of belief, knowledge, practices and skills pertaining to health care and management of livestock. There are local healers (*Pashu vaidyas*) who are knowledgeable and experienced in traditional veterinary health care. They use the locally available medicinal plants for treatment of animals. The ethnoveterinary systems are eco-system and ethnic-community specific and therefore, the characteristics, sophistication, and intensity of these systems differ greatly among individuals, societies, and regions. However, they are facing the threat of rapid erosion.

2. OBJECTIVE OF THE STUDY

- To prioritize and document the local ethnoveterinary practices
- To assess these knowledge and practices for their efficacy and safety based on evidences from literatures of Indian Systems of Medicine (ISM) such as Ayurveda/ Mrugayurveda and modern plant pharmacology.
- To promote positively assessed practices through various extension programme such as training, establishment of home herbal gardens, publications and product development through local enterprises.

3. METHODOLOGY

Documentation and Rapid assessment of ethnoveterinary health traditions

Rapid Assessment of ethnoveterinary Health Traditions is a participatory method developed in order to document and assess ethnoveterinary knowledge in a rapid and cost efficient way. In this process the traditional health practices are assessed through a method of dialogue and consensus, wherein folk healers, veterinary doctors, researchers, community members and other ethnoveterinary experts, Ayurvedic doctors, Botanists, participate. The process involves comprehensive documentation of health practices, desk research for finding out and compiling scientific data on these practices and assessment workshops for prioritizing and selecting practices for promotion. The assessment workshops form a pluralistic-medicine platform for a cross-cultural dialogue between traditional and the contemporary medical sciences. Following the assessment, clinical evidence is collected on a particular practice based on pilot clinical studies. Selected best remedies are made into suitable product through local enterprises.

AN ILLUSTRATION OF ETHNOVETERINARY PRACTICES ON MASTITIS – DOCUMENTATION & ASSESSMENT

Local name of mastitis: kechala baavu

Folk Understanding of Kechala baavu

Aetiology

1. Incomplete milking from the udder that is, presence of residual milk in the udder. 2. Trauma or insect bite on the udder. 3. Excessive feeding on tender plants of *avare chiguru* (*Dolichos spp.*) and *kaaki jola* (maize stalk). 4. Unhygienic condition of the cattle shed and feeding methods. 5. Worms-its ingestion. 6. Evil eye on the high milk-yielding udder of the cow.

Clinical features

Local changes: Reddish swollen udder with extreme pain and tenderness at times, hard and warm to touch. Milk changes: Milk is often yellow or curdled, has blood tinge at times and also few suspended particles seen in milk of the affected udder.

Other opinion:

1st Stage: Saltish taste of Milk. 2nd Stage: Curdled milk., 3rd Stage: Hard udder, less milk yield, Others: The outer ear (pinna) is also thickened, fever, and doesn't take food and the animal looks dull.

Ayurvedic Understanding of mastitis:

Observing the cause and symptoms as per the folk medicine, the above health condition *Kechala baavu* as per Ayurveda can be stated basically as a *pitta*¹ *dosha* predominant condition which includes diseases such as *Sthana vidradhi*²: Swelling, heaviness and resembles the abscess in appearance over the breast, *Sthana kilaka*³: Swelling, pain, inflamed and unbearable pain on touch of the female breast. *Pitta-vidradhi* (or) similarly identical features are seen in *rakta vidradhi*⁴ and are only seen in females (various types of abscess).

Modern Understanding of mastitis

Mainly inflamed udder, changes in the colour of milk and appearance of flakes in milk Three phases in the development of mastitis has been described.

1. The invasive phase: In which the bacteria are able to enter the teat orifice and be present in the teat canal and Cristern.
2. The infection phase: The organisms are able to overcome the resistance and so multiply.
3. The inflammatory phase: The organism invades the udder.

Remedy: 1

External application of *Wattakaka volubilis* (Leaves & Stem) paste over the affected udder

Comments based on Ayurvedic understanding

Any inflammation is basically due to involvement of *pitta dosha*. Mastitis is an inflammatory condition and the predominance of *pitta dosha* is inferred by its inflammatory and suppurative nature. The plant species *Wattakaka volubilis* pacifies *pitta dosha*. Hence this remedy should be effective in mastitis. (*Na paakah Pittath ruthe*⁵ which means there is no suppuration in the absence of *pitta dosha*)

Remedy: 2

External application of *Wattakaka volubilis* (stem) and *Commelina benghalensis* (leaves) paste over the affected udder

Comments based on Ayurvedic understanding

This formulation contains *Commelina benghalensis* besides *Wattakaka volubilis* whose usage has been substantiated in the earlier formula.

¹ = Pitta is one of the doshas (morbid elements present in the body), which triggers the disease.

² = Astanga Sangraha, Nidanasthana, Chapter 11 / verse 21-22.

³ = Kashyapa Samhita, Sutrasthanam, Chapter 19.

⁴ = Astanga Sangraha, Nidanasthana, Chapter 11.

⁹ = Susrutha Samhita, Sutrasthanam, Chapter 17.

Comments based on modern pharmacology

As per modern pharmacological studies, *Commelina benghalensis* has anti-bacterial action against Pseudomonas, Staphylococcus, Escherichia coli and Bacillus subtilis⁶. Hence this formulation has some supportive evidence in its usage against *kechala baavu* (Mastitis).

Remedy: 3

A handful of *Andrographis serpyllifolia* (Leaves and Root,) 15 flakes of *Allium sativum* Bulb and *Piper nigrum* (9 nos) are ground to a paste and is orally administered thrice a day for a period of 9 – 21 days

Comments based on Ayurvedic & modern pharmacology. understanding

No Ayurvedic plant references for *Andrographis serpyllifolia*. This plant species has no information on its usage in mastitis or allied problems as per modern pharmacology.

Assessment of Practice for the *Kechala baavu* (Mastitis)

Out of the above-mentioned three formulations, two have supportive literary evidence from Indian systems of medicine (Ayurveda) and modern pharmacology. Only one formulation has no supportive evidence either from Indian system of medicine or modern pharmacology. But it doesn't mean that the practice is not effective. The community's opinion is sought about the health practices. If the health practice is found to be effective as per the community, it is recommended for wider promotion. In case of ambiguous evidence on efficacy or safety it is put for further detailed examination.

Assessment Results for the *Kechala baavu* (Mastitis)

Sr.No	Health practice	ISM doctor	Veterinary doctor	Community	Promotion
1	Remedy 1	Yes	Do not know	Yes	Yes
2	Remedy 2	Yes	Yes	Yes	Yes
3	Remedy 3	Do not know	Do not know	Yes	After careful study.

CONCLUSION

Ethnoveterinary practices have immense contemporary relevance. A Rapid Participatory Assessment model for finding out the best practices was developed and tested in four geographical locations in Southern India. Nearly 120 plant resources for nearly 20 health conditions were studied during this programme. 70 % of the remedies had positive evidence from various systems of medicine and practical experience. 50% the ingredients of the remedies can be easily grown in home herbal gardens and are locally available. 12 remedies have gone through pilot clinical studies and have been made into products, which are now being made through local enterprises. The National Dairy Development Board (NDDDB), Government of India, has now successfully implemented this programme. It is learned in the process that this model if promoted widely can be of immense use for rural communities. We believe revitalisation of ethnoveterinary theory and practice holds the key to better animal health and hence to the prosperity of animal farmers in rural India.

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⁶ = Napralert Database, University of Illinois, Chicago.

FIGURE 1: PROCESS OF RAPID ASSESSMENT OF LOCAL HEALTH TRADITIONS

