A SURVEY OF PLANTS USED IN TRADITIONAL HEALTH REMEDIES OF DOMESTIC ANIMALS BY INDIGENOUS PEOPLE OF SIKKIM, INDIA

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ABSTRACT

In rural Sikkim, where modern veterinary infrastructure is very poor, the local are dependent on their traditional indigenous health care practice to maintain their livestock population. A field survey was done to study and document the indigenous knowledge of various ethnic groups of Sikkim regarding animal healthcare. Number of plants has been collected and the information on their ethnoveterinary uses was gathered from local inhabitants. The information about folk medicinal use, vernacular names of plants and the parts of the plant used are documented. We have recorded 12 sp. of plants, which are used by local people to cure various disease and disorders. The basic aim of the study is to document the knowledge and conserve these medicinal plants.

KEY WORDS: Ethnoveterinary; Tribal people; Livestock; Herb; Medicinal plant.

INTRODUCTION

Ethnoveterinary practices are the holistic livestock health care and management methodologies adapted by non-literate cultures. These practices have been percolating from one generation down to the next by oral transmission. This is where the ethnoveterinary practices distinguish itself from well documented system of medicine like Ayurveda, Sidha, Unani and others (Dwivedi, 1998).

Veterinary practice is an age-old profession and perhaps dated back to the period of Neolithic Agricultural revolution, which changed life style of ancient nomads and paved the way for beginning of civilization. (Schwabe, 1984).The evidence of origin of veterinary medicine in India is from Vedic times, Rig-Veda (2000-1400 BC), the oldest repository of human knowledge, provides the first literary evidence of existence of veterinary cult in India. The books written by Salihotra (1800 BC), Charak (2300 BC) and Palikapaya (1000 BC) describe treatment of animal diseases using medicinal plants. The ancient Indians also had to establish the first state funded well-equipped veterinary hospital during the period of Great Ashoka (238 BC) and Salihotra is considered to be the first known veterinary doctor in the world lived around 1800 BC in Northern India. In fact, he gave his name to veterinary medicine (Salutri) and to veterinary doctors (Saluter) in India (Krishna et al, 2005).

The present exploration work has been done at Sikkim, it has rich biodiversity and cultural diversity. The state of Sikkim situated on the flanks of Eastern Himalayas between $27^0 10'$ – $28^0 5'$ N latitude and $88^0 30'$ – 89^0 E longitude. Maximum part of the state is underdeveloped and not accessible by road, provide excellent condition for the preservation of traditional knowledge.

The ethnobotany of Sikkim Himalaya was first of all described by Atkinson in his premier publication “Economic Botany of the Himalayan Regions” (Atkinson, 1882). Some important ethnomedicinal studies in Sikkim Himalaya has been done by Biswas (1956), Puri & Pandey (1980), Hajra & Chakraborty (1981), Bennet (1983) , Krishna & Singh (1987),Srivastav *et. al.*(1987) and Rai & Sharma (1994). The works of these authors are on plants serving to cure ailments of human beings. The exclusive ethnoveterinary exploration has been not done so far in Sikkim. This article deals with indigenous veterinary herbal health care practices that were documented through a study covering 18 tribal villages, located at different altitude in the Sikkim.

MATERIALS AND METHODS

The survey was done from April to July 2008. The sample villages were located at different altitudes and inhibited by different tribes like Lepchas, Bhutia and Nepalies (Rai & Sharma, 1994). The data presented are based on ethnoveterinary interviews with 38 informants (61% men and 39% women) who are native to the studied region. Plant vouchers were collected. For interviews, we did not use a closed questionnaire,

Name of the plant species	Family	Local name*	Uses
***Azadirachta indica* (L.)A. Juss.**	Meliaceae	Nim	Tender leaves are excellent vermicide, few leaves are given at morning for 4-5 days.
***Celastrus paniculatus* Wild**	Celastraceae	Runglin	Approximately 150 gm of powdered root given in amoebiasis till cures.
***Centella asiatica* (L.)Urban**.	Hydrocotylaceae	Brahm Jhar	For treatment of ulcer 10-12 leaves given at morning and for urinary disorder decoction of whole plant (? one glass) given twice in a day.
***Cissampelos pareira* L.**	Menispermaceae	Batulpati	The decoction prepared from root given three to four times daily (? one glass) to cure fever.
***Commelina oblique* Ham**.	Commelinaceae	Kane	Approximately 100 gm of powdered root bark given twice daily to cure fever.
***Erythrina arbosescens* Roxb.**	Fabaceae	Phaled	Leaf juice thinly applies on the affected areas in the morning and night to cure skin disease.
***Juglans regia* L.**	Juglandaceae	Okhar	In hoof disease paste of leaf applies on infected areas.
***Juniperus forgesii* Komarov**	Cupressaceae	Dheshuba	To cure skin disease extraction of the leaf juice applies on infected areas.
***Ilex dipyrena* Wall.**	Aquifoliaceae	Changen	Leaves are used as fodder to increase the milk production.
***Leea macrophylla* Roxb. Ex. Horn**.	Leeaceae	Bulyettra	Approximately 100 gm of powdered root given with water twice in a day to control dysentery.
***Mallouts philippinensis* Muell.**	Euphorbiaceae	Sinduria/Puroa	Crushed seed are mixed with few drops of mustard oil and lukewarm paste applies on wound.
***Oroxylum indicum* Vent.**	Bignoniaceae	Shivnak	Paste of seed applies on crack nipple for quick healing.

but always bore in mind the information we wanted to obtain. Thus, we tried to orient the open conversation so as not to forget any relevant subject without coercing the informants. This method is a combination of non-structured or non-directed interview and the semi structured, direct or focused interview of ethnographus (Pujadas *et. al*. 2004). In some cases, we also practiced group interview, but a conversation with only one informant was the most common situation (Jain 1995; Martin, 1995). The conversation was in the Nepali language, the local language of Sikkim. We documented the prevalent animal disease, their diagnostic knowledge for curing the disease, and medicinal plant and other raw material used in the treatments. The plant specimens collected during investigation were preserved in the form of herbarium. Identification of plants was done using relevant flora (Hajara & Verma, 1996) and herbaria of Forest Research Institute, Dehradun.

ENUMERATION

The plants studied are enumerated alphabetically with their botanical names, local names (in Nepali; given in bracket), name of families, parts used and their ethnoveterinary uses.

DISCUSSION

In third world countries, more than 80% of rural population relay to some extent on traditional village-based health practitioners and remedies. The situation is similar for livestock. In many developing countries, large percentages of livestock owners continue to manage and treat their animals in the way they learned from their parents and grandparents even through they integrate modern veterinary approaches with traditional practices.

Drug misuse and overuse are rising rapidly. This is a time bomb, side-effects are not listed on the drug label. In India, for example, two species of vulture have been nearly wiped out due to the widespread use of painkillers containing diclofenac in animal and humans (Baumgart, 2005).

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REFERENCES

Atkinson, E.T. (1882). The Himalayan Gazeteer, Vol. 2 (Reprint 1973). Cosmo Publication. Delhi.

Baumgart, W. (2005). Deutsches Tierarzteblatt. 53: **514-517.**

Bennet, S.S.R. (1983). Ethnobotanical studies in Sikkim. Ind. For. 109(7): **477-481.**

Biswas, K. (1956). Common Medicinal plants of Darjeeling and Sikkim Himalayas. Kolkata Supdt. Govt. Press.

Dwivedi, S. K. (1998). Overview of Ethnoveterinary Practices in India. ICAR Summer Short Course on "Techinques for scientific validation and evaluation of ethnoveterinary practices". Division of medicine. IVRI. Izatnagar.

Hajara, P.K. & Verma, D.M. (1996). Flora of Sikkim. Vol. 1. BSI. Kolkata.

Hajra, P. K. & Chakraborty (1981). Indian Journal of Forestry. Vol. 4(3). **217-220.**

Jain S.K. (1995). A Manual of Ethnobotany 2nd Ed. Scientific Publishers. Jodhpur.

Jain S.K. (1996). Ethnobotany in Human Welfare. Deep Publications. New Delhi.

Krishna, B. & Singh S. (1987). J. Econ. Tax. Bot. Vol. 9(1)**:1-7.**

Krishna, L. , Swarup, D. & Patra, R. C. (2005). Ind. J. Anim. Sci. 75 (12)**: 1481-1491.**

Martin, J.G. (1995). Ethnobotany (Methods Mannual) Chapman & Hall. London.

Mathias, E. (2007). The vet. J. 173**: 241-242.**

Pujadas, J.J. , Coma, D., Roca, J.(2004). Etnografia, Universitat Oberta De Catalunya. Barcelona.

Puri & Pandey(1980). Bull.Medico-Ethno-Bot. Res. 1(1)**:55-71.**

Rai, L.K. & Sharma, E. (1994). Medicinal Plants of the Sikkim Himalaya. GBPIHED. Almora.

Schwabe, C. W. (1984) . Veterinary Medicine and Human Health. 3rd edn. The Williams and Wilkins Co. Baltimore.

Srivastav, T.K., Kapahi, B.N. and Atal, O.K. (1987). J. Eco. Taxn. Bot. 11(2): **413-421.**

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