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Ethnoveterinary Practices in Mallenahalli of Chikmagalur Taluk, Karnataka

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Abstract

An Ethnoveterinary survey was carried out on the indigenous knowledge of tribes and folk medicine practitioners of Mallenahalli village, Chikmagalur Taluk, Karnataka. The study was conducted during 2011 and 2012 using open ended questionnaires, frequent field visits and interviews with tribal practitioners Ethnomedicinal information. A total of 52 medicinal plant species belonging to 32 families that have been recorded from the tribal practitioners to treat against anthrax, foot and mouth diseases, bloat conjunctivitis, dysentery, fractures, snake bite, rot tail, Kasanoor forest disease etc. The present study may provide the traditional knowledge of tribes and local healers to cure cattle diseases. Further studies are needed for the Phytochemical and Pharmaceutical analysis of drugs and to conserve medicinal plants for future use.

Keywords: Ethnoveterinary, Tribes, medicinal plants, indigenous knowledge, Mallenahalli.

1. Introduction

Ethnoveterinary practices are the community based indigenous knowledge and the use of medicinal plants and procedures applied for their preparation was transmitted from generation to generation. It has been reported that as many as 70% (90% in some communities) of the world population continue to rely mainly on their own localized ethnomedicine for personal as well as veterinary healthcare^[1].

Traditional medicinal plants have several advantages, they are affordable and easily accessible^[2]. The South-Western part of Mallenahalli is in the state of Karnataka is endowed with rich and diverse plant wealth. Most of the population largely depends on plant resources growing in their surroundings to meet their requirements including Ethnoveterinary herbal medicines.

The present study was designed to document on the traditional knowledge of plants used by tribes and local healers of Mallenahalli to treat veterinary diseases.

1.1 Study Area

Mallenahalli is situated around 20 km away from Chikmagalur Taluk, Karnataka. It is surrounded by the mountain ranges of Western Ghats having a moderate and congenial environment for the growth of medicinal plants. The study area lies between 12° 54' 42'' and 13° 53' 53'' north latitude and 75° 04' 46'' and 76° 21' 50'' east longitude. The temperate ranges from 15 – 25 °C, average humidity of 60-80%, and the rainfall ranges from 180-250 cms. The soil is of black mixed red having average water percolation. The forest is of wet deciduous where the three strata of flora viz. Grass herbs, thorny shrubs and woody trees are seen. The village is covered by mountain ranges viz. Mullaingiri, Dattapeet, Seethalyanagiri etc.

2. Materials and Methods

Field data collection was undertaken from 2011-12 in all the seasons. The main objective of the study were to explore traditional knowledge of animal illness and Ethnoveterinary practices of livestock illness treatment from tribes and folk medicine practitioners of Mallenahalli village, Chikmagalur Taluk, Karnataka through general conversations and questionnaires. Details of medicinal plants used, mode of treatment, methods of preparation and types of administration were documented by interacting with them as well as through direct observations. The information got from the tribals was recorded in field notebooks and compared with the previously reported literatures^[3, 4, 5, 6]. The plants which are used to cure cattle disease were collected during the survey by wandering with the medicinal practitioners who knows the plants very well.

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The collected plant specimens were pressed and dried at room temperature. The dried material was then disinfected using HgCl₂ and absolute alcohol. After that, the plants were mounted on the herbarium sheets. For authentic identification, different Flora and Monographs have been consulted [7]. Identified voucher specimens were deposited in the herbarium Department of Botany, Bangalore University. The obtained medicinal plants were provided correct Nomenclature followed by vernacular name, family, local name, parts used and mode of utilization. The table in the appendix gives an overview of the Ethnoveterinary practices of the study area.

3. Results and Discussion

The present investigation could document a total of 52 medicinal plant species belonging to 32 families that have been used by Mallenahalli tribes and folk medicine practitioners used in the treatment of dysentery, fever, snake bite, leg and horn fractures, worms, peptic ulcers, bloat, foot and mouth diseases, anthrax, mastitis etc (Table. 1). Fig. 1

shows different plant parts used for mode of administration, among these leaves (45.26%) followed by fruits (18.86), seeds (16.98%) and least percentage of bulb, stem and Latex (1.88%). Medicines are prepared in the form of juice, powder, decoction and paste, while majority of them are in combination with other plant parts. Animal product like butter milk, curd, cow dung, cow's milk etc. and few minerals like salt, amorphous white stone powder, camphor, jaggery, tender coconut, paddy husk etc. are also used along with medicinal plants. Similar observations are reported by Gaur *et al.* [8] for treating livestock by the Gujjar community of Sub-Himalayan tract. For each species the following ethnobotanical information were provided: the botanical name, family, vernacular name, plant parts used, mode of use, dose and duration are given in the Table. 1. Ganesan *et al.* [4] and Tiwari and Pande [9] reported the similar observations for the treatment of plants for Ethnoveterinary healthcare practices in southern districts of Tamil Nadu and South-eastern part of Chamoli district.

Table 1: General characteristics and Ethno veterinary medicinal uses of Plants by the Mallenahalli village medicine practitioners for different types of cattle diseases.

Sl. No.	Botanical name	Family	Common name	Parts used	Drug preparation and mode of utilization
Plants used against Anthrax					
1	<i>Azima tetraacantha</i>	Salvadoraceae	Uppina mullu	Leaves	8gms of leaves of <i>Azima tetraacantha</i> , the bark of East Indian Walnut, 8gms of pepper leaves, 124gms of black pepper and 12gms of garlic, all these are grinded and these mixture is mixed with boil water and feeded.
2	<i>Albizia lebbek</i>	Mimosaceae	East Indian Walnut	Bark	
3	<i>Piper nigrum</i>	Piperaceae	Pepper	Leaves	
4	<i>Allium sativum</i>	Liliaceae	Garlic	Bulbet	
Plants used against Foot and Mouth diseases					
1	<i>Carica papaya</i>	Caricaceae	Papaya	Fruit	The fruit is grinded and the paste has to be feeded about 42 days
Plants used against Bade Siros's					
1	<i>Limonia acidissima</i>	Rutaceae	Wood apple	Fruit and Leaves	The whole wood apple and it leaves are grinded and mixture was mixed in tender coconut and feeds to the diseased cattle.
Plants used against Bloat					
1	<i>Alangium salvifolium</i>	Alangiaceae	Sage leaved Alangium	Root bark leaves	50gms root bark was grinded and mixed with ragi malt has to be given 2 times per day and is continued for 2-3 days
Plants used against Cataract					
1	<i>Rubia cordifolia</i>	Rubiaceae	Indian madder	Leaves	Amorphous white stone powder was first applied on the eye which is suffered from pain. Later the leaf juice is applied once in a day on the same eye. It has to continue for 3 days.
Plants used against Conjunctivitis					
1	<i>Leucas aspera</i>	Lamiaceae	White head nuttle	Leaves	5 spoon of <i>Leucas aspera</i> juice, 12gms of gaanja powder and camphor these materials are grinded and that mixture is spread over the eye.
2	<i>Cannabis sativa</i>	Cannabinaceae	Gaanja	Leaves	
Plants used against Dislocation					
1	<i>Coccinia indica</i>	Cucurbitaceae	Little gourd	Leaves	The leaf juice was poured on the nose of the cattle.
Plants used against Dysentery					
1	<i>Abutilon indicum</i>	Malvaceae	Country mato	Leaves	About 5-6 stone apple are warmed and separate the inner pulp, this pulp is mixed with the curd and given to feed.
2	<i>Eluecina corocona</i>	Poaceae	Raagi	Seed powder	
3	<i>Oryza sativa</i>	Poaceae	Paddy	Paddy husk	
4	<i>Aegle mermelos</i>	Rutaceae	Stone apple	Fruit	
Plants used against Enterotoxaemia					
1	<i>Coccinia grandis</i>	Cucurbitaceae	Little gourd	Leaves	The leaf juice was extracted and used
Plants used against Endometritis					
1	<i>Tagetes erecta</i>	Fabaceae	Swamp pea	Leaves	The leaves was grinded with milk, feed twice a day about 40 days
Plants used against Fractures					
1	<i>Oryza sativa</i>	Poaceae	Paddy	Bran	Apply <i>Polygonum</i> leaves on brokened legs and tie the fractured part with gunny bag coated with boiled paddy husk and raagi flour then cover the area with bamboo sticks.
2	<i>Eleusine coracana</i>	Poaceae	Raagi	Flour	
3	<i>Polygonum hydropiper</i>	Polygonaceae	Polygonum	Leaves	

Plants used against Fly Infestation					<i>Tagetes</i> plant leaves juice was extracted and <i>Azadiractha</i> plant oil was applied on the wound for 4-5 days.
1	<i>Tagetes erecta</i>	Asteraceae	Mari gold	Leaves	
2	<i>Azadiractha indica</i>	Meliaceae	Neem	Oil	
Plants used against Horn Fractures					Cow dung cake powder and flour red soil are placed into the horn, the raagi flour is warmed and it has to be spread over the cotton cloth and these cotton cloth is tied over the horn.
1	<i>Eleucina corocona</i>	Poaceae	Raagi	Seed	
Plants used against Fever and Cough					5-9 <i>Cynodon dactylon</i> grass, flowers of jasmine, white rose, grape jasmine and the leaves of <i>Moringa oleifera</i> about 10 gms, mixed up and feeded.
1	<i>Cynodon dactylon</i>	Poaceae	Creeping grass	Grass	
2	<i>Jasminum sp.</i>	Oleaceae	Jasmine	Flower	
3	<i>Rosa alba</i>	Rosaceae	Rose	Flower	
4	<i>Moringa oleifera</i>	Moringaceae	Drumstick	Leaf	
5	<i>Ervatamia coronaria</i>	Apocynaceae	Grape jasmine	Flower	
6	<i>Ruta graveolens</i>	Rutaceae		Leaves	
7	<i>Centratherum anthelminticum</i>	Asteraceae	Wild cumin	Seed	The powder of wild cumin seed is mixed with boiling water along with the powder of jaggery and prepare like a coffee and feeded.
Plants used against Kasanoor Forest disease					The nose length is measured through the neem stick and pricked in to the nose. 50gm of <i>Leucas aspera</i> leaf juice is poured in to the nose and massage the surface of the nose. Garlic, coriander, onion and chilly are grinded and that juice is feeded through drencher.
1	<i>Azadiractha indica</i>	Meliaceae	Neem	Stem	
2	<i>Leucas aspera</i>	Lamiaceae	White head nuttle	Leaves	
3	<i>Allium sativum</i>	Liliaceae	Garlic		
4	<i>Coriandrum sativum</i>	Apiaceae	Coriander	Bulb lets, seeds	
5	<i>Allium cepa</i>	Liliaceae	Onion	Bulb	
6	<i>Capsicum annum</i>	Solanaceae	Chilly	Fruit	
Plants used against Lice Infestations					The leaves are grinded and this paste spread over the body
1	<i>Annona squamosa</i>	Annonaceae	Custard apple	Leaves	
Plants used against Maggot Infestation					The seeds are grinding and that paste spread over the wound
1	<i>Annona squamosa</i>	Annonaceae	Custard apple	Seeds	
Plants used against Mastitis					The leaf juice of lemon grass is mixed with lemon juice and the solution is spread over the udder.
1	<i>Citrus aurantifolia</i>	Rutaceae	Lemon	Fruit	
Plants used against Peptic Ulcers					The grinded camphor's mixed with oil of sandalwood. This was spread over the peptic ulcer.
1	<i>Santalum album</i>	Santalaceae	Sandalwood	Bark oil	
Plants used against Rabbis					The seed power of the plant mixed with milk and feeded as fast as before feeding the mixture must be strained and gives up to 1-2 times.
1	<i>Erythrina suberosa</i>	Fabaceae	-	Seed	
Plants used against retention of Foetal Membrane					The leaf juice of <i>Argyreia cuneata</i> is grinded with seed of coffee and feeded with rice.
1	<i>Argyreia cuneata</i>	Convolvulaceae	Purple morning clori	Leaves	
2	<i>Coffea arabica</i>	Rubiaceae	Coffee	Seeds	
3	<i>Oryza sativa</i>	Poaceae	Paddy	Millets	
Plants used against Render pest					100gms of leaf juice has to be given for 3 days
1	<i>Cassia fistula</i>	Caesalpinaceae	Indian laburnum	Leaves	
Plants used against Stomach Pain					50gms of leaf juice is given for 3 days as one time per time.
1	<i>Achyranthes aspera</i>	Amaranthaceae	Priclych of flower	Leaves	
Plants used against Snake Bite					50gms of leaf juice of asthanatica swallow wort is given to feed.
1	<i>Leucas aspera</i>	Lamiaceae	White head nuttle	Leaves	
2	<i>Calotropis procera</i>	Asclepiadaceae		Root	
3	<i>Tylophora indica</i>	Asclepiadaceae	Asthanatica swallow wort	Leaves	
Plants used against Throat Cancer					Two fruit of <i>Sapindus</i> and a fruit of acacia are taken and both fruit juice are given to feeding
1	<i>Sapindus laurifolia</i>	Sapindaceae	Soap nut tree Soap nut	Fruits	

			powder		up to 3 days. By the help of <i>Azema</i> plant beat to the throat of cattles about 3 times. Fumes of bark scaly leaves and seeds of those plants given to those diseased cattle.
2	<i>Acacia cominna</i>	Leguminosae	Needle bush	Fruits	
3	<i>Azima tetraacantha</i>	Salvadoraceae			
4	<i>Santalum album</i>	Santalaceae	Sandal wood	Whole plant	
5	<i>Allium sativum</i>	Liliaceae	Garlic	Scaly leaves	
6	<i>Piper nigrum</i>	Piperaceae	Pepper	Bark	
Plants used against Three Day Sickness					
1	<i>Ricinus communis</i>	Euphorbiaceae	Castor	Seeds	Feed the cattle with 150ml of castor oil and feed the juice extract of betel leaves, ginger, pepper, clove, garlic, seeds of bonduct nut, mustard wasp nest.
2	<i>Piper beetle</i>	Piperaceae	Betel vein	Leaves	
3	<i>Zingiber officinalis</i>	Zingiberaceae	Ginger	Rhizome	
	<i>Piper nigrum</i>	Piperaceae	Pepper	Seeds	
4	<i>Syzygium aromaticum</i>	Myrtaceae	Clove	Flower bud	
5	<i>Allium sativum</i>	Liliaceae	Garlic	Bulbet	
Plants used against TRP (Traumatic Reticulum Faecal output Pericarditis)					
1	<i>Achyranthes aspera</i>	Amaranthaceae	Priclych of flower	Leaves	150gms of leaf juice is mixed with then white colour stone powder and is given for one time.
Plants used against Uterine Vaginal Prolapse					
1	<i>Ficus tinctoria</i>	Moraceae	Demon tree	Leaves	50gms of <i>Ficus</i> leaves, 50 gms of <i>Biophytum</i> leaves and 100 gms of <i>Diospyros</i> leaves are grinded and feeded.
2	<i>Diospyros montana</i>	Ebenaceae		Leaves	
3	<i>Biophytum sensitivum</i>			Leaves	
Plants used against Uterine Bleeding					
1	<i>Sesbania grandiflora</i>	Fabaceae	Swamp pea	Leaves	The leaves of swamp pea is grinded with the milk, feed twice per day for about 40 days.
Plants used against Worms (Intestinal worms)					
1	<i>Coleus amboinicus</i>	Lamiaceae	Indian borage milk/ butter	Leaves	The leaves of Indian borage are grinded with butter/ milk and that paste is spread over the body.
Plants used against Fever					
1	<i>Ficus religiosa</i>	Moraceae	Peepal tree	Bark	The bark of Ficus is kept in curd and crushed and strained and the whole mixture is feeded about 2 glass/ time.
Plants used against Leg Fracture					
1	<i>Dodonaea viscosa</i>	Sapindaceae	The switch borel	Leaves	The leaves of the Dodonaea plant about 50gms are tied to the fractured leg about 30 to 40 times.

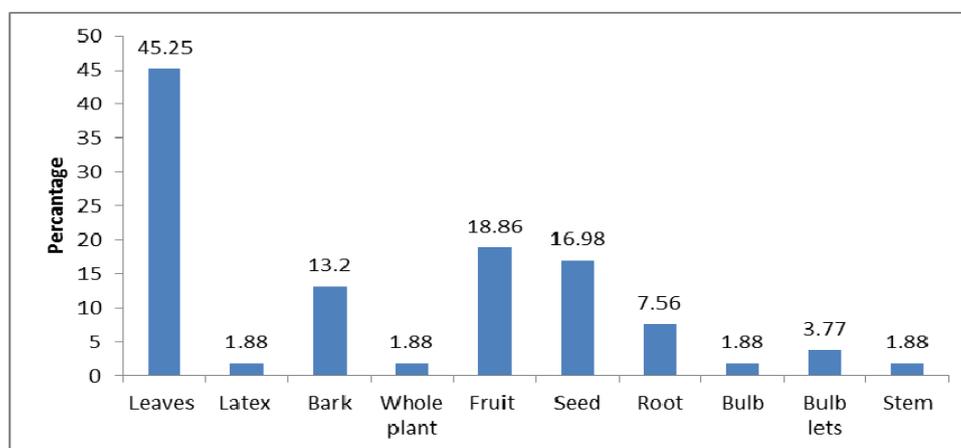


Fig 1: Different plant parts used in Ethnoveterinary medicine by Mallenahalli practitioners

During the field studies, it has also noted that the occurrence and distribution of some documented plants become rare and even they are going to be endangered in the future. Therefore, the people of the study area should provide special protection, conservation as well as germplasm preservation of these plants at their own level, through NGOs or with the help of governmental agencies.

4. Conclusion

The present study recorded 32 Ethnoveterinary ailments and identified major and most common diseases. For acute life threatening infections and epidemics modern medicine such as antibiotics remain the first choice but for common and chronic

conditions like skin diseases, worms, wounds, diarrhoea etc. Ethnoveterinary medicine remains the choice in remote areas. Hence it is of utmost important to document the empirical knowledge of the medicine practitioners and sustainable utilization of the plant resource.

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