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RESEARCH ARTICLE

Ethnoveterinary Medicinal Plants Used by Ethnic and Rural People of Indo- Nepal Sub Himalayan International Border Region of Pilibhit Tiger Reserve (PTR), Uttar Pradesh, India.

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ABSTRACT

Tribal people are inhabiting indifferent locations of Pilibhit Tiger reserve region of Rohilkhand division of Uttar Pradesh state of India. Study area comprises of second largest forest cover among all the districts of Uttar Pradesh. This manuscript provides information on 21 medicinal plants belonging to 17 angiosperm families which are used by different tribal groups and indigenous people for curing various animal diseases. Few of the important medicinal plants are *Achyranthus*, *Datura*, *Polygonum*, *Litsea*, *Bombax*, *Azadirachta* etc. The use of locally growing, wild medicinal plants for curing different animal ailments was observed to be widespread and prevalent in this area.

Keywords: Ethnoveterinary plants, Indo- Nepal International border region, Pilibhit Tiger Reserve

INTRODUCTION

The use of indigenous plants to cure various animal diseases is known as ethnoveterinary. Study area falls under the Indo-Nepal sub-Himalayan region of UP state of India having international border with Nepal on North West periphery while Uttarakhand state on Northern side. District is located between 28^0 54'- 28^0 60' N latitude and 79^0 37'-88^0 27' E longitude at an elevation of 183.870 meter above mean sea level. The sub-Himalayan Terai region of the study area is inhabited by the people of different tribes and indigenous people. They have to depend upon medicinal plants of their surroundings for the treatment of various ailments of domestic and pet animals. The chief objective of this study is identification, documentation and enumeration of ethno veterinary plants used for curing several animal diseases. The predominant tribes of the study area are Tharu, Van Gujjar and Kanjar. Among them Tharu is the major ethnic community. These people are mostly dependent on their generation-long traditional knowledge system for the treatment of their domestic animals and this knowledge has been passing from generation to generation through the words of mouth.

Various workers have contributed their ethno veterinary research findings on different ethnic groups from varied locations of India (Borthakur and Sarma,1996; Bhatt *et.al*, 2001; Mistry *et al*, 2003; Paul and Paul, 2006; Galav *et al*, 2007; Malik *et al*,2009; Vakshasya, 2009; Salam, 2013).

METHODOLOGY

Several visits of the study area were conducted, during last three years (2015-2018), in tribal inhabiting places in the vicinity of forests of PTR region. First-hand Information about the usage of plants in the treatment of animal ailments was collected through personal meetings with tribal heads (mukhiyas) and other experienced rural people of the study area. The information gathered was cross-checked with herbal practitioners (Bharras) and other experienced persons of the community. Plant specimens were collected from the sites and numbered properly for their identification with the help of available taxonomic literature, herbaria and floras etc. (Jain, 1981,2000). The numbered and taxonomically identified plant specimens have been deposited in the departmental herbarium of Upadhi PG College, Pilibhit. Vegetation of the study area comes under the Flora given by Duthie, 1973.Besides, Dixit and Vakshasya (2017) studied the common ethnoveterinary medicinal plants of the sub-Himalayan Terai region of the Rohilkhand division. In the present manuscript an attempt has been made to enlist ethnoveterinary herbal medicines of Indo Nepal sub-Himalayan Terai International border region of Pilibhit Tiger Reserve of UP state of India. The usage and mode of preparation of ethnoveterinary drugs to cure different ailments of animals have been tabulated alphabetically in Table 1.

RESULTS AND DISCUSSION

The results of this study are chiefly based on local interviews with tribal and experienced rural people along with herbal practitioners. During the present ethnoveterinary survey, some very interesting herbal formulations have come into light which are even not mentioned in important published literature.

Some of ethnoveterinary plants which are occurring in the study area have showed remarkable medicinal properties which are very frequently used by ethnic and rural people. Plants often used by them are *Calotropis* procera, *Adhatoda vasica*, *Curcuma amada*, *Achyranthus aspera*, *Azadirachta indica*, *Litsea glutinosa*, etc. These plants would not only be cheap but also biodegradable and therefore eliminate the chance of any possible side effects caused by synthetic drugs. Among the documented indigenous practices of this study foot and mouth disease, indigestion, diarrhoea, fever, conjunctivitis, flatulence, skin diseases and bone fracture are primarily treated with locally growing wild medicinal plants. In the findings of present study different plant parts viz. roots, stem, leaves, tubers, juice etc. are very commonly used in various ethno veterinary treatments (Fig.1). These formulations need further laboratory tests to prove their efficacies and also to develop new veterinary herbal drugs for the sure cure of many animal diseases.

Fig.1. Graphical representation of number of plant parts used in different ethnoveterinary practices.

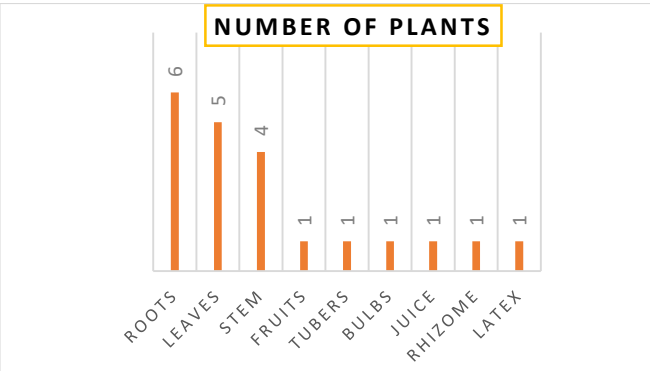

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Table 1 : Showing Mode of Administration of different parts of the plants

Sr. No	Family.	Botanical Name	Local Name	Part Used	Mode of Administration
1.	Acanthaceae	*Adhatoda zeylanica* Medic.	Vasaka	Roots Flowers	Root bark decoction and black pepper paste (5:2) is given for safe discharge of foetus. Fumes of burning flowers is used to treat cough and cold
2.	Amaranthaceae	*Achyranthes aspera* L	Chirchita	Roots	Roots are tied on the horns of buffaloes for easy and safe delivery as Touch Therapy. Fresh roots are placed in vagina of the buffaloes for expulsion of the placenta
3.	Anacardiaceae	*Buchnania lanzen* Spreng	Kath Bilwa	Leaves	Fresh leaves decoction used to treat bloody dysentery and diarrhoea
4.	Apocynaceae	*Alstonia scholaris* Linn.	Chatwaan	Latex	Decoction of latex with black pepper is given for expulsion of intestinal worms
5.	Apocynaceae	*Carissa opaca* Stapf ex. Hains	Jangli Karonda	Roots	Root powder is placed on worm infested parts.
6.	Bignoniaceae	*Oroxylum indicum* (L)Vent	Sauna	Stem	Stem bark paste is applied over fractured bones.
7.	Bombacaceae	*Bombax ceiba* L	Simra	Stem	Stem bark decoction cures diarrhea and dysentery
8.	Caesalpiniaceae	*Caesalpinia crista* Linn	Khaja	Root	Root decoction with black pepper paste is given for expulsion of placenta
9.	Caesalpiniaceae	*Cassia fistula* Linn	Sinara	Fruit	Fruit powder, mustard oil and turmeric powder (4:1:2) is given to cure intestinal worms.
10.	Dioscoreaceae	*Dioscorea bulbifera* Linn	Belarkanda	Tubers	Paste of tubers with long pepper decoction is given in foot and mouth disease.
11.	Euphorbiaceae	*Ricinus communis* Ben.	Andaua	Leaves	Poultice of green leaves is applied over ulcers. Oil is commonly used in constipation.
12.	Lauraceae	*Litsea glutinosa* (Lour) CB Robbins	Maida	Stem Bark	Fresh stem bark is applied externally over the fractured bones.
13.	Leeaceae	*Leea asiatica* (L) Ridstate	Golarkandra	Roots	Root paste is applied over the septic wounds
14.	Leeaceae	*Leea macrophylla* Roxb	Lathigaja	Leaves	Paste of fresh leaves bandaged externally over the fractured bones
15.	Liliaceae	*Allium cepa L*	Pyaz	Bulbs	Extract of bulb and herbs are often used in flatulence and dysentery
16.	Liliaceae	*Asparagus racemosus* Willd	Satawar	Roots	Roots are given as vulnerary for diarrhea and dysentery
17.	Malvaceae	*Abutilon indicum* (L) Sweet	Kanghi	Leaves	Fresh leaves paste is applied over lice affected parts of the body.
18.	Meliaceae	*Azadirachta indica* A. Juss.	Neeba	Leaves, Bark	Decoction of leaves and bark is given to baby animals for the expulsion of intestinal worms. Paste of leaves is applied to wounds to keep away flies.
19.	Mimosaceae	*Albizzia lebbeck* (L) Benth.	Sain	Stem	Stem bark decoction is applied externally on cattle sores.
20.	Papaveraceae	*Argemone mexicana* L	Kateri	Juice	Green plant juice with onion bulb juice is applied externally for killing parasitic insects.
21.	Zingiberaceae	*Curcuma amada* Linn	Amahaldi	Rhizome	Dried rhizome paste is applied over fractured bones.