

Use of aquatic and marshy plants in ethno-veterinary practices by tribals and rural people of Jammu province, (J&K), India

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Accepted : April, 2009

SUMMARY

Present communication provides information on 21 aquatic and marshy plants used by tribals and rural people of Jammu province for treating livestock diseases. Jammu province is bestowed with rich biodiversity in terms of aquatic and marshy medicinal plants and is also the home of many tribal and ethnic communities. Information on the plants used for veterinary practices was obtained through interviews of herders, shepherds, heads of tribes and others that work with farm animals, during the period of 2007 to 2008. A total of 21 plants belonging to 18 genera and 15 families were identified for treatment of a variety of animal affliction. Out of 21 plants species 15 species belong to dicots, while 6 species belong to monocots, 5 species are used externally where as 16 are administered orally. These plants have been arranged alphabetically with their families, local names, specific preparation and mode of administration.

Key words : Aquatic and marshy plants, Ethno-veterinary practices, Dicots, Monocots, Tribals

Traditional uses of medicinal plants have been continuing since Vedic period and still a large population is dependent on these plants. Before prehistoric period domestic animals had started to act under the direction of man. Since domestication was the first unnatural work of mankind, therefore, the domesticated animals were subjected to various ailments. In due course of this struggle between man and nature, early men developed various skills in the treatment of their pets by plants through life long trial and error and continued from prehistoric age to modern cybernetic age through various phases of history.

India has long history in the use of herbal medicine for animal treatment Sasaki, (1995) and a few studies on traditional veterinary medicine have appeared during the last two decades Baggot (1997), Issar (1981), Pal (1980), Sebastine (1984). Recognising the importance of such traditional medicines for livestock, which includes buffaloes, cows, goats, horses and sheeps, the FAO regional office for Asia and Pacific has printed a series of publications on the development and promotion of the traditional veterinary medicine during the past few years.

In spite of the clinical agents developed by the pharmaceutical industry, traditional indigenous phytotherapy is still practiced in many rural areas for human and livestock ailments, using strictly guarded

treatments handed from generation to generation.

There are a number of lentic and lotic water bodies at different locations in Jammu province harbouring luxuriant growth of aquatic and marshy plants. These plants are potentially rich in terms of medicinal resources, besides catering to the other needs of the inhabitants for food, fodder, fuel, shelter etc. Several earlier accounts regarding the ethno-veterinary use of terrestrial plants of J&K were given by different workers Sharma and Singh (1989), Chaurasia *et al.* (1999), Showkat *et al.* (2003), Faruque (2000), Singh and Kushal (2000) and Rashid *et al.* (2007), but present is the first attempt to explore the potentialities of aquatic and marshy plants in terms of ethno-veterinary practices. The present work aims at scientific cultivation and preservation of the aquatic and marshy plants as well as dissemination of the knowledge about the ethno-veterinary medicines.

Study area :

Jammu, the winter capital of J&K State is situated at a longitude 74° to 76° - 15°E and latitude 30°-30' to 32°-15'N and altitude ranging from 304.8 to 3658.5 mts. above mean sea level. Jammu province exhibit sub-tropical to alpine climatic conditions and divided into 10 districts - viz. Jammu, Udhampur, Kathua, Doda, Rajouri, Poonch, Ramban, Reasi, Samba and Kishtwar, situated at different altitudes. Jammu province is the home of many tribes and pastoral communities including Gujjars, Bakerwals, Gaddis, Sipis and Paharis, mostly living in remote and farflung areas. These tribals, ethnic communities and rural people being the residents of remote and farflung areas, do not have access to modern

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Table 1 : Summary of information on aquatic and marshy plants in ethno-veterinary practices by tribals and rural people of Jammu province

Name of plant	Local/common name	Family	Part used	Ailment treated	Mode of administration
1. <i>Acorus calamus</i> Linn.	Bachh, Sweet flag	Araceae	Rhizome	Dyspepsia	Crushed rhizome is given with wheat flour to cattle
2. <i>Alisma plantago aquatica</i> Linn.	Mad dog weed	Alismataceae	Stem	Intermittent fever	Stem ground with garlic is given orally to cattle
3. <i>Anagallis arvensis</i> L.	Chari saben/ Scarlet pimpernel	Primulaceae	Leaf	Leeches in nostrils	Decoction of leaf is dropped into the nostrils of cattle
4. <i>Arundo donax</i> Linn.	Gaint Bamboo Reed	Poaceae	Leaf	Dyspepsia	Dried and powdered leaves are fed to cattle
5. <i>Bacopa monnieri</i> Linn.	Jal neem	Scrophulariaceae	Whole plant	Poor production of milk in cows	Cows are fed on whole plant for better milk yield
6. <i>Ceratophyllum demersum</i>	Coontail	Ceratophyllaceae	Leaf	Diarrhoea	Crushed leaves mixed with sugar and salt are fed to cattle
7. <i>Chenopodium ambrosioides</i> Linn.	Jungli Bathua/ stinking weed	Chenopodiaceae	Leaf	Intestinal worms in sheeps and goats	Leaves crushed with banana leaves and paste is given to sheeps and goats
8. <i>Colocasia esculenta</i> L.	Arvi	Araceae	Leaf	Loss of estrus (heat)	One leaf is given orally to bring the cattle into estrus
9. <i>Eichhornia crassipes</i> Mart.	Water hyacinth	Pontederiaceae	Flower and leaf	Skin fissures and crakes in horses, production of poor milk in cattle	Dried, powdered flowers mixed with mustard oil are applied to horse and fresh leaves are fed to cattle respectively
10. <i>Elipta prostrata</i> Linn.	Kesar Raja	Asteraceae	Leaf and stem	Insect bite, cuts, foot and mouth disease and dysentery	Leaf paste ground with garlic is given orally in insect bite. Leaf juice is applied on cuts and foot and mouth disease
11. <i>Mentha longifolia</i> L.	Jungli Pudna / wild ming	Lamiaceae	Whole plant	Dysentery in horses and sheeps	Crushed plant is fed to horses and sheeps
12. <i>Nymphaea nouchali</i> L.	Safed Kamal	Nymphaeaceae	Rhizome	Diarrhoea in cattle	Jucie extract of rhizome is given to cattle
13. <i>Nymphoides peltatus</i> Gmel.	Khuar	Menyanthaceae	Whole plant	Poor production of milk in cows	Plant is fed to cows
14. <i>Phyla nodiflora</i> Linn.	Jal pipli	Verbenaceae	Root	Indigestion	Crushed roots are fed to livestock
15. <i>Polygonum alpinum</i> al. (Meissan)	Laddar	Polygonaceae	Whole plant	Dysentery in cattle	Plant parts are fed to cattle
16. <i>Polygonum hydropiper</i> Linn.	Jal mirchi	Polygonaceae	Leaf	Tongue infection	Chopped leaves are applied to avoid
17. <i>Polygonum brabatum</i> Linn.	Jal bahar/ Bistarta	Polygonaceae	Leaf	Fly infected wounds of cattle	Extract of leaves with mustard oil, is applied to wounds
18. <i>Polygonum plebejum</i> R.Br.	Rani phal	Polygonaceae	Whole plant	Poor production of milk in cattle	Plant is fed to cattle
19. <i>Ranunculus trichopyllous aquaticus</i> L.	Water fenel	Ranunculaceae	Whole plant	Inflammation	Leaf juice is mixed with mustard oil, cloth dipped in extract and bound on area of inflammation
20. <i>Rumex dentatus</i> Linn.	Hulla	Polygonaceae	Root	Diarrhoea	Crushed root mixed with wheat flour given to the cattle
21. <i>Sagittaria sagittifolia</i> Linn.	Arrow head plant	Alismataceae	Leaf	Skin diseases	Leaf extract is given with butter milk to treat skin diseases such as scabies, lesions and warts

veterinary medicines. Under such circumstances, these people treat their domestic animals with plant remedies on the basis of their empiric knowledge.

MATERIALS AND METHODS

Regular field trips were made from April 2007 to December 2008 to various remote and rural areas of the Jammu province inhabited by Gujjars, Bakerwals, rural people etc. Information on utilization of the local plants used for curing common animal/livestock ailments was obtained by interviewing knowledgeable persons (heads of tribes, elderman, women, hakims, etc.) with different ethnic groups and religious sects. To verify and confirm ethno-veterinary claims, the interview questions were repeated within and among interviewers. Each of the plant materials was assigned a field book number and documented to scientific name, local name, part used, method of use and degree of popularity.

RESULTS AND DISCUSSION

The study revealed that the use of aquatic and marshy plants in ethnoveterinary practices is still prevalent among the tribal and rural communities and represent not only a part of their ethnic culture, but witnessed the use of plants in their regular health care practices, since ancient times. During the course of present study, 21 plants species, belonging to 15 families were found to be widely used in study area in different ways against various animal diseases like dyspepsia, fever, diarrhoea, dysentery, intestinal worms, loss of estrus, skin diseases, insect bite, cuts and wounds, foot and mouth disease, indigestion, inflammation, tongue infection and poor milk production. *Acorus calamus* Linn., *Nymphaea nouchali* L., *Sagittaria sagittifolia* Linn., *Eclipta prostrata* Linn., and *Polygonum plebejum* R.Br. were found to be widely used against common animal diseases like dyspepsia, diarrhoea, skin diseases, cuts and wounds and poor production of milk, respectively.

Further it has been noted that leaves are the most frequently utilized plant part against various ailments the

ranking of the parts of plant species being used against different diseases is as follow : Leaf > whole plant > Root > Rhizome > Stem > Flower. A few plants were found to be effective against more than one disease, while most were restricted to use on a specific affliction. The information regarding scientific name, local name, part used, ailment treated and mode of administration is given in Table 1.

The data collected, were compared with relevant published reports Borthakur and Sharma (1996), Gosh (1999), Pandey *et al.* (1999), Reddy *et al.* (1999), Mandal and Dutta (2008). Most of the uses reported here are contemporary and do not seem to have been reported earlier.

The study revealed that aquatic vegetation is highly diverse and possessed enormous resource potential regarding ethno-veterinary practices. Tribal and ethnic communities of the study area depend on herbal remedies for maintaining the health of domestic animals because these treatments are easily available and often less expensive than manufactured veterinary pharmaceuticals. In addition, herbal medications are believed to have a few adverse side effects, and to leave no harmful residues in milk or meat.

Control, preventive measures and elimination of diseases among cattle are major concern, as ailments in livestock (Sheep, goat, buffalo, cow, horse etc) lead to economic losses and possible transmission of causative agents to human beings. A critical analysis of the study also revealed that tribal practitioners were reluctant to disclose the secret of methodology of preparation, and application of ethno-veterinary medicines to any other person, since they believe that if they do so, the efficacy of the practice will vanish. There is no documentation of such indigenous practice, rather it has been transmitted across generations by oral tradition and, therefore, is in danger of extinction. Hence, enhanced efforts are needed to facilitate the integration of plant based ethnoveterinary medicine and practices with modern operations for sustainable utilization of plant resources and perseverance of indigenous traditional knowledge.

REFERENCES

- Baggot, J.D. (1977). Principles of Drugs Disposition in Domestic Animals. The Basics of Veterinary clinical Pharmacognosy. W.B. Sainders Co., Philadelphia, pp. 144-189.
- Borthakur, S.K. and Sharma, U.K. (1996). Ethnoveterinary Medicine with special reference to cattle prevalent among the Nepalties of Assam, India.
- Chaurasia, O.P., Singh, Brahma, and Sareen, S.K. (1999). Ethno-medicinal plants of Arctic Desert Ladakh used in veterinary practices. *J. Economic & Taxonomic Bot.*, **23** (1-2) : 155-160.
- Farooqe, N.A. (2000). Indigenous Ethnoveterinary knowledge and livestock Management in Trans human Pastoralists of Central Himalayas. *J. Human Ecol.*, **11** : 319-322.

- Gosh, A. (1999). Herbal Veterinary medicine from the tribal areas of Bankura district, west Bengal. *J. Economic & Taxonomic Bot.*, 23 (1-2) : 557-560.
- Issar, R.K. (1981). Traditionally important Medicinal plants and folklore of uttarakhand Himalayas for animal treatment. *Journ. Scientific Res. Medicinal Plants*, 2 : 61-62.
- Mandal, A.K. and Dutta, B.B. (2008). Ethnoveterinary practices by Santhal tribe in Jamtara district of Jharkhand. *J. Environ. and Ecoplan.*, 14 (3) : 735-738.
- Pal, D.C. (1980). Observation on folk lore about plants used in veterinary medicine in Bengal, orissa and Bihar. *Bulletin of Botanical Survery of India*, 22 : 96-99.
- Pandey, H. Prakash, Verma, B.K. and Naram, S. (1999). Ethnoveterinary plants of Gonda Region. U.P, India. *J. Economic & Taxonomic Botany*, 23 (1-2) : 199-203.
- Rashid, A. Anand, V.K. and Shah, A.H. (2007). Plant resource utilization in the ethoveterinary practices by the Gujjar and Bakarwal tribes of Jammu and Kashmir. State, India. *J. Phytol. Res.*, 20 (2) : 293-298, 2007.
- Reddy, K.N., Raju, R. and Venkata, R. (1999). Plants in ethnoveterinary practices in Anantpur District, Andhra Pradesh. *J. Economic & Taxonomic Bot.*, 23 (1-2) : 347-357.
- Sasaki, M. (1995). Traditional Veterinary medicine in Aisa. In N. Chomchalow and H.V. Henle. eda. *Medicinal and Aromatic plants in Asia : Breeding and Improvement*. Oxford and IBH publishing co. Pvt. Ltd. New Delhi. pp. 83-88.
- Sebastine, M.K. (1984). Plants used as veterinary medicine, galactagogue and fodder in the forest areas of Rajasthan. *J. Economic & Taxonomic Bot.*, 5 : 785-788.
- Sharma, P.K. and Singh, V. (1989). Ethnobotanical studies on North-western and Trans Himalays. V. Ethnoveterinary, Medicinal plants used in Jammu and Kashmir State. *J. Ethno pharmacol.*, 27 : 63-70.
- Showket, Y., Nawchoo, I. and Iqbal, M. (2003). Traditional Veterinary medicine among the tribals of Kashmir Himalaya. *J. Herbs, Spices and Medicinal Plants*, 10 (4) : 121-127.
- Singh, K.K. and Kaushal, K. (2000). observation on Ethnoveterinary medicine among the Ghadi tribe of Kangra valley in Himachal Pradesh, *Ethnobotany* 120, 42-44 (Eds.) Jain S.K. Deep publication, New Delhi.

