



ETHNOVETERINARY MEDICINAL USES OF SOME PLANT SPECIES BY THE MIGRATORY SHEPHERDS OF THE WESTERN HIMALAYA

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Abstract

Livestock rearing is avital pursuit in western Himalayan region and it plays asignificant role in the economy of the tribal migratory shepherds. The present study was aimed to identify and document the ethnoveterinaryplants used by tribal migratory shepherds in high hills of Chitkul range in Kinnaur district of Himachal Pradesh located in western Himalayas. In high hills of Chitkul range a total of 33 ethnoveterinary plants (herbs 11, shrubs 6, trees 4, climber 1 and grasses 11) were used by shepherds. The commonly used plant species were *Abies spectabilis*, *Asparagus filcinus*, *Aconitum heterophyllum*, *Betula utilis*, *Cannabis sativa*, *Ephedra Gerardiana*, *Rhododendron anthopogon*, *Thymus serphyllum* and *Trillium govianianum* etc. It was found that more scientific studies should be carried out to determine the effectiveness of identified plant species used in primary healthcare of livestock by tribal migratory shepherds.

Kew words: Shepherds, Ethnoveterinary medicines, Livestock, western Himalaya.

Introduction

Medicinal plant species have a long history of use traditional health care systems and numerous cultures around the World still rely on plants for their primary health care. Since the advent of civilization Humans have used herbal remediesfor curing different illnesses in their domesticated animals. Thus ethnoveterinary treatment system is based on traditional knowledge, folk belief, skills, and methods used for curing health of animals. A large number of rural people use local herbal medicines for treatment of their domestic animals and the role of ethnoveterinary medicine in livestock development is beyond dispute (Khuroo *et al.*, 2007; Lalit and Pande, 2009; Radha *et al.*, 2019). The Gujjars tribe commonly inhabiting the hilly regions of the Himalayas, chiefly depends on the livestock rearing for their income. Living on the outer edge of mountains, Gujjars by tradition graze their livestock such as cows, sheep, goats and horses, etc all over the landscape in the area (Lawrence, 1895).

Ethnobotany has an enormous significance in understanding the association existing between socio-cultural systems and the biodiversity (Mahmood *et al.*, 2011). Since times immemorial, the tribal societies have accepted traditional and local means of therapeutic systems (Singh and Lal, 2008; Radha and Puri, 2019). Tribal people, chiefly in the developing countries have always used native plant species to meet their requirements of fuel, food, medicine and different variety of extra necessities (Pandey, 2009). The traditional knowledge, which is learned through ancient skills, practices and experiences by the native societies while facing the challenges of daily life expectancy, generally has no documented record. This traditional knowledge is commonly transmitted orally from one generation to next as a word of mouth (Phondani *et al.*, 2010). The traditional knowledge, skills and methods of the tribal societies about the health care of livestock constitutes ethnoveterinary applies (Mc-Corkle,

1986). Historically tribal people have been using herbs growing in their surroundings for the cureand maintenance of their livestock (Ahmad *et al.*, 2017). In current times, both in developed and developing countries of the World, research surveys focusing on the identification documentation of ethnoveterinary practices of plants, have been carried out (Mishra, 2013; Radha and Puri, 2019).

Material and Methods

The method employed during the present study were designed with the sole purpose of eliciting the precious wealth of information on the ethnoveterinary uses of medicinal plants practices by the tribal migratory shepherds of western Himalaya. Extensive field studies were carried out in high hills of Chitkul range in district Kinnaur of Himachal Pradesh, western Himalaya. Usually, the elderly and experienced migratory shepherds were interviewed. Data were collected through interview, focus groups discussions, participatory observation, and by administering questionnaires, information regarding the common plant names, habit, parts used and ailment treated was documented during each interview. The voucher specimens of plants were collected and identified with the help of Botanical Survey of India, Dehradun Uttarakhand. Finally the identified plant specimens with Voucher numbers have been deposited in the Herbarium of Shoolini University, Solan, Himachal Pradesh.

Results and Discussion

During the survey and interactions with the migratory shepherds it was found that the knowledge on ethnoveterinary was acquired by them through experience and from their elders. In high hills of Chitkul range a total of 33 ethnoveterinary plants (herbs 11, shrubs 6, trees 4, climber 1 and grasses 11) were used by shepherds. The plant species *Abies spectabilis*, *Asparagus filcinus*, *Aconitum heterophyllum*, *Apluda mutica*, *Betula utilis*, *Cannabis sativa*,

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Ephedra gerardiana, *Oxalis acetosella*, *Rhododendron anthopogon*, *Thymus serpyllum* and *Trillium govanianum* were commonly used species.

In Chitkul the most common reported diseases of livestock were skin infection, wound healing, cold, indigestion, cough, foot and mouth diseases. The commonly used plant species for skin infection were *Acer pictum*, *Betula utilis*, *Dianthus angulatus*, *Dioscorea deltoidea*, *Ephedra gerardiana*, *Juniperus communis* and *Oxalis corniculata* for Indigestion: *Asparagus filcinus*, *Cynodon dactylon*, *Dioscorea deltoidea* and *Thymus serpyllum* were used; for wound healing *Aconitum heterophyllum*, *Asparagus filcinus*, *Betula utilis*, *Iris hookeriana* and *Trillium govanianum* were used; for foot and mouth diseases *Asparagus filcinus*, *Dioscorea deltoidea*, *Thymus serpyllum* and *Trillium govanianum* were used; for cold *Asparagus filcinus*, *Thymus serpyllum* and *Trillium govanianum* were used; for cough *Asparagus filcinus*, *Dioscorea deltoidea*, *Rhododendron arboretum* and *Trillium govanianum* were used.

In all plants belongs to same or different 33 families were being used. Further among different parts used it was observed that leaves use was 67 %, followed by roots (11 %), whole parts (6%), (bark 4%), seeds (4%), flowers (4%), tubers (2%) and fruits (2%). It is pertinent to mention that a few plants were used as a whole and these were *Aconitum heterophyllum*, *Asparagus filcinus* and *Cynodon dactylon*. Seeds of *Cannabis sativa*, which grows wild in the Himalaya, is used for body pain and not only for livestock but also by the shepherds themselves. It is found that most of the plants used as ethnoveterinary belong to herbs (including grasses) and constitute 34 % of the documented plants. Only four tree species were used as ethnoveterinary purposes in Chitkul village region and these were *Abies spectabilis*, *Acer pictum*, *Betula utilis* and *Juniperus communis*. Leaves of these trees were used for ailment of wound healing or skin infection to the animals.

In all 33 plants documented for ethnoveterinary purposes belongs to same or different families were *Asparagaceae*, *Betulaceae*, *Cannabaceae*, *Caryophyllaceae*, *Chenopodiaceae*, *Compositae*, *Coniferaeae*, *Dioscoreaceae*, *Ephedraceae*, *Ericaceae*, *Euphorbiaceae*, *Fabaceae*, *Iridoideae*, *Lamiaceae*, *Liliaceae*, *Oxalidaceae*, *Pinaceae*, *Poaceae*, *Polygonaceae*, *Pteridaceae*, *Ranunculaceae* and *Sapindaceae*. It was found that *Dioscorea deltoidea* was the most sought out plant as it has multiple uses in curing diseases, as per shepherds.

Shepherds reported that paste of fresh leaves *Acer pictum*, *Adiantum caudatum*, *Aconitum heterophyllum*, *Dianthus angulatus*, *Dioscorea deltoidea*, *Ephedra gerardiana*, *Juniperus communis*, *Oxalis acetosella*, and *Pennisetum lanatum* were applied on skin for curing skin diseases. Tubers of *Dioscorea deltoidea* mixed with gur (jagery) and fed to livestock for curing cough, fever, body pain, indigestion, foot and mouth diseases, wound healing, skin diseases and ear diseases. Dried seeds of *Ephedra gerardiana* were used to cure cough, cold, body pain, internal injury, skin diseases, wound healing and sprain. Dried rhizoids of *Trillium govanianum* was used to treat cough, cold, asthma, fever, body pain, wound healing, internal injury,

mouth and foot diseases. Leaf extract of *Oxalis acetosella* was applied on skin to treat skin diseases and body pain. The fresh juice of *Rhododendron anthopogon* leaves and fruits were used to cure cough, fever and body pain.

Conclusion

It is concluded that documentation of this ethnoveterinary traditional knowledge is thus an urgent matter. In depth studies are necessary to determine how the economic potential of ethnoveterinary practices can be used. It is observed that more ethnoveterinary and pharmacological studies must be carried out to improve better understanding of traditional practices in improving lives and livelihood of migratory shepherds in western Himalayan state of Himachal Pradesh.

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