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Ethnoveterinary Plants In Traditional Practices By Various Tribes In The Western Himalaya Of Jammu & Kashmir India

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Abstract: Jammu and Kashmir is one of the mountainous states occupying most prominent position in North-West Indian Himalayas, bestowed with rich traditional knowledge base in plant resources. The region is inhabited by large number of tribes. Perusal of past experience developed their own system of medical practices for treatment of human ailments and diseases of domesticated animals. Ethno-veterinary exploration carried out during the past many years have brought to light over 66 plant species for treatment of live stock for better milk production, wool, meat and reproduction of animals and genetic make-up with special thrust on immunity against fatal diseases. The present paper is based on ethno-veterinary field practice in Animal Husbandry Department, Jammu and Kashmir, mostly in Hilly terrain of Rajouri-Poonch of Jammu province and information accrued from Gujjar, Bakerwals, Gaddhi tribes and other rural people who had been engaged in Animals and Poultry rearing. The identification of plant species, local name, and specific preparations of dosages from plants part and mode of Administration were discussed with local healers of the area, veterinarian who visited high land and alpine pastures frequently to attend exigencies such as outbreak of diseases etc. and the authorities who are well-versed with the flora of Jammu and Kashmir.

Keywords: Ethno-veterinary, Live Stock, Tribes, Mountains, Distribution

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1. INTRODUCTION

Ethnoveterinary plants have been used in health care systems since the time immemorial. There is an inseparable relationship between man and animal. In India the history of medicine has its great roots in the vedic period (1500-1000 BC) Archaeology Survey Mohenjodaro and Harappa[1]. The ethno-veterinary for animal health care is as old as domestication of various live stock species. The method of treatment of different ailments was started and documented in the form of hymns, sholakas, pharases belief and lores etc. which finally developed into traditional system of medicines[2]. The proper use of ethno-veterinary medicines for domestication of livestock, play a great role in different socio-cultural and development activities of human beings. Archeological evidences state that the veterinary practices with applications off medical herbs first originated in Egypt, China and India. In India, millions of households have been using indigenous health knowledge and local health traditions for ensuring human, veterinary and plant wealth. It is reported that in India about 4635 ethnic communities including one million folk healers, use around 8000 species of medical plants[3]. In Jammu and Kashmir, besides other communities rural people, tribal, nomads are still engaged in rearing animals, move to different parts of the state for facilitation of animals especially sheep, goats, horses and others and to high lands pastures during summer months. The healers and cattle rearers are skilled and specialized in the treatment of simple and complex conditions such as Bloat, Maggots wounds, retention of Placenta mastitis, Poisoning, Snake bite, eye disease, bone fracture and many more first aid tips for ailments and tonic for their health and milk production. Farmers in hills generally face paucity of resources and women largely manage agriculture operations that play a crucial role in economy of hilly inhabitants. More than 70% population of area depends entirely on animals for their basic needs requirement and economics. The management of health care for traditional knowledge acquired through generation to generation has been found to be rich source for modern scientist. However, this knowledge is distributed unevenly throughout the Himalayan region. Few people residing in villages even, hailing from remote area has attained traditional knowledge to treat human being and animals. Traditionally indigenous phototherapy is practiced in most of the cases for livestock using strictly guarded treatment and passes it on from generation to generation. While gathering the replies of questions from various walk of life especially to tribal and nomads it was observed that they have to cover a distance of over 250 km during migration of animals along with other family members. Even, all other necessary articles and eatables are carried enrooted and long stay in pastures, Dhokes and Murgaan allotted and earmarked to them of particular areas. The people from Poonch and Rajouri areas generally migrate during summer for three month towards Dhokes namely Gali Girjan, Hilkaka, Panjthari, Sari Mastaan, Tatakuti Bela-Baila, Nandansar, Toosh Madaan and other areas of Sopian and other Pirpanjaal areas near seven lakes commonly known as Sars on pir panjaal and people from Rajouri, Nowshera move towards Buddhal and hilly range of Banihal and some sheep and goats rearers and shepherds go upto Pahalgam and other parts of valley in Kashmir, whereas other tribes, Gaddhi and Sippi Chopaans from district Udhampur, Reasi, Doda and Kathua etc. prefer to move to Dhaars of Doda and upto Paddar, Sinthontop and Kargil areas of Pir-panjal having height more than 5000 m above the sea level, but it has also been learnt that a few normally stay in Shivaliks. Even a few migratory breeders from Punjab and Himachal state attempt to move towards J&K areas adjoining to their states. Similarly people from valley districts also adopt this pattern of migration to high-land. The migratory practice is customary, mainly for search of fodder and forages for their livestock and also to save the livestock from hot weather in plains of plains of Jammu and its adjoining areas. This practice is tiresome and migratory people mostly remain cut off from normal routine life. Although, these people have strong immunity but because of close proximity to animals, these are still prone to zoonotic diseases. Now some of the new youths, even of tribal families staying away, reluctant to go for this type animal farming and started seeking employment opportunities in other fields for their livelihood. As such, there is an urgent need to document these ethno-veterinary practices properly which is gradually vanishing. The main causes of vanishing of these systems may be as indicated below.

a) Development project based on new technology
b) TV's culture invasion on culture from space through television, internet etc.
c) Urbanization
d) Destruction of cultural heritage and tribal habitat.
e) Loss of Biodiversity
f) Improper allegation that tradition knowledge system (TKS) is no science.
g) Non evaluation of validation of TKS scientifically.
h) Other threats presently prevailing in hilly areas.

It is worth to mention here that ethno-veterinary system is location and community specific and don't like to document their knowledge of local healers that is on verge of extinction. Modern veterinary health care system is facing many constraints in terms of inaccessibility, affordability and acceptability. Indiscriminate use of medicines like antibiotics, chemicals and other drugs have side effects, this contaminates milk which directly affects the human health as well. Use of certain antibiotics and other chemical products is banned for animal health care in many countries and world is looking for safer alternatives. Now, it is accepted that the herbal drugs are more efficacious for certain diseases like parasitic infections, dysentery, diarrhoea than modern medicines. The world health organization (WHO) recognized the value and imperative need for adopting traditional herbs practice in global health care. The international year[4] Indigenous people provided on unprecedented opportunity to international community to examine existing injustices in various field to demonstrate its commitments to helping indigenous people realize their rights Article 29 of United Nation's Draft Declaration on the rights of indigenous people states that "indigenous people are entitled to recognition of full ownership and protection of their culture and intellectual property[4]. They have rights to special measures to control, develop and protect their science technologies and cultural manifestation including human and other genetics resources, seeds, medicines, knowledge of properties of flora and fauna, oral tradition, literatures, designs and visual performing arts". Due to lack of thorough survey the exact number of local species could not be studied but the various scientific information/publication of the areas state that there are about 4000 species in Jammu and Kashmir State out of which more than 500 species have been known for medicinal properties. Only 200 species are also reported to be used by five numbers of ethnic groups of the state in their human and

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veterinary health care system. Over 150 species of plants occurring in J&K State are known to have regular use in Ayurveda and Unani Medical formulations[5]. Hence there is an urgent need to document these Ethno-veterinary practices properly.

1.1 Study area

The State of Jammu and Kashmir is the northernmost State of India Fig. 1. The State covers 39179 sq.miles (101,473.1 sq.km) and it lies between latitude 32^0 17' and 37^0 05 ' North and longitude 72° 31' and 80° 20' East. The total population as per census[6] is 1.25 crores. As per census[7] the total population of livestock is 92 millions and poultry is 8293 millions. It borders the States of Himachal Pradesh and Punjab in Republic of India to the South and with Republic of China to the North and East and Gilgit Baltistan in Pakistan and (Pok) to the West and Northwest respectively. The Jammu and Kashmir consists of three divisions: Jammu Region, the Kashmir Valley and Ladakh and further divided into 27 districts. Srinagar is the summer capital and Jammu is the winter capital. It is the only State with Muslim majority population. According to the census[6], Islam is practiced by about 63.3% of the State population while 28.4% follow Hinduism; small minorities follow Sikhism (1.9%), Budhists (0.9%) and Christianity (0.3%). The State is very rich in flora and fauna. In Jammu, the flora ranges from northbush type of arid plain to temperate and alpine flora of high altitude. The climate of Kashmir is moderate, Ladakh desert with extreme temperature and Jammu region with abundant sunshine and hot similar to South plain area of Punjab State. Medicinal plants group comprises approximately 8000 species for around 80% of all higher plant species of India.. More than 50% of the plants used in British pharmacopeia are reported to grow in Jammu and Kashmir. Literature also indicates that 572 plant species belonging to 100 different families have medical value[8-11].

2. MATERIALS AND METHODS

During the last, more than 10 years of Ethno veterinary exploration, over 66 plant species were collected and identified for treatment of livestock, production of milk, wool and meat from various districts , especially from the tribal dominant areas. More than 150 informants of various age groups were interviewed in their local language regarding uses of plants, their vernacular names, distribution and growing period. The information so collected from informants was observed and further verified by cross checking from other knowledgeable persons of study area, migratory nomads, Hakims, Veterinarians and medical officers who also sometimes move to highland pastures. Identification of plants species got authenticated by experts. The plants resource for traditional utilization for the treatment of human and livestock also got confirmed from experts and other literature and publications on ethno-veterinary.[12-14,15-].

Fig 1. Map of India, showing Jammu & Kashmir

Brief of some Ethno-veterinary plants used in Jammu and Kashmir State and its adjoining areas as under:

***Abelmoschus esculentus* (L.) Moench. Syn *Hibiscus eschulentus* (L.)**
(Bhindi) Malvaceae

Parts used : Roots
Veterinary use : About 25 gm root pounded, mixed with 50 ml of water and administered orally to promote of urine

***Abelmoschus moschatus* (L.) Medik**
(Latakasturi) Malvaceae

Parts used : Seeds
Veterinary use : 10gm seeds are pounded, mixed with molasses and given orally twice daily for at least three days for retention of urine.

***Abrus precatorius* L.**
(Ratti) Fabaceae

Climbing on shrubs and trees up to the range of 1000 m. above the m.s.l.

Parts used : Roots, seeds
Veterinary use : 10 ml of root extract is given to adult cattle BD for cough. Root is also used for diuretic. 10gm of seeds pounded with onion and administered orally for respiratory trouble.

***Abres spectabilis* (D. Don)**
(Raisal barmiradha) Pinaceae

Veterinary uses : Bud used for cough

***Acacia catechu* (L.f.) wild**
(Khair) Mimosaceae

Parts used : Leaf
Veterinary use : 20 ml decoctioned leaves mixed with little salt to adult cattle in Bloat with traces of Dysentery.

***Achyranthes aspera* L.**
(Chirchita) Euphorbiaceae

Parts used : Whole plant
Veterinary use : 200 gm of plant with 200 gm of *Tinospora cordifolia* and 20 gm of jaggery orally for quick removal of placenta.

***Acorus calamus* L.**
(Bach) Araceae

Parts used : Rhizome
Veterinary use : Rhizomes are used for treatment of fever, diarrhoea, dysentery, dyspepsia and flatulence.

***Ageratum conyzoides* L.**
(Visadodi) Asteraceae

Parts used : Leaves
Ethno-veterinary use : Leaves have hemostat properties when applied locally after crushing.

***Acacia nilotica* L.**
(Baboor) Mimosaceae

Parts used : Bark
Ethno-veterinary use : Bark for hoof and lock jaw.

***Achyranthas aspera* L.**
Amaranthaceae

Veterinary use : Hydrophobia, Bone fracture, fever, poisonous bite and tooth disorders. Whole plant 200gm, 200gm stem of *Tinospora cordifolia* are pounded mixed with 20gm jaggery and administered orally for quick removal of placenta.

***Aconitum balfouri* A. atrox**
(Mithu) Ranunculaceae

Parts used : Roots
Veterinary use : 150 gm of roots are used for swelling, internal parasites and wound healing for three days.

***Adiantum venustum* (G. Don)**
(Hansraj) Adiantaceae

Parts used : Seeds
Veterinary use : Seeds used for chest problem and hair fall.

***Ageratum conyzoides* L.**
(Podina jad) Asteraceae

Parts used : Leaves and Root
Veterinary use : 150 gm leaves used after crushing as expectorant. 50gms of leaves for wounds bleeding as a hemostat.

***Aeschynomene indica* L.**
(Pilliya) Fabaceae

Parts used : Whole Plant : Eczema

***Aesculus indica* (Colebx ex Cambess) Hook**
(Pangar) Hippocastanacea

Parts used : Root, Leaves and Fruit
Ethnoveterinary use : Abdominal pain indigestion and internal parasites, also used as galactagogue in animals.

***Allium sativum* L.**
(Lahsn) Alliaceae

Ethnoveterinary use : 50gms of cloves *Allium sativum*, 50gm seeds of *Piper migrun*, 50gm of seeds of *Trachyspermum ammi,* are grounded together and powder so prepared is given with water to animals to retain sterility, cloves for FMD, Skin infection, itching purities, skin disorder and stomach ache. Snake bite, RKD, Fowl Coryza in hen, respiratory distress, food poisoning and sun stroke.

***Allium cepa* Linn.**
(Piaz) Alliaceae

Ethnoveterinary use : *Allium Cepa 10-15 seeds of piper nigrum &one spoonful of lachy- spermum amni are* Boiled in one litre of water. After cool given to animals suffering from diarrhoea, bulb, FMD, arthritis, mouth blister, internal parasites, dysentery, loss of water and appetite Diarrhea, Dysentery and hoof disease and internal parasites. 10gm of Bulb, 50 gm of *Alstonias scholaris* and 10 gm of dried ginger pounded given daily as health tonic. .

***Allium wallichii* Kunth**
(Doona, Laddu) Alliaceae

Ethnoveterinary use : 50gm crushed leaves expel leeches from nose. Buds 10gm of *A. wallichii* kunth with 200 gm garlic and 200gm of *cacia fistula* mix orally for haemoragic septicemia, Carminatives and also used in cough and respiratory problems.

***Aloebardadensis* Mill.**
(Gwar Patha) Lilliaceae
Parts used : Leaf
Ethnoveterinary use : Remove infertility, induced fertility, stomach disorder, bone fracture, leaf pulp for burns. 200gm of India Aloe + 10gm of castor seeds and 25gm of cumin seeds mixed and pounded one time daily as advised.

***Areca catechu* L.**
(Supari) Arecaceae

Ethnoveterinary use : For internal parasites and haemoragic septicemia. 150gm crushed roots nuts two times daily for 3 days.

***Asparagus adscendens* Buch Ham. ex Roxb.**
(Jiranda) Liliaceae

Ethnoveterinary use : Crushed roots fed to animals to increase lactation, Tubers, Haemturia, skin disease and knee joints pain.

***Asplenium dalhousiae* Hook.**
(Vishkanya) Aspleniaceae

Ethnoveterinary use : Frond juice is applied on pimples and scabies and mastitis.

***Azardirachata indica* A. Juss.**
(Nim) Meliaceae

Ethnoveterinary use : Evergreen leaves paste prepared and applied on irritated skin. Also used for treatment of wound of broken horns, HS, snake bite and tympany. Roots acts as anthelmintic. 50gm of *A. indica* + 50gm of *A. sessilis* + 20 gm of Turmeric powder + 50 gm butter mixed and applied for 3 days.

***Boenninghausenia albifora* Hook.**
(Pishumar) Rutaceae

Ethno-veterinary use : Leaf expel leech, Beneficial for external parasites and flea treatment.

***Boerhavia diffusa* L.**
(Sant) Nyctaginaceae

Parts used : Whole plant.
Ethno-veterinary use : 50gm of whole plant with *Asparagus racemosus* leaves is pounded and fed twice daily for seven days.

***Brassica campestris* L.**
(Sarsoon) Brassicaceae

Ethno-veterinary use : Seed, mustard oil is applied skin, nose, sore and crushed seeds to animals to cure neck sore. Oil, is used for fever, indigestion, external parasites. It is also given for dog bite, food poisoning, impaction, scabies and tympany.

***Brassica juncea* L.**
(Rai) Brassiceae

Parts used : Seeds
Ethno-veterinary use : 50 gm seeds with Turmeric powder applied externally for skin disease, 250 gm decoction of seeds given in dyspepsia and flatulence.

***Calotropis procera* Ait.**
(Akk) Asclepiadaceae

Ethno-veterinary use : Latex applied externally on pimples and sores neck injury. Leaf: Arthritis and sometimes indigestion also.

***Cannabis sativa* (L.)**
(Bhang) Cannabinaceae

Parts used : Leaves and flowers.
Ethno-veterinary use : 5 gm of *C. sativa* leaves plus boiled rice, made boils of 10 gm given orally for three days for diarrhoea and dysentery.

***Capsicum frutenscens* L.**
(Chhola mirch) Solanaceae

Ethno-veterinary use : 100gm of fruit + 100gm of *Corriandrum sativum* plus 50gm of *Piper nigrum* + 20 gm of cuminum are grounded and mixed 50 ml of water given BD for 3 days.

***Carica papaya* L.**
(Pipeeta) Caricaceae

Ethno-veterinary use : Anti-diarrhoea, carminative, & diuretic. 100 ml of latex collected from dried fruit with boiled rice and orally one dosage for three day as anthelmintic.

***Chemopodium album* L.**
(Bethusaag) Chemopodiaceae

Parts used : Whole Plant
Ethno veterinary use : Decoction of leaves is given orally in diarrhoea and liver disorder. It is also used as carminative, anthelmintic and diuretic.

***Citrus aurantifolia* (Christin & Panz.) Swingle**
(Katha) Rutaceae

Ethno veterinary use : Use of 5 No. fruit with extract of 200 gm of tender leaves of *Ficus recemosa* given BD orally for three days for diarrhoea and flatulence.

***Citrus lemon* (L.) Burm. f.**
(Jamiri lemon, Nimbo) Rutaceae

Parts used : Fruit, leaves and rind
Ethno veterinary use : Fruit carminative and digestive leaves are useful in flatulence, colic constipation and indigestion. Rinds are given as anthelmintic.

***Croton tiglium* L.**
(Jamal gota) Euphorbiaceae

Parts used : Seeds
Ethno veterinary use : 100gm seeds are pounded and mixed with boiled rice and made small bolus. Two boluses are prescribed BD for 3 days for dyspepsia and fever.

***Cucumis melo* L.**
(Kharbooja) Cucurbitaceae

Ethno-veterinary use : 100 gm fruit pulp is mixed with jaggery + 100 ml butter milk TDS daily for 7 days for disorder of urinary system.

***Curculigo orchioides* Gaertn**
(Kali musli) Hypoxidaceae

Parts used : Roots
Ethno-veterinary use : whole plant parts of *Hamidesmus indicus*, stem of *Cissuquadrangularis*, stem of *Tinospora cordifolia* (100 gm each) pounded and given BD for 7 days for indigestion, liver disorder and diarrhoea. Root decoction is given as carminatives diuretic and febrifuge.

***Crocus sativa* L.**
(Zaffaran safran) Iridaceae

Parts used : Flower
Ethno veterinary use : Mixed in honey and mixture is given to cattle in fever.

***Curcuma longa* L.**
(Haldi) Zingiberaceae

Ethno veterinary use : 100 gm of turmeric, 5 gm of cumin, 5 gm of *Leucas aspera* leaves are pounded and administered, orally one time daily for 7 days for anorexia.

***Euphorbia birta* L.**
(Badi dudhi, snake weed) Euphorbiaceae

Parts used : Leaves, whole plant
Ethno veterinary use : Leaves for foot rot and whole plant for dysentery.

***Datura metel* L.**
(Dhatura) Solanaceae

Parts used : Leaves, seeds
Ethno-veterinary use : 50gm of rapid seeds/fruit is crushed & mixed with boiled rice made small boluses and given one time for 7 days for diarrhoea and dysentery.

***Eucalptus globulus* Labill.**
(Eucalptus) Myrtaceae

Parts used : Oil, leaves
Ethno veterinary use : The decoction of leave is used to wash the wound sores and ulcers.

Ficus religiosa L.
(Pipal) Moraceae

Parts used : Leaves, fruit and latex.
Ethno veterinary use : 200 gm bark of ficus racemosas, 100 gm ficus archyranthes aspora stem, 10gm *Tinospora cordifolia* stem, boiled together with 3 lit. of water until it becomes half, 200 jaggery mixed once for retention of placenta.

Ficus auticulata Cour.
(Thubar) Fagaceae

Parts used : Leaves and fruits
Ethno veterinary use : Leaves and fruits are fed to cattle for better milk yield and immunity.

Gossypium herbaceum L.
(Kapaas) Malvaceae

Ethno veterinary use : Decoction of roots for urinary problem and fruit is given as a galactagogue.

Helianthus annus L.
(Surajmukhi) Asteraceae

Ethno veterinary use : 100gm of leaves + 100 gm of seeds crushed and made poultice and applied on bruises, wounds and ulcers.

Ipomoea batatas (L.) Lam
(Shakarkhand) Convolvulaceae

Parts used : Root and Leaves
Ethno veterinary use : Used for promoting of lactation.

Lawasonia inermis L.
(Mehandi) Lythraceae

Ethno-veterinary use : 200 gm of leaves pounded and applied externally for skin diseases, boils and burns.

Linum usitalissimum L.
(Alsi) Linaceae

Parts used : Seeds
Ethno veterinary use : Oil cakes as a protein supplements linseed boll as roughage for cattle and horses, crushed linseed for inflammation, ulcers and boils. One kg oil with other cattle feed for 5 days.

Magnifera indica L.
(Aam) Euphorbiaceae

Parts used : Leaves, fruit and seeds
Ethno veterinary use : 200 gm bark, 200 gm tender leaves of ananas are pounded and make 6 boluses one bolus daily for six days for diarrhoea dysentery and haemorrhagic gastritis.

Mentha arvensis L.
(Pudina) Lamiaceae

Parts used : Leaves
Ethno-veterinary use : 20 gm leaves crushed with 5 gm of salt twice daily SOS for diarrhoea, cough, fever and respiratory troubles.

Momordica charantia L.
(Karela) Cucurbilaceae

Parts used : Leaves
Ethno veterinary use : Decoction of 50 gm of leaves with salt given orally daily for seven days for bilious infection, fever and skin disease and fruit is used for indigestion.

Nerium indicum Mill.
(Kaneer) Apocynaceae

Parts used : Root, Leaves and flowers
Ethno veterinary use : Roots are used as anthelmintic, febrifuge and diuretic. And paste made from leaves and

flowers applied on skin to kill lice and others insects and smoke of leaves as repellants mosquito etc.

Nymphoides peltatum Kuntz.
(Khuar) Menyanthaceae

Parts used : Whole plants
Ethno veterinary use : Plant mixed with normal feed given to cows for better milk yield.

Ocimum americanum L.
(Kala Tulsi) Limiaceae

Parts used : Leaves
Ethno veterinary use : Leaves are used for skin disease and flow of urine.

Phoenix dactylifera L.
(Khejur) Arecaceae

Ethno veterinary use : 200 gm fruit kept over night and extract is given daily for one week as diuretic, digestion and health tonic.

Picrohiza kurrooa Royal ex Benth
(Chobikhor) Scrophulariaceae

Parts used : Roots
Ethno veterinary use : Root extract is given to horses for curing general debility.

Piper nigrum L.
(Kali Mircha) Piperaceae

Parts used : Root and Fruit
Ethno veterinary use : 20 gm of fruit powder with 50 ml of water given orally daily for three days for fever, cough and flatulence.

Psidium guajava L.
(Amrud) Myrtaceae

Parts used : Tender leaves
Ethno veterinary use : 100 gm of guava leaves, three leaves of acorus and dried ginger grounded and made bolus. Two times daily for 7 days for calf scour.

Punica granatum L.
(Anaar) Punicaceae

Parts used : Root, Bark, Seed and Fruit
Ethno veterinary use : 100 gm of peel of fruit crushed and extract is given for three days for diarrhoea and dysentery. 100 gm of stem bark pounded and mixed with 100 ml water for intestinal worms.

Rauvolfia serpontina L.
(Sarpgandha) Apocynaceae

Parts used : Root
Ethno veterinary use : Roots extract 100 gm one time daily for 5 days for intestine troubles, uterine contraction for delivery of calf.

Swertia chirayita (Roxb. Ex Flem) karsten
(Chivata) Gentianaceae

Parts used : Whole plant
Ethno veterinary use : Dried plant stems and flowering branches used as milk laxatives one time in a week for intestinal worms. 20 gm of flowers stem branches kept over night in water and given orally for intestine worms.

Tinospora cordifolia wild
(Gulancha) Menisspermaceae

Ethno-veterinary use : Stem is used a anthelmintics and digestive carminatives. Decoction of stem is used for seven days for disorder of Gut.

Wilhania sommifera L.
(Ashwgandha) Solanceae

Parts used : Root and Leaves
Ethno-veterinary use : 100 gm roots are pounded and mixed 50 gm jaggery and given BD daily for flow of urine and increase of milk secretions and leaves are used for fever.

Zingiber capitatum Roxb.
(Jangli Adark) Zingiberaceae

Parts used : Rhizome
Ethno-veterinary use : Substitute for ginger, carminatives and useful for anorexia.

Ziziophus mauritiana Lam.
(Ber) Rhamnaceae

Parts used : Whole plant
Ethno-veterinary use : Extract of root for fever 50 gm dried seeds crushed in boiled water, one time for three days for indigestion.

2.1 Medicinal Plants with Hindi/Local names used for treatment of Animals & Birds disease.

Anorexia; (Phukh band)

- Allium sativa L. (Lahsun)
- Cinamomum tamala Nees & Ebrem.
- Curcuma longa L. (Haldhi)
- Hibiscus cannabinus L. (Ambari)
- Phyllanthus amarus K. Schhum & Thonn (Jarmala)
- Zingib capitum Roxb. (Jangli)
- Zingiber purpureum Rose (Adrak)

Blood Dysentry (Ratt. Julab)

- Acacia catchu wild (Khair)
- Garcinia pedunculata Roxb. (Borthe Kera)
- Hibiscus sabdariffa L. (Lalambri)

Burn (Jalanna)

- Bixa orellana L. (Sinduria)
- Euphorbia ligularia Roxb.
- Lawsonia intermis L. (Mehndhi)

***Bloat* (Afara)**

- Curcuma caesia Roxb. (Nar-kachura)
- Cissanpelos pareira L. (Akanadi)
- Mentha arvenisis L. (Pudina)
- Phyllanthus amarus K. Schum & Thon. (Jarmala)
- Zingiber officinale Rose (Jangli)

Bone dislocation/fracture

- Bombase ceiba L. (Semul)
- Cissus quadrangularis (Harjoor)
- Stellaria media L. Vill. (Safed Putki)

Boils (Phoras)

- Bryaphyllum pinnatum (Lam.) Kurz.(Pathar Chat)
- Calotropis gigontea (L.) R. Br. (Akk)
- Stellaria media L. (Vill) (Safed Putki)

Bleeding Fracture Horn (Seengh tootna)

- Calotropis gigantean (L.) R. Br. (Akk)

Black Quarter (Bhake wali bimaari)

- Ficus benghalenis L. (Barr.)
- Curcuma longa L. (Haldi)

Biliary Infections (Bile duct problems)

- *Ficus racemosa* L. (Gular)
- *Curcuma longa* L. (Haldi)
- *Manochoria cagindis* Presl.
- *Saccharum officinarum* L. (Ganna)
- *Solanum torvum* Swartz.

Calf Scour

- Boerhavia diffusa L. (Sanl)
- Psidium guajava L. (Amrud)

Cough (Khanshi)

- Menta arvenis L.(Pudina)
- Piper nigrum L.(Kali Mirchi)
- Solanum nigrum L.(Makoi)
- Zingiber capitatum. Roxb.(Jangli)
- Zingiber zerumber L.(Narkchur)
- Clerodendrum indicum (L.) kuntz.(Bamhanhatti)
- Adianthum capillus veeneris L.(Hansraj)

Constipation impaction (Kubbz)

- Aloe barbadensis Mill (Ghee kanwar)
- Bauhenia purpurea L. (Khair wall)
- Cirtus lemon (L.) Burm. f. (Nimbo)
- Caroton caudatus Geisel (Swaka)
- Drymaria cordata (L.) wild ex Roem. (Heart leaf)

Carminatives (Haazma Dwa)

- Alstonia scholaris (L.) R. Br. (Chattiyan)
- Camellia nilgirica (Chai)
- Chemopodium album L.(Bathwa saag)
- Citrus lemon (L.) Burn. f. (Lemon)
- Curcuma aromatica L. (Jangli Haldi)
- Emblica offcenalis Gaertn. (Aonla)

Diarrohea & Dysentry (Jalab)

- Amranthum tricolor L. (Bari Chauli)
- Ananaas comosus (L.) Merr. (Ananas; Pineapple)
- Calamos sativa L. (Bhang)
- Datura metel L. (Datura)
- Punica gransteem L. (Anar)
- Jatropha curcas L. (Physic nut.)
- Meyna laxiflora Robyns. (Mainphal)

Dog Bites (Kutta Kaantna)

- Bambusa tulda Roxb. (Peka)

***Dyspepsia* (Indigestion)**

- Brassica oleracea L. var Capitata L. (Rai)
- Brassica juncea (L.) Czern. (Bantopi)
- Citrus lemon (L.) Burm. f. (Nimbo)
- Croten tigtium L. (Jamalgota)

Eye Disease (Akhan di bimaari)

- Commelina benghaleusis L. (Kanchara)
- Heliotropium indicum L. (Hattasura)
- Plantago major L. (Yempat)

Fever (Takku)

- Allium sativum L. (Lahsn.)
- Croton tiglum L. (Jamalgota)
- Hibiscus rosa-sinensis
- Mentha arvensis L. (Pudina)
- Piper betle L. (Pan)
- Piper longum L. (Pipla)
- Piper nigrum L. (Kali Mirchi)
- Solanum nigrum L. (Makoi)

Flatulence (Badhazma)

- Brassica juncea (L.) Czern. (Rabi)
- Citrus amboimcus (Jambiri)
- Jatropa curcas L. (Physic nut)
- Piper nigrum L. (Kali Mirchi)
- Zingiber purpurenum Rosc. (Adrak)

Foot & Mouth Disease (Muhun Khur di bimari)

- Leucaas plukenettii (Roth) Spreng. (Chota jalkusa)
- Curcum longa L. (Haldi)

Galactogogue (Dudh wadane walli cheezein)

- Coccinia grandis (L.) voigt. (Kanturi)
- Ipomoea batatas Lam. (Shakarkand)
- Withania somnifera (L.) Dunal. (Ashwaganda)
- Haemostati (Ratt Rokna)
- Euphoria ligularia Roxb. (Shehund)

- Ageratum conyzoides L. (Visadodi)

Health Tonic (Takat wali Dwa)

- Allium cepa L. (Piaz)
- Alstonia scholaris L.(Chattiyan)
- Urtica dioica L. (Postnatal tonic)

Haemorrhagic Gastrites (Ratt Pechis)

- Magniferi indica L. (Aam)

Insects & Snake Bite (Keera & Sapp da Khana)

- Bixa orellana L. (Sinduria)
- Catharanthus roseus (L.) G. Don (Sadha bahar)

Intestinal worms (Piat keere)

- Ananas cosmmosus (L.) (Ananas)
- Carica papaya L. (Peepya)
- Citrus lemon (L.) Burm. f. (Nimbo)
- Nerium indicum Mill. (Kawar)
- Piper betle L. (Pan)
- Punica granatum L. (Anar)

Joint swelling (Angh soujna)

- Alstonia scholarsis (L.) R. Br. (Chattiayan)
- Curcuma amada Roxb. (Am haldi)

Prolapse of Uterus (bachedani da phailna)

- Mimosa pudica L. (Lajjbanti)

Respiratory troubles (Sule)

- *Abrus precatorius* L. (Ratti)
- *Allium sativum* L. (Lahsn)
- *Mentha arvensis* L. (Pudina)

Retention of Urine (Pashaab Rukna)

- *Acalypha indica* L. (Khokli)
- *Allium cepa* L. (Piaz)
- *Cassia fistula* L. (Amaltas)
- *Berum indicum Mill.* Kaneer)
- *Withania somnifera* L. *Dunal.* (Ashwagandha)

Removal of Placenta (Jeher nikaalna)

- *Acyranthes aspera* L. (Chirachitta)
- *Bambusa tulda Roxb.* (Peka)
- *Ficus religiosa* L. (Pipal)
- *Sacchanarum officinarum* L. (Gana; Sugarcane)

Rinderpest (Rindder pest)

- *Murraya koenigii (*L.*) Spreng.* (Katnim)

Ranikhet (Poultry safaya)

- *Parkia javannica Merr.* (Soputa)
- *Phyllanthes amarus k. Schum & Thonn*. (Jaramla)

Skin Diseases (Chamri di dimarri)

- Allium sativum L. (Lahsn)
- Aloevera barbadensis Mill.(Gwar Patta)
- Bracceea juncea L. (Rai)
- Curcum longa L. (Haldi)

Tap worm (Paet Chapte Keere)

- Blumea lacera (Burm. f.) DC(Kukurshonda)
- Schima wallichii (DC) Korth. (Chilauni)

Urinary infections (Peshaab Wali Marjaan)

- Cucumis melo L.(Kharbooja)
- Rauvolfia sepentina (L.) Benth. Ex kurz.(Sharpgandha)

Wound & Ulcer (Jakhumm)

- *Byophyllium pinnatum (Lam.) kurz.* (Pattar Chatta)

Wound wash & Ulcer (Jakham Safaha)

- *Curcum longa* L. (Haldi)

3. RESULT AND DISCUSSION

While conducting the critical analysis of study of the ethno-veterinary plants in the state of Jammu and Kashmir and its adjoining area especially the hilly terrain with special reference to Gujjar, Bakerwal, Gaddhi, Sippi, other people engaged in cattle rearing and government employees deployed for migration along government flocks in Sheep/Animal Husbandry Department towards Dhokes and Farms and viewing of potential of medicinal plants already published , it has been seen that these medicinal plants plays a great role in curing the diseases and ailments . It would be of great potential if some scientific study and documentation is carried out by the concerned authorities of Govt. who have been entrusted the job of research and development but acts and notifications issued time to time for preserving vegetation got implemented with letter and spirit and ensured that no harm is made to natural flora and fauna So that the biodiversity reserves is passed on to future generation for their welfare, development and research perspectives. In addition, it has also been noted that few species of plants are very poisonous for human being and animals, had a put a substantial socio-economic loss to the tribal and farmer community as such a matter of great concern. Besides, it has also been seen that most of plants species have resource which can be utilized for the treating more than one diseases as such, are very useful in the ethno veterinary practices . Some of these few plants species in order of resource potential are: *Cucuma domestica* valet, *Brassica compestris* L., *Piper nigrum* L., *Triticum aestivum* L., *Allium sativum* L., *Zingiber officinale Rosc., Cannabis sativa* L., *Capsicum annum* L., *Tinospora cordifolia, Allium cepta* L., *Citrus lemon* L., *Punica granatum* L., *Mentha arvensis* L. and many others. There has been no documentation of these indigenous practices. It has been transmitting across generations by oral tradition and therefore in danger of extinction. The growing acceptance reveals that most of this traditional type treatment have therapeutic value and needs to be documented in the state of Jammu and Kashmir having a rich repository of flora and fauna. Moreover, the ethno-veterinary knowledge of proper dosages mode of utilization

and formulation etc. is gradually losing its appeal due to rapid modernization. Perusal of literature shows no substantial highlights in ethno-veterinary practices in Himalayan region of Jammu and Kashmir and also of other parts of India. Although attempt had been made by scientists, researchers and many others engaged in organizations at national and international level with reference to books / literatures published time to time on medicinal plants resources for the treatment of human beings and animals.

4. CONCLUSION

During the present study 65 species of plants with medicinal value were identified from the area of study. A large number of valuable resources, practices and knowledge of medicine which can solve problem of shortage of drugs at rural level ,drug resistance and the side effect of some of the salts of modern medicines. Since the plants are easily available in wild for collection in consultation with the local traditional healers. Agricultural expansion and deforestation were found to be major threat. The attention was drawn to the plants species with toxic principles and dosages for safety.

8. REFERENCES

1. Somvanshi R. Veterinary medicine and animal keeping in ancient India. Asian Agri-History. 2006;10(2):133-46. Available from: https://pdfs.semanticscholar.org/551c/ed7631cef68338450e9c7684ffd7851efcc9.pdf
2. Pandey PC, Tiwari L. Ethnoveterinary plants of Central Himalaya: Bishen Singh Mahendra Pal Singh. Dehra Dun. 2015. p. 1-217.
3. Sharma UK. Ethnoveterinary plants of North-East India. Bishen Singh Mahendra Pal Singh. Dehra Dun. 2012. p. 1-144.
4. Draft United Nation's declaration on rights of indigenous people[Internet]. 1994. [Cited on 2019, 9 November]. Available from: https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html
5. Rao PK, Hasan SS, Bhellum BL, Manhas RK. Ethnomedicinal plants of Kathua district, India. J. Ethnopharmacology. 2015;171: 12-27. DOI: 10.1016/j.jep.2015.05.028
6. Registrar General of the Indian 2011 Census Ministry of Home affairs Govt. of India published on 2011. [Cited on 2019, 26 October]
7. Ministry of Agriculture Animal Husbandry, dairying and fishery Govt. of India Krishi Bhawn, New Delhi. Published on 2014. [Cited on 2019, 26 October]. Available form: http://www.dahd.nic.in/documents/statistics/livestock-census
8. Govt. of Jammu and Kashmir Forest Department, Geographical features and area. Forest Cover as per the State report 2001. [Cited on 2019, 9 November]. Available from: http://jkforest.gov.in/geo_area.html
9. Bhatt A, Parvan AK. Studies on ethno veterinary usages of medical plants by people in Garhwal Himalayan region- A boon to animal Husbandry. J Pharmacogn Phytochem. 2018;SP 5:149-53. Available from: http://www.phytojournal.com/archives/2018/vol7issue5S/PartD/SP-7-5-26-230.pdf

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6. AUTHORS CONTRIBUTION STATEMENT

Dr. R. L. Bhellum conceptualized and gathered the data with regard to this work. Dr. B. L. Bhellum analyzed the data inputs were given wherever necessary. Both authors discussed the methodology and results to finalize the manuscript.

7. CONFLICT OF INTEREST

Conflict of interest declared none.

10. Khan Khalid, Rehman Inayat Ur, Calixto Eduardo Sores, Ali Niaz, Ijaz Farjama. Ethnoveterinary therapeutic practices and conservation status of medical flora of Chamla valley Khyber Pakhtun Khwa, Pakistan. Front. Vet. Sci. 2019;6:122. DOI: 10.3389/fvets.2019.00122
11. Ahmed Suheel, Rodotra Sudesh, Singh JP, Verma DK, Sultan SM. Ethnoveterinary uses of some important plants by Pastoralists in Kashmir Himalaya. SKUAST J Res. 2017;19(1):121-8. Available from: https://www.researchgate.net/profile/Suheel_Ahmad2/publication/315619429_Ethnoveterinary_uses_of_some_important_plants_by_pastoralists_in_Kashmir_Himalaya_Research_Paper/links/58d5f9f845851533787 1bdf/Ethnoveterinary-uses-of-some-important-plants-by-pastoralists-in-Kashmir-Himalaya-Research-Paper.pdf
12. Rashid Abdul, Anand VK, Shah Ashraf Hussain. Plants resources utilization in Ethno-veterinary practices by Gujjar and Bakerwal tribes of Jammu and Kashmir India. J. Phytol. Res. 2007;20(2):293-98. Available from: https://pdfs.semanticscholar.org/8e0f/e019e9383b0166589f6e128edfe5ae21c9c4.pdf
13. Mc Corkle CM. Back to the Future: Lessons from ethno-veterinary RD & E for studying and applying local knowledge. Agriculture and Human values; 1995;12(2):52-80. Available from: https://link.springer.com/article/10.1007/BF02217297
14. Kapahi BK, Srivastava TN, Sarin YK. Traditional medicinal plants of Gurez (Kashmir) – An ethnobotanical study. Anc Sci Life. 1993;13(1-2):119-124. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3336548/
15. Lone Fayaz A, Lone Shazia, Malik Ashraf A, Malla Firdous A. Ethnobotanical studies in tribal areas of district Kupwara, Kashmir India. Intl J Pharma BioScie. 2012;3(4):399-411. Available from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.443.8818&rep=rep1&type=pdf