

AN ETHNOBOTANICAL STUDY OF UTTAR PRADESH HIMALAYA IN RELATION TO VETERINARY MEDICINES

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The present communication deals with the utilization of plants in relation to the veterinary medicines by different hill populace inhabiting the remote localities of Uttar Pradesh Himalaya. Extensive ethnobotanical explorations in several remote areas of Garhwal and Kumaon regions during the years 1984-1991, accumulated some interesting as well as little known information on 60 plant species used to relieve various ailments of domestic animals.

Key Words: Ethnobotany, veterinary medicines, U.P. Himalaya.

Recently ethnobotanical studies are receiving great attention to restore the herital knowledge on the vegetation, primarily on the primitive communities, where this knowledge is still preserved (Faulks, 1958; Schultes, 1960; Core, 1967; Shemluck 1982; Bye, 1985 etc.). In this context Himalaya represents one of the important resource reservoirs of ethnobotanical lores. The Uttar Pradesh Himalaya lies in between 77°49'E to 81°E and 29° to 31°28'N, and comprises eight districts viz., Almora, Chamoli, Dehra Dun, Nainital, Pauri, Pithoragarh, Tehri and Uttarkashi, covering an area of about 57,400 sq. km. The remote localities of this zone are inhabited by various primitive ethnic groups such as the nomadic or semi-nomadic communities (Gujjars, Marchhas, Tolchhas, Joharis, Byansis, Darmis and Jadhs) and non migrating communities (Jaunsaris, Boxas, Pinswaris, Gangwals, Ratheis and Ban Rauts). Besides tribal population, other class of people residing in this region are known as 'Pahari' (Garhwali or Kumaoni).

During the recent past some ethnobotanical studies from U.P. Himalaya have been conducted by Bhargava (1959), Juyal and Uniyal (1960), Gupta (1960), Shah and Joshi (1971), Gaur (1977), Uniyal (1977), Gaur *et al.* (1983), Malhotra and Balodi (1984), Gaur and Tiwari (1987), Singh *et al.* (1987), Bhatt and Gaur (1992) and others. However, perusal of literature indicated that there are only a few records on the plants of ethnoveterinary medicines (Issar, 1981; Pal, 1981). Keeping in view, the present paper is an attempt to compile the peculiar mode of utilization of plants in veterinary medicines by various ethnic groups of remote localities of U.P. Himalaya.

MATERIALS AND METHODS

Frequent field trips were made in different seasons and localities during the years 1984-1991, and the medico-veterinary information collected as suggested by Bank II (1951), Schultes (1962), Jain (1963), Kunkel (1984), and on the basis of frequent interview with the graziers, shepherds, housewives, medical practioners and experienced old folk of various ethnic groups. After proper treatment and procedures all the plant specimens are deposited at the Herbarium and Ethnobotanical Museum, Botany Department, H.N.B. Garhwal University, Srinagar (GUH).

Under the enumeration the plant species are arranged in alphabetical order, which include family, vernaculars, Hindi and English names (if available), ethnobotanical information, distribution, approximate range of elevation of the localities from where the plants were collected and their herbarium numbers.

ENUMERATION

Aesculus indica (Colebr. ex Camb). Hook. f. (Hippocastanaceae) V & H- Pangar, E-Himalayan Horse Chestnut. The immature fruits are cooked with husk and given to the cattle in the treatment of stomach disorders. Common, 1800-3000m, Munsiyari, GUH 9037.

Agrimonia pilosa Ledeb. var. *nepalensis* (D. Don) Nakai (Rosaceae) V-Belur, E-Agrimony. The bruised plant is applied on sores and wounds of cattle. Common, 1000-2600m, Lilam, GUH 9169.

Ampelocissus latifolia (Roxb.) Planch. (Vitaceae) V-Bank Layadu, Bhel Chapru, H-Panibel, E-Jungle Grape vine. Stem is crushed and the juice mixed with water is poured into the eyes of cattle in cataract. Common, up to 1600m, Arakot, GUH 4681.

Anagallis arvensis L. (Primulaceae) V-Jonkmari, H-Jangmari, E-Bird's Eye. Plant juice is poured into the nostrils of cattle to expel the leeches. Common, up to 1500m, Srikot, GUH 2065.

Annona squamosa L. (Annonaceae) V- Jangli Sarifa, H-Atisphal, E-Custard Apple, Leaf juice is applied over cattle wounds to destroy maggots. Common, up to 800 m, Cheela, GUH 4670.

Arisaema intermedium Bl. (Araceae) V- Meen, Dank. Paste of tubers is applied on worm infected sores of cattle and goats. Thoroughly boiled and cooked tubers are given to cattle in the treatment of diarrhoea and dysentery. Common, 2000-3200m, Bugdyar, GUH 9056.

Asparagus adscendens Buch.- Ham. ex Roxb. (Liliaceae) V-Jhirni, Keswa, H-Safed musali. The infusion of rhizomes is given to cattle in haematuria and contusions. Common, up to 1600m, Chipalthra, GUH 9229.

Atylosia scarabaeoides Benth. (Papilionaceae)V-Jarul. Leaf juice is given to cattle in the treatment of diarrhoea and dysentery. Common, 1000-1400m, Kothyalsain, GUH 9734.

Betula alnoides Buch. - Ham. ex D. Don (Betulaceae) V-Saur, H-Bhojpatra, E-Indian Birch. Bark paste is applied on cuts and worm infested wounds of cattle and goats. Common, 2000-3000m, Bhundar, GUH 9006.

B. utilis D. Don (Betulaceae) V-Bhujyar, Syasin, H-Bhojpatra, E-Himalayan Silver Birch. Stem galls are ground with grains of *Fagopyrum esculentum* and given to cattle and goats in relieving internal injuries. Common, 3200-4000m, Her ki dun, GUH 9005.

Boschniackia himalaica Hook. f. Thoms. ex Hook. f. (Orobanchaceae) V-Ganelu. Pultice of the entire plant is applied on cuts, wounds and breakage of horns. Uncommon, 2700-3200m, Malari, GUH 9105.

Buxus wallichiana Baill. (Buxaceae) V-Papri, Dumsin, H-Chikri, E-Box Wood Tree. Bark paste is

applied as a plaster on fractures of goats and sheep. Uncommon, 2400-3000m, Bugdyar, GUH 9451.

Caltha palustris L. (Ranunculaceae) V-Manyaru, E-Bassinet. Root paste is applied on worm infected sores of goats and sheep. Common, 2900-3800m, Hemkund, GUH 9350.

Carissa opaca Stapf. ex Hains (Apocynaceae) V-Karundu, H-Karanda. Root paste is applied on worm infested sores and breakage of horns of cattle. Common, up to 1200m, Marora, GUH 2255.

Caryopteris odorata (D. Don) Robinson (Verbenaceae) V-Karwi. The leaf juice is applied on worm infested wounds of cattle. Wood paste is applied as a plaster on fractures. Common, up to 1800m, Chauki, GUH 1575.

Chenopodium album L. (Chenopodiaceae) V-Bhethu, H -Bathua, E- Pigweed. Crushed leaves are applied on cuts, wounds and sores of cattle. Boiled grains are given to cow for smooth delivery. Cultivated, up to 2500m, Raini, GUH 9455.

Circium verutum (D. Don) Spreng. (Asteraceae) V- Kandar. Root paste is applied in chest pain (respiratory trouble) and rubbed on wounds and sores of cattle. Common, 1800-3000m, Sosa, GUH 9033.

Cocculus laurifolius DC. (Menispermaceae) V-Tilpharya. Leaf juice is rubbed on the body of cattle to kill the lice and klins. Common, up to 1300m, Jamtadi, GUH 9329.

Colebrookea oppositifolia Sm. (Lamiaceae) V-Bindu, H-Binda. The leaf juice is poured into the eyes of cattle in the treatment of cataract. Common, up to 1500m, Nangni, GUH 1533.

Corydalis cornuta Royle (Fumariaceae) V- Balsamjari, Root paste is applied on wounded shoulders of oxen. Common, 2000-3400m, Garbyang, GUH 9349.

Costus speciosus (Koenig) Sm. (Zingiberaceae) V- Keoli, H- Keu. Juice of rhizomes is given to cattle in relieving internal injuries. Common, up to 120m, Byasi, GUH 2061.

Curcuma longa L. (Zingiberaceae) V- Haldu, H-Haldi, E-Indian Saffron. Dried powder with mustard oil is applied on the external injuries and also given for internal iniuries. Cultivated, up to 1400m, Arakot, GUH 15040.

Debregeasia salicifolia (D. Don) Randl. (Urticaceae) V- Syanry, Tussyari. Plaster made with pulverized bark and splint made of wood, are applied on fractures of cattle. Common, 1200-1800m, Chingran, GUH 9558.

Dendrocalamus strictus (Roxb). Nees (Poaceae) V- Bans, Chayee, H- Bans, E- Male Bamboo. Rhizomes are given to cow as an energetic food just after delivery. Common, up to 900m, Haldukhatta, GUH 4234.

Euphorbia pilosa L. (Euphorbiaceae) V- Chuplya. The plant latex is applied on cuts, wounds and sores of cattle and goats. Common, 1800-2800m, Lambagarh, GUH 9045.

Fagopyrum esculentum Moench. (Polygonaceae) V- Ogal, Jhangra, H- Kutu, E- Buckwheat. Root paste is applied on hoops and mouth (Khurpaka) diseases of cattle. Common, 1500-3500m, Mana, GUH 9463.

Ficus auriculata Lour. (Moraceae) V- Timlu, Timma, H- Timla, E-Eve's Apron. Slightly dried leaves are boiled with husk and given to cattle just after delivery as an energetic food. Common, up to 1200m, Chipalthra, GUH 9630.

Filipendula vestita (Wall. ex G. Don) Maxim. (Rosaceae) V- Toseer. Leaf paste is applied on worm infested wounds of goats and sheep. Leaf infusion is given in relieving stomach disorders. Uncommon, 2600-3400m, Realkot, GUH 9196.

Girardinia diversifolia (Link.) Friis (Urticaceae) V- Kanalu, Susna, H- Bichhu Chikri, E- Himalayan nettle. Plaster made from roots and leaves is applied on fractures of cattle and goats. Slightly dried leaves are given to female cattle for smooth delivery. Common, 1800-2500m, Jumma, GUH 9479.

Grewia optiva J.R. Drumm. ex Burret (Tiliaceae) V- Bhyunl H- Bhimal. Bark paste is applied as a plaster on fractures of cattle, and internally given to relieve indigestion. Common, 500-1600m, Nigalpani, GUH 9468.

Hedychium spicatum Buch. - Ham. ex Sm. (Zingiberaceae) V- Kachoru, Syoru, H-Kapurkachri, E- Spiked Ginger Lily. Seeds are given to cattle to expel the dead fetus. Rhizomes are pounded with *Tinospora cordifolia* and given to cattle in relieving stomach disorders and fever. Common, 1200-2500m, Lilam, GUH 9340.

Juglans regia L. (Juglandaceae) V- Akhorh, Okharh, H- akhrot, E- walnut. Leaf extract is given in khurpaka disease of cattle. Common, 1400-2600m, Sela, GUH 9560.

Litsaea chinensis Lamk. (Lauraceae) V- Chandna, H- Maida lakri. Leaf fodder is supposed to be useful in stomach disorders of cattle. Common, up to 1200m, Laldhang, GUH 5565.

Micromeria biflora (Buch.- Ham. ex D. Don) Benth. (Lamiaceae) V- Gorakhpan, Balmaghas, E- Indian Wild Thyme. Plant paste is applied on worm infested wounds and shoulder wounds of cattle. Common, 600-2500, Lata, GUH 9388.

Morina longifolia Wall. ex DC. (Dipsacaceae) V- Biskandaru, Root paste is mixed with camphor and applied on worm infected wounds of goats and sheep. Uncommon, 3000-4000m, Garbyang, GUH 9133.

Myrsine semiserrata Wall. (Myrsinaceae) V- Gaunta. The aqueous paste of gum is given to cattle in relieving diarrhoea and dysentery. Common, up to 1800m, Dobata, GUH 4185.

Neolitsea pallens (D. Don) Momiyama et Hara (Lauraceae) V- Chiraira, Kaula. Seed oil is applied on worm infected wounds, shoulder wounds and rebbed on the body to kill the lice. Common, 1400-2700m, Sosa, GUH 9089.

Nicotiana tabacum L. (Solanaceae) V- Hamakhu, Ban tamkhu. Powdered leaves are mixed with water and poured into the nostrils of cattle to expel the leeches. Common, up to 1300m, Srikot, GUH 1776.

Origanum vulgare L. (Lamiaceae) V- Malchru, Dwana, H- Sathra, E- Wild Marjoran. The plant juice is given to goats and sheep in relieving diarrhoea and dysentery, Common, 1400-360m, Chalake, GUH 9113.

Paris polyphylla Sm. (Liliaceae) V- Satwa, bank. The aqueous paste of rhizomes is given to cattle in relieving fever and stomach disorders, and externally applied on shoulder wounds of oxen. Uncommon, 2200-3000m, GUH 9052.

Pedicularis hoffmeisteri Klotz. (Scrophulariaceae) V- Haldyaphul. Root infusion is given to cattle and goats in the treatment of flatulence and stomach disorders. Common, 2500-3500m, Malari, GUH 9529.

Pinus roxburghii Sargent (Pinaceae) V- Kolain, Chilla, H- Chir, E- Long Leaved Pine. The resin is applied as plaster on sheep and goats in fractures. Leaf paste is applied as a fomentation on the sprains in cattle. Common, 600-2800m, Joshimath, GUH 4472.

P. wallichiana Jacks (Pinaceae) V- Cheel, Kail, H- Kail, E- Blue Pine. A plaster of bark is applied on the fractures of cattle. Common, 2000-3200m, Tapovan, GUH 5551.

Podophyllum hexandrum Royle (Podophyllaceae) V- Angwalya, Bankakhri, H- Papra, E- Indian Podophyllum. Root paste is applied in khurpaka diseases of cattle. Rare, 2800-4500m. Panwali, GUH 4525.

Potentilla fulgens Wall. ex Hook.f. (Rosaceae) V- bajradantee. The infusion of entire plant is given to regulate the fertility in female cattle. Common, 1800-3500m, Auli, GUH 9159.

Prunus cerasoides D. Don (Rosaceae) V- Pamyam, Phaja, H- Padam, E- Himalayan Wild Cherry. The fresh bark is pounded and applied as a plaster on fractures of cattle. Common, 1500-2200m, Agrora, GUH 4717.

P. persica (L.) Batsch. (Rosaceae) V- Aarhu, Khirola, H- Aru, E- Peach Tree. The young shoots are crushed and applied in khurpaka diseases of cattle. Cultivated, up to 3000m, GUH 4517.

Pueraria tuberosa DC. (Papilionaceae) V- Sarur, Sural, E-Indian Kundzu. Thoroughly boiled tubers are given to cattle just after delivery as an energetic food, and as a tonic to the cattle. Common, up to 1000m, Byasil, GUH 4606.

Pyrus pashia Buch. - Ham. ex D. Don (Rosaceae) V- Mole, The fruit is crushed with teeth and juice is forced into the eyes of cattle in cataract and injuries. Common, 1200-2000m, GUH 4689.

Rumex nepalensis Spreng. (Polygonaceae) V- Kholya, Thungdung. The roots are mixed with butter and given to goats and sheep in diarrhoea and dysentery. Common, 1400-3400m, Lata, GUH 9156.

Schleichera oleosa (Lour). Ocken (Sapindaceae) VV & H- Kusum, E- Honey Tree. Seed paste is applied on worm infested wounds of cattle and wounded shoulders of oxen. Common, up to 800m, Kalsi, GUH 4575.

Senecio graciliflorus DC. (Asteraceae) V- Luchee. The plant paste is applied on khurpaka diseases and shoulder wounds of cattle. Common, 2500-3500m, Dugdyar, GUH 9090.

Smilax glaucophylla Klotz. (Smilacaceae) V- Kukurdeni. Root decoction is given to cattle in relieving flatulence and fever. Common, 1600-2400m, Narayan-Ashram, GUH 9396.

Stephania glabra (Roxb.) Mires. (Menispermaceae) V-Ginjaru, Belaganu. Thoroughly boiled tubers are given to cattle as vermifuge. Common, up to 2000m, Gainagaon, GUH 9055.

Taxus wallichiana Zucc. (Taxaceae) V-Thuner, Lwenta, V- Thuner, Lwenta, H- Thuno, E-Common Yew. Bark paste is applied as a plaster on fractures of cattle and goats. Common, 2200-3600m, Benakuli, GUH 15041.

Tinospora cordifolia (Willd.) Miers. (Menispermaceae) V- Gilwai, H- Gulancha, E- Gulanch Tinospora. The stem is fed to cattle in haematuria, and with jaggery given to oxen as a tonic. Common, up to 1400m, Chauras, GUH 1663.

Trichosanthes tricuspidata Lour. (Cucurbitaceae) V- Ilaru, Indrain, H- Indraiyan. Seed paste is applied on khurpaka diseases of cattle. Thoroughly boiled unripe fruits are given to regulate the fertility in female cattle. Common, 800-2000m, Didihat, GUH 9389.

Ulmus wallichiana Planch. (Ulmaceae) V- Chamar mawa, H- Chamber maya, E- Himalayan Elm. The bark paste is applied as a plaster on fractures of sheep and goats. Common, 1600-2800m, Datmeer, GUH 15046.

Urgenia indica (Roxb.) Kunth. (Liliaceae) V- Banpyaz, H- Jangali payz, E- Indian Drug Squill, Bulb paste is applied on fractures and shoulder wounds of oxen. Not-common, 600-1200m, Chipalthra, GUH 4661.

Urtica dioica L. (Urticaceae) V- Kandali, Susna, H. Bichhu booti, E-Stinging Nettle. Slightly dried young shoots are boiled with husk and given to regulate the fertility in female cattle. Common, up to 2400m, Srikot, GUH 9470.

CONCLUSIONS

Different folk populations inhabiting or the

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remote localities of U.P. Himalaya are very much dependent on their livestock to substantiate their livelihood. The folk populace is well acquainted with the medicinal importance of their surrounding vegetation, particularly for their well being (Gaur *et al.*, 1983; Gaur and Tiwari, 1987; Bhatt *et al.*, 1987-88; Bist *et al.*, 1988, Paliwal and Badoni, 1989). However, there are limited number of plants used to cure their livestock, mainly on account of diagnosis problems of various ailments. Several investigations indicated that commonly diagnostic ailments prevailing in the domestic animals are wounds, fractures, injuries, khurpaka, stomach disorders, nasal and eye ailments and sexual disorders. It was also observed that the plant species used in the treatment of a particular ailment are well known to a large folk. An ethnoobotanical study of Uttar Pradesh Himalaya only in some exceptional cases the treatments are restricted to a particular folk populace or localities.

Species like *Caltha palustris*, *Filipendula vestita*, *Morina longifolia*, *Betula alnoides*, *Arisaema intermedium*, *Buxus wallichiana*, *Caryopteris odorata*, *Debregeasia salicifolia*, *Pinus roxburghii*, *Grewia optiva*, *Prunus cerasoides*, *Taxus wallichiana*, *Girardinia diversifolia*, *Urgenia indica*, *Boschnia himalaica*, *Paris polyphylla* etc. are commonly used in the treatment of wounds, injuries and fractures. The use of *Fagopyrum esculentum*, *Juglans regia*, *Hedychium spicatum*, *Trichosanthes tricuspidata*, *Senecio ciliiflorus* etc. is beneficial for hoops and mouth (Khurpaka) diseases. Stomach disorders and indigestion are treated by *Aesculus indica*, *Grewia optiva*, *Filipendula vestita*, *Paris polyphylla*, *Pedicularis hoffmeisteri*, *Hedychium spicatum*, *Litsaea chinensis*, *Myrsine semiserrata*, *Rumex nepalensis* etc. Some of the species like *Hedychium spicatum*, *Paris polyphylla*, *Smilax glaucophylla*, *Tinospora cordifolia* etc. are used to cure different types of fevers. *Pueraria tuberosa*, *Tinospora cordifolia*, *Urtica dioica*, *Girardinia diversifolia*, *Asparagus adscendens*, *Chenopodium album*, *Ficus auriculata*, *Potentilla fulgens* etc. are commonly used to cure the sexual disorders. species like *Pyruspashia*, *Nicotiana tabacum*, *Colebrookea oppositifolia*, *Anagal-liarvensis* are used in the treatment of nasal and eye ailments. Besides the otherwise common medicinal plants, the uses of *Boschnia himalaica*, *Caryopteris odorata*, *Cirsium verutum*, *Filipendula vestita*, *Pedicularis hoffmeisteri* and *Senecio graciliflo-*

rus are little known and interesting. Several of these medicinally important taxa used in the treatment of different ailments of livestock, and the knowledge about which is limited to the primitive societies need phytochemical investigations for proper assessment of their claims.

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