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ETHNO-PHYTO-VETERINARY MEDICINES IN NORTHERN PAKISTAN

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ABSTRACT

The Mountains of District Abbottabad (Northern Pakistan) are endowed with a diverse plant wealth. The current communication gives the results of an ethnobotanical survey of the area for documentation of medicinal plants used to cure different ailments of animals. In this region Bakerwals and other migratory herders utilize herbal remedies for the treatment of their livestock. Periodic field trips were undertaken during 2001-2005 to various rural and distant areas of district Abbottabad. Information on the utilization of local plants used for curing common animal/livestock ailments was obtained through interviews of herders, shepherds, and others that work with farm animals. The treatment inventory of a healer typically includes 7-10 types of diseases. The most frequent diseases are diarrhoea, after birth retention, prolapse of uterus, constipation, foot and mouth rot, colic, indigestion, blood in urine and fever, etc. A total of 54 plants within 34 families were identified for the treatment of a variety of animal diseases.

Key words: Ethnobotany, Flora, Veterinary diseases, Abbottabad, Pakistan.

INTRODUCTION

The study area is located in the NorthWest Frontier Province (NWFP), in the Himalaya region of Northern Pakistan. Fortunately Pakistan especially its northern areas, has a unique position among developing countries and has a great wealth of medicinal flora. Pakistan has varied climatic and ecological zones with the vast floral diversity. The flora of Pakistan including Azad Kashmir contains nearly 6,000 species of flowering plants (Shinwari2004). There are about500 species of plants of therapeutically important which grow in the country. Many of these medicinal plants are used in indigenous system of medicine known as Hikmat. Geographically district Abbottabad lies between north latitude 33/ 45// and 35/ 2// and east longitude 72/ 36// and 74/ 9//. The area of Abbottabad district is 1967km2.Accoding to 1998 census the population of Abbottabad was 881,000 (Anonymous, 2006). Abbottabad comprises of four distinct seasons. The district lies within the active monsoon zone. Heavy rainfall occurs during the months of July and August. During winter there is heavy snowfall on higher elevations. Temperature drops below 0^{o} during the months of December, January and February. Acording to Forest Types of Pakistan (Champion *et al.*, 1965), the forests of district consist of Himalayan Moist Temperate Forests (67%). The main tribes of the area are Abbasis, Ddhunds, Gujjars, Jadoons, Karlals, Syeds, Tanolis, Rajput and Qureshis. Hindko, Pushto, Urdu, Punjabi and Gujjri are the languages spoken by the inhabitants. Pakistan is an agricultural country and more than 70 % of the population is dependent on agriculture and livestock keeping. The importance of livestock can be guessed from the fact that Pakistan is the fifth largest milk producing country of the world. In district Abbottabad most of the people live in the rural hilly areas and still depend on natural forest resources and traditional methodologies to cure different ailments of animals. The inhabitants of this area rear cows, goats, sheep and they use several plants for the treatment of various diseases in animals. Indigenous knowledge is as old as human civilization but the term ethnobotany was first applied by an American botanist John W. Harshburger (1896), to "the study of plants used by primitive and aboriginal people". Later on Voley H. Jones (1941) redefined ethnobotany using modern ecological terms from which ethnobotany was described as "The study of direct interaction between human and plant population". Through its culture each human population classifies plants, develop attitude and beliefs and learns the use of plants, while human behavior has direct impact on the plant communities with which they interact, the plants themselves also impose limitation on humans, these mixture interactions are the focus of ethnobotany"(Pei,1995). In Pakistan, the field of ethnobotany is virgin and has been introduced recently but in recent years a lot of work has been done in this field by many researchers (Shinwari and khan,1998) and Shah (2007).The recently born multidisciplinary science of ethnobotany which has, in a short time of few decades, experienced the mushroom growth the world over, aims at investigating and inventorying fast disappearing traditional knowledge systems pivoted on the direct and total relationship between human societies and plants. The great potential of wider usage of plants used by these societies, especially mankind's problems like hunger and health, has been fully realized by the results of studies

carried out so far. Peoples traditional knowledge (TK) pertaining to animal health care and production is known as ethno-veterinary medicine (EVM) McCorkle (1992).Ethnoveterinary medicines (EVM) are as old as the domestication of various livestock animal species. Despite the advancement of pharmaceutical industry and development of clinical agents, traditional indigenous medicine is still practiced in rural areas for human and livestock ailments. These ethno-veterinary medicines and practices are holistic livestock health care and management methodologies adopted in various parts of the world. Recognonizing the importance of such traditional medicines for livestock Food and Agriculture Organization (FAO) Regional Office for Asia and the Pacific has printed a series of publication on the development and promotion of traditional veterinary medicines during the past few years (FAO, 1984, 1991 and 1992). During recent years, there has been wide concern for collecting more ethnobotanical information, especially ethnomedicinal information on plants (Alemu, 1993). In India and other countries good attempts have been made by Pal (1980), McCorkle (1994), Pande and Kumar (1994), Catley and Mohammad (1996), Goud and Pullaiah (1996) and Kohler-Rollefson and Rathore (1997) to document the medicinal plants used to cure animal diseases, but in Pakistan very little attention has been given on documentation of plants used as veterinary medicines and there is a dire need to document this knowledge. At present the valuable traditional knowledge is disappearing rapidly. Moreover the escalating cost of allopathic medicines and the problem of environmental pollution, this is the time to develop cost-effective and environment friendly medicines for animal diseases. In the study area this is the first attempt to elucidate the ethnomedicinal uses of plants as veterinary medicines. Local health traditions that rely on medicinal plants tend to be oral and thus largely undocumented and are at risk of disappearing. Therefore the endeavour before us is to revive the traditional technologies of livestock health care management by updating documents and validate the practices for the use of farmers and veterinarians. Qureshi *et al.,* (2008) and Abbasi *et al.,* (2010) conducted surveys of useful medicinal plants in mountain region of Abbottabad Northern Pakistan. They documented plants used to cure human ailments but no information is available on ethnovetrinary plants. The district remains largely unexplored in this aspect of ethnobotany. This study was undertaken to document the use of local plants of district Abbottabad in the treatment of different animal diseases and it will be an addition to the ethnobotany and a base for future research.

MATERIALS AND METHODS

The present study is based on extensive surveys. Periodic field trips were undertaken during 2001-2005 to various rural and distant areas of district Abbottabad including Nathia Gali, Sherwan, Kuthiala, Richh Behn, Havelian and Thandiani on the utilization of local plants used for curing common animal/livestock ailments. Local name of the plants and their uses to cure various animal diseases were documented by conducting interviews. The interviews were carried out in local community, to investigate local people and knowledgeable persons (Hakims, Women and Herdsmen) who are the main user of medicinal plants. About 200 informants have been interviewed on random basis. The respective voucher specimens and crude samples of each preparation were collected from different areas for their correct identification through the available literature (Hooker, 1872-1897and Stewart *et al.(*1972) and Nasir and Ali, (1971-1995). The voucher specimens were deposited in the Herbarium, Department of Botany, Govt. Post Graduate College, Abbottabad, as reference specimens for future work. Repeated queries were made for the same plant and same uses from different people at different places, in order to verify the accuracy of information.

RESULTS

A total of 54 plants in 34 families are used as medicines in veterinary practice by local farmers, herders, shepherds in the hilly areas of district Abbottabad.

Information on plants used as the traditional veterinary medicines in the District Abbottabad.

1. *Aconitum violaceum* Jack. ex Stapf.
Family-Ranunculaceae
Ln: Patris; Loc: Thandiani; Pu: Rhizome
Ethno-Veterinary uses: The rhizome is grinded and mixed with wheat flour .It is given to cattle for the treatment of lungs diseases
VN: GMS-001

2. *Adhatoda vasica* Nees.
Family-Acanthaceae
Ln: Bhaikar; Loc: Sherwan; Pu: Leaves; Habit: Shrub
Ethno-Veterinary uses: A poultice of leaves is used for fresh wounds healing and inflammatory swellings
VN: GMS-002

3. *Aesculus indica* (Wall. Ex Camb.) Hk.f.
Family-Hippocastanaceae
Ln: Bankhor; L oc: Nathia Galli; Pu: Seeds; Habit: Tree
Ethno-Veterinary uses: Seeds are grinded to powder form, mixed with maize flour and tablets are formed. One tablet is given daily to goats and hoarses in stomach troubles and colic.

VN: GMS-003

4. *Ailanthus altissima* (Mill.) Swingle.
Family-Simarubaceae
Ln: Darawa; L oc: Sherwan; Pu: Leaves Habit: Tree
Ethno-Veterinary uses: Leaves are used as fodder to bring the cattle into heat but milking cattles are not given. Also used as purgative.
VN: GMS-004

5. *Allium sepa* Linn.
Family-Liliaceae
Ln: Piaz; L oc: Sherwan; Pu: Tubers and seeds; Habit: Herb

Ethno-Veterinary uses: Seeds are given to hens in case of Rani Khait disease. Crushed bulbs are given to cattle to remove external parasites and maggots from wounds and given to buffaloes in fever.
VN: GMS-005

6. *Amranthus viridis* Linn.
Family-Amaranthaceae
Ln: Chalvera; Loc: Sherwan; Pu: Whole plant; Habit: Herb
Ethno-Veterinary uses: Fresh plants are given to cattle as purgative in case of constipation.
VN: GMS-006

7. *Arisaema flavum* (Forsska.)Schott
Family-Araceae
Ln: Soorganda; Loc: Nathiagali; Pu: Seeds; Habit: Herb
Ethno-Veterinary uses: Seeds are given to poultry against "Rani Khait" disease.
VN: GMS-007

8. *Artemisia maritima* Linn.
Family-Asteraceae
Ln: Chaow; L oc: Sherwan; Pu: Whole plant; Habit: Herb
Ethno-Veterinary uses: The flowering heads and young branches are given for expelling round worms.
VN: GMS-008

9. *Artemisia vulgaris* Linn.
Family-Asteraceae
Ln: Chaow; L oc: Sherwan; Pu: Whole plant; Habit: Herb

Ethno-Veterinary uses: The whole plant is dried and crushed into powder form and given to horses in colic. Dried leaves are given as anthelmintic.
VN: GMS-009

10. *Berberis lycium* Royle.
Family-Berberidaceae
Ln: Sumbal; Loc: Sherwan/Thandiani; Pu: Root barks; Habit: Shrub

Ethno-Veterinary uses: Dried root bark is mixed with Ghee and heated. This is used as bandage on the broken organs. Powdered root bark is used as antiseptic and for healing of wounds. It is also given for internal injury.
VN: GMS-0010

11. *Bergenia ciliata* (Haw.) Sternb.
Family-Saxifragaceae
Ln: Butpewa; Loc: Nathia Galli; Pu: Rhizome; Habit: Herb

Ethno-Veterinary uses: Powdered rhizome is mixed with gur (Raw sugar) and wheat flour. Tablets are made and given in case of internal injury .Powder of rhizome is used as antiseptic on wounds.
VN: GMS-0011

12. *Brassica compestris* Linn.
Family-Crucifeae
Ln: Sarsoon; Loc: Sherwan; Pu: Seeds/Oil; Habit: Herb

Ethno-Veterinary uses: Seeds oil is mixed with curd and is given to ploughing bulls. It is considered that this gives strength to their legs. Seed cakes locally known as "khal" are obtained after extracting oil and used as tonic and fodder for milking cattle.
VN: GMS-0012

13. *Buddleja asiatica* Lour.
Family- Buddlejaceae
Ln: Chitti Bui; Loc: Sherwan**;** Pu: Leaves; Habit: Shrub

Ethno-Veterinary uses: Dried leaves are applied on the body of animals to prevent mites.
VN: GMS-0013

14. *Butea monosperma* (Lam.) Taub.
Family- Leguminosae
Ln: Chamkat; Loc: Sherwan**;** Pu: Seeds; Habit: Shrub

Ethno-Veterinary uses: Seeds are used to expel worms from stomach. Seeds powder is used to expel larvae from ulcers.
VN: GMS-0014

15. *Cannabis sativa* Linn.
Family-Cannabinaceae
Ln: Bhang; Loc: Sherwan; Pu: Leaves Habit: Herb
Ethno-Veterinary uses: Fresh leaves are given to increase appetite.
VN: GMS-0015

16. *Catharanthus roseus* Linn.
Family- Apocynaceae
Ln: Sadabahar**;** Loc: Abbottabad; Pu: Whole plant; Habit: Shrub
Ethno-Veterinary uses: Whole plant is poisonous, used to remove maggots from wounds in animals.
VN: GMS-0016

17. *Cedrella serrata* Royle
Family - Meliaceae
Ln: Tun; Loc: Sherwan; Pu: Leaves Habit: Tree
Ethno-Veterinary uses: Leaves are given to cattle as purgative.
VN: GMS-0017

18. *Cissampelos pariera* Linn.
Family - Menispermaceae
Ln: Ghora sum; Loc: Sherwan; Pu: Leaves; Habit: Climber

Ethno-Veterinary uses: Fresh leaves are crushed and water is mixed and placed open in dew for a night.

The colour is changed from green to red. This is given to sheep as tonic and in many other diseases.
VN: GMS-0018

19. *Colebrookea oppositifolia* Smith.
Family - Lamiaceae
Ln: Palpudar; Loc: Kuthiala; Pu: Leaves; Habit: Shrub
Ethno-Veterinary uses: The leaves are applied to wounds to remove maggots.
VN: GMS-0019

20. *Commelina benghalensis* Linn
Family - Commelinaceae
Ln: Angalra; Loc: Kuthiala; Pu: Leaves; Habit: Herb
Ethno-Veterinary uses: In soreness and redness of eyes juice of the plant is applied in the eyes.
VN: GMS-0055

***Conyza Canadensis* (L.)Cronquist**
Family-Asteraceae
Loc: Abbottabad; Pu: Whole plant; Habit: Herb
Ethno-Veterinary uses: Whole plant is used to cure urinary problems in sheep and goats.
VN: GMS-0020

21. *Cronopus didymus* Linn.
Family- Crucifeae
Ln: Ghandi booti; Loc: Richh Behn; Pu: Whole plant; Habit: Herb
Ethno-Veterinary uses: Paste of the plant is used to remove maggots from wounds in animals.
VN: GMS-0021

22. *Crotalaria juncea* Linn.
Family- Leguminosae
Ln: Butpewa; Loc: Nathia Galli; Pu: Seeds; Habit: Herb
Ethno-Veterinary uses: Seeds are given to cattle to increase milk.
VN: GMS-0022

23. *Curcuma longa* Linn.
Family-Zingiberaceae
Ln: Haldar; Loc: Sherwan; Pu: Rhizome; Habit: Herb
Ethno-Veterinary uses: The powder of rhizome is mixed in" Ghee" warmed and applied as a bandage on the broken organs and healing of wounds.
VN: GMS-0023

24. *Daphne mucronata* Schreb.
Family-Thymelaeaceae
Ln: Kuttilal; Loc: Sherwan; Pu: Bark; Habit: Shrub
Ethno-Veterinary uses: Bark is peeled off from branches and tied around the neck of dogs to repell flies.
VN: GMS-0025

25. *Dodonaea viscosa* (Linn.) Jacq.
Family-Sapindaceae.
Ln: Sanatha; Loc: Sherwan; Pu: Leaves; Habit: Shrub
Ethno-Veterinary uses: Leaves are used in the treatment of wounds.
VN: GMS-0024

26. *Ficus palmata* Linn.
Family-Moraceae
Ln: Phagwara; Loc: Sherwan; Pu: Leaves Habit: Tree
Ethno-Veterinary uses: Leaves are given to cattle to ease delivery and to remove placenta.
VN: GMS-0026

27. *Grewia optiva* Drum. ex Burret.
Family-Tiliaceae.
Ln: Dhaman; Loc: Sherwan; Pu: Leaves Habit: Tree
Ethno-Veterinary uses: Leaves are used as fodder. Bark is peeled off from branches and given to cattle as galactagogue.
VN: GMS-0027

28. *Lepedium sativum* Linn.
Family- Crucifeae
Ln: Haloon; Loc: Sherwan; Pu: Seeds; Habit: Herb
Ethno-Veterinary uses: The seeds are given orally as a decoction in fever and flatulence.
VN: GMS-0028

29. *Melia azedarach* Linn.
Family-Meliaceae
Ln: Derek; Loc: Sherwan; Pu: Leaves and seeds; Habit: Tree
Ethno-Veterinary uses: Leaves are used as fodder. Ripe seeds are grinded and mixed with animal cake and given to cattle as galactagogue.
VN: GMS-0029

30. *Mentha arvensis* Linn.
Family-Lamiaceae
Ln: Pudina; Loc: Sherwan; Pu: Leaves; Habit: Herb
Ethno-Veterinary uses: Leaves are given internally to remove external parasites e.g. lices.
VN: GMS-0030

31. *Mentha longifolia* (Linn.) L.
Family-Lamiaceae
Ln: Chitta Pudina; Loc: Sherwan; Pu: Roots; Habit: Herb
Ethno-Veterinary uses: The roots are boiled in water and decoction is given to cattle for fever and for increasing their milk.
VN: GMS-0031

32. *Oryza Sativa* Linn.
Family- Poaceae
Ln: Chawal/Tahain; Loc: Sherwan; Pu: Seeds; Habit: Herb
Ethno-Veterinary uses: Seeds along with husk are grinded and given to ease delivery and to release placenta and also in prolapse.
VN: GMS-0032

33. *Otostegia limbata* (Benth) Baiss
Family-Lamiaceae
Ln: Bui; Loc: Sherwan; Pu: Leaves Habit: Shrub
Ethno-Veterinary uses: Leaves and flowers are used for curing of wounds.
VN: GMS-0033

34. *Paeonia emodi* Wall ex Royle
Family-Paeoniaceae
Ln: Mamekh; Loc: Thandiani; Pu: Tubers; Habit: Herb
Ethno-Veterinary uses: Dried tubers grinded into fine powder, mixed with flour and used as tonic for cattle.

VN: GMS-0034

35. *Peganum harmala* Linn

Family-Zygophyllaceae

Ln: Harmal; Loc: Havelian; Pu: Whole plant; Habit: Herb

Ethno-Veterinary uses: Extract of the plant is applied on the body of animal to kill lices.

VN: GMS-0035

36. *Polygonatum verticilatum* All

Family-Liliaceae

Loc: Nathiagali; Pu: Rhizome; Habit: Herb

Ethno-Veterinary uses: the rhizome is crushed and given to cattle for increasing milk.

VN: GMS-0054

37. *Plantago major* Linn

Family-Plantaginaceae

Ln: Chanchipatra; Loc: Nathiagali; Pu: Whole plant; Habit: Herb

Ethno-Veterinary uses:For treating mouth and foot disease locally called" monhkhur" in cattle crushed plant material is applied on affected hoves till recovery.

VN: GMS-0036

38. *Quercus incana* Roxb.

Family-Fagaceae

Ln: Rhin; Loc: Thandiani; Pu: Leaves and seeds; Habit: Tree

Ethno-Veterinary uses: Leaves are considered highly nutritive. Seeds are crushed into powder mixed with animal cake and given to cattle to increase milk production.

VN: GMS-0037

39. *Ranunculus muricatus* Linn.

Family-Ranunculaceae

Ln: Chachumba; Loc: Sherwan; Pu: Whole plant; Habit: Herb

Ethno-Veterinary uses: A decoction of plant is used as a purgative for goats.

VN: GMS-0038

40. *Rheum australe* D.Don

Family-Polygonaceae

Ln: Chutial; Loc: Thandiani; Pu: Rhizome; Habit: Shrub

Ethno-Veterinary uses: The rhizome is crushed to powder form and is used for healing of wounds and given orally for curing constipation.

VN: GMS-0039

41. *Rumex hastatus* D. Don

Family-Polygonaceae

Ln: Khitambal; Loc: Sherwan; Pu: Whole plant; Habit: Shrub

Ethno-Veterinary uses: Leaves are given internally to remove external parasites. Whole plant is given to cure internal wounds in case of injury.

VN: GMS-0040

42. *Rumex nepalensis* Linn.

Family: Polygonaceae

Ln: Hulla, Loc: Thandiani; Pu: Root; Habit: Herb

Ethno-Veterinary uses: Roots are crushed and given as tonic.

VN: GMS-0041

43. *Salvia moorcoftiana* Wallich ex Benth.

Family-Lamiaceae

Ln: Kali Jarri; Loc: Thandiani; Pu: Rhizome; Habit: Herb

Ethno-Veterinary uses: Rhizomes are crushed and mixed with the crushed leaves of *Vitex negundo* and *Zanthoxylum armatum* and is given to buffalos in colic and other diseases. Rhizomes are washed and crushed; gur and wheat flour is mixed and given to buffaloes to increase milk. It is also considered a good remedy against fever"*takun*" in buffalos.

VN: GMS-0042

44. *Saussurea costus (*Falc.)Lipsch

Family-Asteraceae

Ln: Kuth, Pu: Rhizome; Habit: Shrub

Ethno-Veterinary uses: The dried rhizome is grinded in to powder form and mixed with maize flour. Tablets of larger size are formed and given to goats in a disease locally called as "*Bagri*" and after delivery weakness.

VN: GMS-0043

45. *Saussurea heteromalla* (D.Don) Hand-Mazz

Family-Asteraceae

Ln: Gajarmula, Pu: Rhizome; Habit: Herb

Ethno-Veterinary uses Rhizomes crushed and given ti increase milk flow.

VN: GMS-0044

46. *Skimmia laureola* (DC.) Sieb.

Family-Rutaceae.

Ln: Nair; Loc: Thandiani; Pu: Whole plant; Habit: Shrub

Ethno-Veterinary uses: Whole plant is given to milking cattle as nutritive fodder.

VN: GMS-0045

47. *Thuja orientalis* Linn

Family-Cupressaceae

Ln: Morpunkh; Loc: Abbottabad; Pu: Fruit; Habit: Shrub

Ethno-Veterinary uses: The ripe fruits are roasted in mustard oil and mixed with powdered black salt.The mixture is given in the vetrinary saibrea of cow and sheep.

VN: GMS-0046

48. *Thymus linearis* Linn

Family-Lamiaceae

Ln: Chikan; Loc: Abbottabad; Pu: Whole plant; Habit: Herb

Ethno-Veterinary uses: The dried plant is crushed to poder and mixed with flour.It is given to cows, goats and sheep for increasing milk.

VN: GMS-0053

49. *Verbascum thapsus* Linn.

Family-Scrophulariaceae.

Ln: Giddar Tambaku; Loc: Kuthiala; Pu: Leaves; Habit: Herb

Ethno-Veterinary uses: Leaves are given to cattle to cure diarrhoea.

VN: GMS-0047

50. *Vitex negundo* Linn.

Family-Verbenaceae

Ln: Marvani; Loc: Kuthiala; Pu: Leaves; Habit: Shrub

Ethno-Veterinary uses: Juice of the leaves used for removing foetid discharge and worms from ulcers .Leaves are crushed and salt is mixed and given to buffalos in fever and stomach problems.

VN: GMS-0048

51. *Viburnum cotinifolium* D.Don

Family-Caprifoliaceae

Ln: Guch; Loc: Bagnotar; Pu: Fruit; Habit: Shrub

Ethno-Veterinary uses: Fruits are given to cattle to release placenta.

VN: GMS-0049

52. *Xanthium strumarium* Linn.

Family-Asteraceae

Ln: Kandiari; Loc: Sherwan; Pu: Leaves; Habit: Herb

Ethno-Veterinary uses: Leaves juice is used externally for maggots in wounds and healing.

VN: GMS-0050

53. ***Zanthoxylum armatum* D.C**.

Family-Rutaceae.

Ln: Timbar; Loc: Sherwan; Pu: Seeds; Habit: Shrub

Ethno-Veterinary uses: Seeds are given to give warmth to body. Seeds paste is applied on the affected parts in foot and mouth disease locally called "*Monh Khur*".Seeds are crushed and mixed wit maize flour and given to cattle in fever.

VN: GMS-0051

54. *Zea mays* Linn.

Family- Poaceae

Ln: Makai; Loc: Sherwan; Pu: Seeds; Habit: Herb

Ethno-Veterinary uses: Maize flour in the form of paste is given to goats to cure blood in urine.

VN: GMS-0052

Key: Ln=Local name, Loc =Locality, Pu=Part used, VU=Voucher Number

DISCUSSION

Livestock keeping is one of the vital economic sources forming integral part of the traditional tribal and rural community. The farmers and nomadic people of the area are not only depending on wild plants to get fodder for their animals but also use different medicinal plants to treat various animal diseases. A total of 54 plants in 34 families are used as medicines in veterinary practice in the hilly areas of district Abbottabad, Northern Pakistan. Highest number of plants used medicinally belongs to family Asteraceae 6spp and Lamiaceae 6 Spp each followed by, Cruciferae 3 Spp, Polygonaceae 3 Spp, Poaceae 2 Spp. Ranunculaceae 2 Spp, Leguminosae 2 Spp, Meliaceae 2 Spp, Rutaceae 2 Spp, and Poaceae 2 Spp. Remaining 24 families have one species each. Mostly herbs are used medicinally followed by shrubs and trees. Medicinal recipies include fresh or dried plant material. Plants are used in combination or a single species. Study reveals that in most of the cases leaves are used followed by seeds and whole plant. It was observed that in every village of study area, there are individuals who are regarded as knowledgeable and skilled in the treatment of animal diseases. Usually they keep animals themselves and most of them belong to pastoral communities. The potential of indigenous ethno-veterinary knowledge of high altitude populations in general and pastoralism in particular is unknown. Yet society faces the loss of traditional strategies and knowledge of medicinal plant materials by herders, shepherds, and others associated with animals as these ways of life disappear due to population shifts and economic insecurity of remote societies (Farooquee, 2000). It was observed that fresh and dry plant parts are given as fodder or mixed with cattle feed to treat some diseases. It was also observed that special utensils are used for oral doses. There are 7-10 types of animal diseases common in different localities of research area. The most frequent diseases are diarrhoea, after birth retention, prolapse of uterus, constipation, fever, foot and mouth rot, colic, indigestion, maggot in wounds, blood in urine and fever etc.The traditional practioner prepare medicines on the spot from local plants that grow in the environs of the village and other standard ingredients that are locally available such as ghee, oil, curd, butter and milk. Some of the practitioners are specialized in certain type of affications (such as fractures or birth problems), types of treatment (for example, firing or message, or certain species, usually buffaloes and cows. It is observed with a sad note that this traditional knowledge (TK) which formed the basis for origin of not only alternative medicine but also paved way to evolution of a gamut of new and novel modern medicines, is facing slow and natural death as these communities are eventually oriented more towards modern medicine as they believe it gives a quick remedy. Presently very few elders in the community practice herbal cure, while the young and current generation knows little or nothing about the traditional herbal medicines.

Ethnoveterinary plants and remedies documented here need phytochemical and pharmacological screening for active principles and clinical trials for therapeutic actions. The tribal and rural people use the medicinal plants around them and ethnomedicines are a part of their culture. The animal population is expanded in the villages, veterinary facilities from government sectors become insufficient, younger generation tend to discard their traditional life style. Hence documentation of traditional practices of herbal medicine for cattle healed will be coherence in future (Basu, 2002). The use of herbal medicines in the research area could most likely be promoted and strengthened by initiating a coordinated programme of

research and development for evaluating and testing the efficacy of the plants in use by standardizing methods for cultivation and preservation of plants. The investigation of traditional therapies should be intensified with the objective of increased efficiency by taking advantage of technical progress. Risk could be reduced through the analysis of so far unknown or insufficiently known secondary and long-term effects.Plant species *Aconitum violaceum*, *Skimmia laureola*, *Paeonia emodi*, *Bergenia ciliata* are found endangered due to over exploitation. There is an urgent need that necessary steps should be taken to conserve these threatened species. Tests should be undertaken to increase the content of desired components in plants through breeding, selection and intensive cultivation or through the improvement of production, processing and marketing.

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