



Full Length Research Article

TRADITIONAL ETHNO-VETERINARY PRACTICES IN BETUL DISTRICT (M.P.) INDIA

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ABSTRACT

The present communication deals with the documentation of Ethno-veterinary medicinal plants used by the traditional healers in Betul district, Madhya Pradesh, India. Ethno veterinary information was gathered through individual interviews and observations among the tribal peoples of study area. A total of 41 species of Ethnoveterinary medicinal plants belongs to 32 families and 41 genera were recorded in the study with the help of Sixteen Ethno veterinary traditional healers. This information suggests the documentation of the medicinal plants and associated indigenous knowledge can be used for conservation and sustainable use of medicinal plants in the area and for validation of these plant preparations for veterinary treatment.

Key words: Ethno veterinary medicinal plants, Domestic animals, Betul district, Madhya Pradesh, India.

INTRODUCTION

In India veterinary science was developed as early as the Vedic period; Atharveda (3500 – 500 BC) has reference to dairy farming, cattle healthcare etc. The fact that veterinary practice was flourishing in the Vedic age (2000 BC) is evidenced in the hymns of Atharveda and Rigveda. References on animal husbandry are available in Kautilya's Arthashastra (200 BC). Mrig Ayurveda is another ancient text that describes the medical treatment of animals; Mrig (Pashu) Ayurveda is considered to be a special branch of Ayurveda. This ancient text is stored in the Library of Gujarat Ayurveda University in Jamnagar, India. Hasti Ayurveda is a comprehensive text that contains material devoted to medicine for elephants (Anand, 1894). Both Ayurvedic and Unani systems were in practice in India until 1800, at the time of British takeover. These systems are still practiced in Indian villages. The veterinary science in India can be classified into codified traditions and folk medicine and has a documented history of around 5000 years. The codified knowledge exist in the form of texts manuscripts on various aspects of veterinary care of the livestock. The folk health practices largely remain undocumented and are passed on from one generation to the other by word of mouth. There is a rich and efficient ethnoveterinary traditions exist in the villages of India which form integral part of the family and plays an important social religious and economic role. They comprise of belief, knowledge, practices and skills pertaining to health care and management of livestock.

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There are local healers who are knowledgeable and experienced in traditional veterinary health care. They use the locally available medicinal plants for treatment of animals. The ethno veterinary systems are ecosystem and ethnic community specific and therefore, the characteristics, sophistication, and intensity of these systems differ greatly among individuals, societies and regions; however, they are facing the threat of rapid erosion (Sri Balaji *et al.*, 2010).

MATERIALS AND METHODS

Study area

The work presented here is an outcome of an attempt made to document the traditional knowledge on ethno-veterinary plants and their uses by the local communities inhabiting the tribal villages and rural areas of Betul district, Madhya Pradesh.

The district Betul lies between 21° 55' and 21° 92' North latitudes and 77° 54' and 77.9° East longitudes. The district is administratively divided into three Sub-divisions. The district extends over an area of 10043 square kilometer of which 4056.39 square kilometer are constituted of forest which comes to less than 40% of total area of the district. According to the provisional data of the 2011 census population of the district is 1,575,247 (799,721 males and 775,526 females) with sex ratio of 970 females per 1000 males. The district is rich in tribal population. The tribal population of the district as per 2001 census is 5,49,907. First of all Chhipa Samaj find this place and then that is called BADNOOR. Chhipa samaj the merchant of cloths firstly survive in Betul. Main tribes inhabiting the district are Gonds and Korkus.

The remaining population is Marathi including castes like Marathas (Katiya), Kunbis, Mali, Brahmins, Patil, Bhoiyars, Chamars and Sonis.

Data Collection

Field trips ranging from 3 days to a week were made in the study area in every month of the year of study (June 2012 to November 2014) among the tribal people in Betul district. The major livelihood of these tribals are cattle farming, agriculture, collection of fuel-wood and forest resources such as herbal medicines, honey and some edible fruits and tubers from the nearby forests. The tribal's populations which are spread along the contiguous hill ranges of study area such as Uttamsagar, Nimiya, Fokalya, Sarani, Ghodadongri and Bhaidehi. These forest areas were occupied by different types of ethnic communities, with the predominant population of Gond and Korku.

Ethno veterinary data were collected from 16 resource persons (all belonged to the male group with average age of 65 years) of the study area who have much knowledge on medicinal plants with semi structured interviews. The interviews were conducted in the local language, i.e., *Hindi*. Ethno veterinary information included with the local name of the particular plant, parts utilized Ethno veterinary uses and methods of preparation and administration. The collected Ethno veterinary information was recorded on field note books. The plant specimens were identified by using established flora of Kolhapur District (Yadav and Sardesai, 2002). The vouchers specimens were deposited at the herbarium of Department of Botany, Bharatiya Mahavidyalaya, Amravati Dist. Amravati.

Observations

The present work enumerate the correct botanical name, family, local name, plant, part used, method of preparation and mode of administration of the drug against the ailments and the plants species are arranged taxonomically according to flora.

Clematis triloba: Heyne ex Roth. (Family-Ranunculaceae, Vernacular name-Ran- mogra (K), Ran-jai (M)), Nimiya forest, Voucher Specimen No.- 510/BMV/094

Leaves are crushed and the paste is applied on the throat swelling. The vegetable oil or butter is applied over the fractured part and then the decoction of leaves is applied over fracture part of animals. This treatment is used in case where plaster cannot be tied.

tinospora cordifolia: (Willd) miers: (Family-Menispermaceae, Vernacular name-Gulvel (G)), Gonapur, Voucher Specimen No. - 510/BMV/095

Fresh leaves are fed to cattle, cow and goat as a galactagogue agent to increase flow of milk.

Capparis zeylanica L. (Family- Capparaceae, Vernacular name-Waghata (P)) Prabhat Pattan, Ghoda dongari , Voucher Specimen No.- 510/BMV/098

Leaves crushed with water, mixed with 250 ml edible oil and applied on fractured bone of cattle against fracture. Leaves of *Capparis zeylanica L* and *Pergularia daemia* (Forssk.) Chiov. Crushed together, mixed with 250 ml castor oil and

applied on bone of cattle in bone fracture. Crushed leaves mixed in edible oil and tied with hairs to fractured part of animal by cloth to treat bone fracture. Leaves crushed in castor oil, mixed with bulk of egg and sieved white soil. Paste prepared is plastered around fractured bone and bandaged with the help of hairs, cloth strips and wooden splints made up of lightwood.

Abutilon indicum L. (Family- Malvaceae Vernacular name-Petari (M)), Prabhat Pattan, Ghoda dongari, Voucher Specimen No.- 510/BMV/101

Decoction of leaves mixed with whey is given orally two or three times a day to cure dysentery and diarrhea.

Bombax ceiba L. (Family- Bombacaceae, Vernacular name-Katsawar (B)), Ghatbiroli, Malaarghat, Voucher Specimen No.- 510/BMV/102

250 gms inner bark of stem is to be crushed, mixed with 750 ml water and given twice or thrice times a day in dysentery. The stem bark decoction mixed with water or whey is given early in the morning for three to four days in fever. The stem bark decoction mixed with buttermilk given to treat bloody dysentery in animals.

Ailanthus excelsa Roxb. (Family- Simaroubaceae, Vernacular name-Maharukh (M), Sawalmendha, Voucher Specimen No.- 510/BMV/108

The leaf juice in appropriate proportion is used to kill external parasites like lice and ticks on the skin coat of animals. Leaf decoction is applied on the wound to remove the maggots from the wound. Finely crushed leaves boiled with water and applied warmly on swollen neck of animals.

Cissus quadrangularis L. (Family- Vitaceae, Vernacular name-Hadjod (M))Charud, Voucher Specimen No.- 510/BMV/114

Stems is crushed to prepare paste and applied on fractured bone in cattle. Then the fractured bone is tied with the help of bamboo strips and a piece of cloth. Stems crushed and mixed with Jawar flour and the bolus is fed to animals for healing the bone in bone fracture.

Cayratia auriculata: (Wall. ex Wight. and Arn.) Gamble: (Family- Vitaceae, Vernacular name-Randraksh (M)), Uttamsagar, Voucher Specimen No.- 510/BMV/115

Roots crushed and mixed in half litre butter milk given to animals in bloody dysentery. The treatment is given three times a day. Roots crushed and mixed in 1 litre butter milk and after sieving through a piece of cloth is given to animals in diarrhoea.

Buchanania cochinchinesis Roxb. Family- Anacardiaceae , Vernacular name Charoli (M), Nimiya forest, Voucher Specimen No. : 510/BMV/116

Gum resin is used to treat of bone fracture where plaster cannot be tied.

Semecarpus anacardium L. Family- Anacardiaceae, Vernacular name -Bibba (G) Sawalmendha, Voucher Specimen No. : 510/BMV/117

Fruits sandwiched in jawar bread are fed to animals in mouth disease. It is also given as preventive measure in epidemic of mouth disease. Seed oil is applied on hooves of animals with the help of cotton to cure foot diseases. Fruits added in edible oil and warmed. Warmed oil is applied to cotton cloth and tied to stick, this cloth is placed on horn in horn cancer. Warmed seed oil is applied to tail in tail gangrene.

Abrus precatorius L. (Family- Fabaceae, Vernacular name-Gunja (B)), Uttamsagar forest, Voucher Specimen No.- 510/BMV/118

Crushed roots are used to cure cough, cold and pneumonia. Seeds are used against constipation.

Butea monosperma (Lamk.) Taub. (Family- Fabaceae, Vernacular name-Palas (K)) Mallarghat, Pankha, Voucher Specimen No.- 510/BMV/120

Inner bark dried and prepared powder and dissolved in water. Four or five bottles of this decoction are given in dysentery. Bark of roots crushed in cow milk, mixed in 1 litre water. This mixture is given to cure fever of bullocks. When bolus of fodder obstructed in throat, crushed root soaked in ground-nut oil is moved over tongue pulling it outside. Then water is poured over the tongue and relieved. Reddish inner bark of *Butea monosperma* (Lam.) Taub. Bark of *Ventilago denticulatea* Willd, camphor, catechu, chalk are crushed together and seven or eight bottles decoction is prepared in water. The decoction is given for three days in Haematuria.

Mucuna pruriens (L.) DC. (Family- Fabaceae, Vernacular name-Khajkurari (M)) Uttamsagar, Voucher Specimen No.- 510/BMV/122

Tender leaf is fed daily in Pig against lactation.

Clitoria ternatea L. (Family-Fabaceae, Vernacular name-Gokarni (M)) Sawalmendha, Voucher Specimen No.- 510/BMV/123

The root powder is applied locally to scorpion stings.

Cassia fistula L. (Family- Caesalpiniaceae, Vernacular name-Bahawa (B), Amaltas (M), Sarni forest, Voucher Specimen No.: 510/BMV/124

Stem bark is ground with pepper and garlic and mixture is given to cure fever while the fruits used against digestive problem in goats.

Bauhinia racemosa Lam: (Family- Caesalpiniaceae, Vernacular name-Apta (T), Bhosa (G)) Betul, Voucher Specimen No.- 510/BMV/127

Root powder with butter and boiled rice is fed to animals for three days against bone fracture.

Eucalyptus globules Labill. (Family- Myrtaceae, Vernacular name -Nilgiri (T) Ghatbiroli, Voucher Specimen No.- 510/BMV/130

Decoction of leaves applied on worm infected wounds of cattle for killing worms. Warm vapour of Eucalyptus oil is given to animals in cough and cold. Decoction of leaves mixed with water and camphor used to cure dysentery. Eucalyptus oil is used to rub the horn of animals in horn cancer.

Diplocyclos palmatus (L.): Jeffrey: (Family- Cucurbitaceae, Vernacular name-Shivlingi (B)), Amdana, Voucher Specimen No.- 510/BMV/133

Leaves or fruits crushed in butter milk and given to cure ephemeral fever.

Opuntia elatior Mill. (Family- Cactaceae, Vernacular name-Nagphani (K), Phanta (G)) , Ghoradongari forest, Voucher Specimen No.- 510/BMV/134

Stem (Phylloclade) vertically cut into two parts and after heating it on the fire put it on the swelling part of the animals.

Embeia ribes Burm. (Family- Myrsinaceae, Vernacular name-Wawding (B))

Sarni forest, Voucher Specimen No.: 510/BMV/143

Paste of leaves is applied on swollen portion of animals. Decoction of leaves mixed in whey given to cure dysentery. Boiled fruits mixed with water given orally to cure dysentery.

Madhuca longifolia Hamexgmel. (Koen) (Family- Sapotaceae, Vernacular name-Moha (M) Ghoradongri forest, Voucher Specimen No. - 510/BMV/144

Leaves and flowers of *Madhuca indica* J.F. Gmel. and *Tamarandus indica* L. crushed and the decoction is given to goat in fever and bloody diarrhoea. Seeds soaked in juice of *Citrus lemon* L. and then the paste is prepared and applied in eyes in snake bite. Seven to eight fruits are crushed with water and given to animals to cure diphtheria.

Diospyros melanoxylon Roxb. (Family- Ebenaceae, Vernacular name-Temru) Nimiya forest, Voucher Specimen No.: 510/BMV/146

Paste of the unripe fruits is applied over the wounds of cattle for quick healing.

Calotropis procera (Ait.) R.Br. (Family- Asclepiadaceae, Vernacular name-Rui (K), Ghana), Voucher Specimen No.: 510/BMV/150

Latex is applied on tail of animals to cure tail gangrene. It is also used in the treatment of foot and mouth diseases. The leaf decoction mixed with coconut oil is rubbed over the swelling on neck to cure yolk sore. Latex of leaves mixed with butter and applied in eyes to cure corneal opacity. Leaves crushed and the decoction mixed in 125 ml water is given twice a day against tympany. The leaves are crushed with edible oil and the paste is applied on fractured bones.

Pergularia daemia L. (Forssk.) (Family- Asclepiadaceae, Vernacular name-Utarandi (B)), Betul, Voucher Specimen No.: 510/BMV/151

Latex from leaves used in corneal opacity of animals, against lacrimination (watering of eyes). Butter is applied over the fractured part, then the decoction of leaves is rubbed and the animal is kept in standing position for three hours. The treatment is continued for 15 days to join bones. Paste of leaves applied over tail to cure gangrene.

Hemidesmus indicus L. (Family- Periplocaceae, Vernacular name-Kawali (B), Anantmul (T)), Sahapur forest, Voucher Specimen No.- 510/BMV/152

Crushed roots are fed to mulching animals to increase milk yield.

Argyreia nervosa Lour: (Family- Convolvulaceae, Vernacular name-Samudrasok (M)), Gonapur, Voucher Specimen No.- 510/BMV/154

Leaves are fed to animals in rheumatism. Leaves applied over sores and wounds of animals.

Cuscuta chinensis Roxb: (Family- Cuscutaceae, Vernacular name-Amarvel) Prabhat Pattan, Voucher Specimen No.- 510/BMV/155

Decoction of *Cuscuta reflexa* Roxb. Added to the crushed inflorescence of *Mangifera indica* L. or *Ziziphys nummularia* Burm. F. or *Cordia macleodi* Griff. and boiled and poured into the hole created in horn cancer. 2 kg. *Cuscuta reflexa* Roxb. Fed to milch animals orally when they stop milking. It is effective to increase flow of milk. One litre decoction of whole plant is given orally for three days in salivation or to reduce internal heat. Whole plant crushed and mixed with 250 gm butter is given orally if animal shows signs of insecticidal and herbicide poisoning.

Datura metal L: (Family- Solanaceae, Vernacular name-Kala dhotra (M) Wandali), Voucher Specimen No.- 510/BMV/156

Root paste is applied on inflammation of throat. Decoction of leaves used to cure maggotted wounds. Warm paste of leaves mixed with *Curcuma longa* (L.) is applied to the mammary glands to cure mastitis.

Dolichandrone falcata: (Wall. ex DC.) Hassk.: (Family- Bignoniaceae, Vernacular name Medsingi (B)), Nimiya forest, Voucher Specimen No.- 510/BMV/157

Decoction of leaves with whey given in dysentery. Leaves crushed and mixed with 1 litre whey is given thrice a day in black quarter. Leaves are crushed and after sieving through piece of cloth mixed with butter given to animals against dysentery.

Martynia annua L: (Family- Martyniaceae, Vernacular name-Waghanakhi (M) Ranipur, Voucher Specimen No.- 510/BMV/158

100 gm fruits crushed to prepare the powder mixed with water and given twice a day for three days to cure intestinal swelling.

Barleria prionitis L: (Family- Acanthaceae, Vernacular name-Kate Koranti (M) Uttamsagar, Voucher Specimen No.- 510/BMV/159

The decoction of leaves mixed in water and given to animals against diarrhoea. The leaves are mixed with *Plumbago zeylanica* Linn. crushed them together and given with fodder in fever.

Clerodendrum multiflorum (Burm. f.) O. Ktze. Rev. Gen.: Family- Verbenaceae, Vernacular name-Talkal (K), Arni (P), Gonapur, Voucher Specimen No.- 510/BMV/163

Decoction of leaves dropped on worm infested wounds and crushed leaves are also applied to kill worms.

Vitex negundo L: Family- Verbenaceae, Vernacular name-Nirgundi (G), Sambhalu (B), Gonapur, Voucher Specimen No.- 510/BMV/165

Decoction of leaves is poured into ears in snake bite as antidote. The heated leaves are applied on swelling of the legs of cattle. Warmed leaves are tied to the fractured bone.

Lavandula bipinnata: (Roth.) O. Ktze. Rev. Gen: Family- Lamaiaceae, Vernacular name-Bhutmanjri (K), Uttamsagar forest, Voucher Specimen No.- 510/BMV/166

Crushed leaves of *Lavandula bipinnata* (Roth.) O. Ktze. and *Ixora pavetta* Roxb. Given to yield the milk or to promote secretion of milk.

Costus speciosus L: Family-Costaceae, Vernacular name-Wild zinger (N), Foklya forest, Voucher Specimen No.- 510/BMV/174

The root stock against rheumatic pain of cattle. Leaves after warming applied for treatment against inflammation in leg. Paste of the rootstock is applied externally to cure wounds of cattle.

Curcuma pseudomontana Grah: Family- Zingiberaceae, Vernacular names-Ran halad (T), Uttamsagar, Voucher Specimen No.: 510/BMV/175

Decoction of leaves mixed with salt is given to animals with the help of drenching tubes against tympany. Two to three tubes are sufficient to get relief.

Musa rosacea Jacq: Family- Musaceae, Vernacular name-Jangali Kela (B) Fokalya forest, Voucher Specimen No.: 510/BMV/177

Bulb crushed and given to animals against dysentery.

Curculigo orchoides Gaertn: Family- Hypoxidaceae, Vernacular name-Kali musali (T), Uttamsagar forest, Voucher Specimen No.: 510/BMV/178

Tuber rubbed in cow urine and the paste is applied to injury caused by scorpion sting. Tuber powder is applied to maggotted wound of animals.

Dioscorea hispida Dennst: Family- Dioscoraceae, Vernacular name-Kuli Kand (B), Prabhat Pattan forest, Voucher Specimen No.: 510/BMV/179

The tuber is used for cleaning maggot and infested wounds of animals.

Asparagus racemosus Willd: Family- Liliaceae, Vernacular name-Shatavari (G), Sahastramuli (T), Fokalya forest, Voucher Specimen No.: 510/BMV/180

Crushed roots mixed with water given to milch animals to increase milk yield. When milch animals stop milking, crushed roots mixed with salt or cotton seed are fed to animals for secretion of milk.

Gloriosa superba L: Family- Liliaceae, Vernacular name-Kal-lavi (N), Ghat Biroli, Voucher Specimen No.: 510/BMV/182

Decoction of leaves is applied on wounds of animals. Root is rubbed and applied on swelling of neck of cattle. Root powder is dusted on maggots wounds to kill worms. Paste of roots is applied on tumors. If some iron article like nail, wire is pierced into the body of animals then root paste is applied over it to take out the iron article. The root paste is applied on uterus to cure prolapsed uterus. Root paste is applied in eyes as an antidote in snake bite. The root along with jawar bread is fed to animals to get relief from fever.

RESULTS AND DISCUSSION

The traditional knowledge of tribal communities of Betul district has high Ethno veterinary importance. They utilize numerous plants and their various parts viz., roots, leaves, stems and rhizome for various Ethno veterinary practices. During the field survey, Ethno veterinary data of 41- species of plants belonging to 41 genera of 32 families have been collected. Among the documented useful species the families Fabaceae, Caesalpiniaceae, Solanaceae, Cucurbitaceae and Asclepiadaceae is found to be most often used family in the study. The leaves are the predominant part utilized in the treatment of veterinary diseases and most of the plants are used to treat fever in livestock. Decoction, paste, powder and mixture of plants are the common methods employed for the preparation of medicinal plants. Most of the reported Ethnoveterinary medicinal plants are used to treat fever, wounds, bone fracture and dysentery.

Conclusion

Traditional knowledge of plants in many tribal communities is changing because of rapid socioeconomic and cultural changes. This is particularly true in the tribal people in Betul district of Madhyapradesh. Documentation of this knowledge is valuable for the communities and their future generations and for scientific consideration of wider uses of traditional knowledge in treating domestic animals. The low cost and almost no side effects of these traditional preparations with medicinal plants make them adaptable by the local community. The wealth of this tribal knowledge of medicinal plants points to a great potential for research and the discovery of new drugs to cure the diseases of animals. So, further scientific assessment of these medicines for Phytochemical, biological and pre-clinical and clinical studies is, however, greatly needed.

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