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### RESEARCH ARTICLE

## ETHNOVETERINARY KNOWLEDGE OF FOLKLORE PEOPLE IN KAPPATHGUDDA REGION OF GADAGA DISTRICT, KARNATAKA, SOUTH INDIA.

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### Abstract

An ethnoveterinary survey was carried out among the folklore people of Kappathgudda region of Gadaga district, Karnataka state, India in the year 2014. Ethno-botanical uses of 33 medicinal plants belonging to 23 families have been documented in Kappathgudda region, for their interesting therapeutic properties for various veterinary ailments. Of these major families are Fabaceae (4 species), Rutaceae (3 species), Celastraceae and Sapindaceae (2 species each) and, most were trees and leaves contributed mainly to the plant part used for medicine preparation. This report includes ailments, botanical name of the plant, local name, family of the plant, habitat, part used and details about its usage in the animal treatment.

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### Introduction:-

India is well known for significant geographical diversity, which has favored the formation of different habitats and vegetation types. India is enriched with 15 per cent (3000-3500) out of 20,000 medicinal plants all over the world. About 90 per cent of these are found growing wild in different climatic regions of the country (Chopra and Nayar, 1956). India is also home to many languages, cultures and beliefs, which have in turn contributed to high diversity of traditional knowledge. Large populations in India still rely on traditional herbal medicine (Dubey, 2004). In India, it is reported that traditional healers use 2500 plant species and 100 species of plants serve as regular sources of medicine (Pei, 2001). Ethno-botanical knowledge has been documented from various parts of the Indian sub-continent (Das and Tag, 2006; Prasad and Pandey, 1993; Udhyan *et al.*, 2005). India has got great traditional knowledge in the field of ethnoveterinary medicines and practices, but the process of modernization, this knowledge is vanishing very rapidly (Devendrakumar and Anbazhagan, 2012). Several medicinal herbs are flourishing in the state, which has been in constant use by inhabitants in serving to cure the ailments of human and livestock as ethnomedicine (Bharati *et al.*, 2009; Balakrishnan *et al.*, 2009). Plants have been used in traditional medicine for thousands of years and herbal medicines are much in demand throughout the world. The knowledge of medicinal plants has been accumulated in the course of many centuries based on different medicinal systems such as Ayurveda, Unani and Siddha.

In Karnataka, many tribal groups and rural districts have been studied to document the ethno-medicinal value of plants used by them (Harsh 2002, Parinitha 2005, Prakasha 2006). Studies have been carried out in the Chikmagalur, Chitradurga and Davanagere (Shivanna 2008; Hiremath 2010; Ramachandra 2012; Shivakumar and Parashurama, 2015; Raju and Parashurama, 2015; Vinay *et al.*, 2015). Comprehensive detailed information on ethno-botanical

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knowledge in Karnataka, that are lacking to certain areas (Bhandari *et al.*, 1995, Parinitha *et al.*, 2004, 2005) and particularly it is so in Kappathgudda of Gadaga district of Karnataka. Hence, an attempt has been made to collect and document the ethno-botanical knowledge of local herbal healers of different communities in the Kappathgudda region of Gadaga district. The main objective of this ethno botanical investigation is the identification and documentation of various plants, used for traditional veterinary uses among the folklore ethnic group from Kappathgudda region. The study also includes documentation of the part of the plant used, method of preparation and its dosage for medical purposes.

### Materials and Methods:-

Kappathgudda region of Gadaga district located in central part of Karnataka state and lies between 75° 16" to 76° 03" E longitude and 14° 56" to 15° 53" N latitude. The Gadaga district is spread over an area of 4656 sq.km with a forest area of 326.14 sq.km. Vegetation – Hilly, deciduous, semi evergreen, scrubby types of forest supporting various species of flora and fauna. Rainfall - 500 to 650 mm; the minimum temperature recorded during winter is 18°C (during December) and highest is 42.5°C. In Kappathgudda region the folklore people are giving medicine from about 1000 years ago. There are more than 5 families which are following this method and one of the family member should dedicate their lives to spiritual pursuits.

In present work, the data collected by these folklore families by discussing with them and roaming all around the hills of Kappathgudda region along with photography and collection of medicinal parts of plants. Before going to the field survey, a rapport was established with the well-known persons of the village. Experienced people and knowledgeable elder folklore people of the study area were contacted for collecting the information on their knowledge of medicinal treatment against veterinary ailments. Plants were photographed, collected and identified by using the Flora of Madras Presidency (Gamble *et al.*, 1935) and confirmed by eminent taxonomists and

### Results and Discussion:-

Kappathgudda is a sacred grove, where so many folklore families are found all around the hilly regions. In the present study, 33 medicinal plant species used for treatment of livestock ailments were collected. The presence of such a these medicinal plant species and associated ethno-medicinal knowledge in the district compared to number of species reported for other regions in Karnataka (Harsha, 2004; Bhandary *et al.*, 1995, 1996) indicates that the area has good diversity of medicinal plant species including a rich source of indigenous knowledge. Ethno-botanical survey for the treatment of veterinary ailments, about 33 plants species belonging to 25 families have been documented in the present study, given in Table 1.

**Table. 1:-** List of plants used by folklore people in Kappathgudda region for ethno-veterinary purposes.

Sl no.	Ailment	Botanical name/Local name/ Family	Habitat and Parts used	Mode of usage
1	Bone fracture	<i>Limonia acidissima</i> L. Belada mara (Rutaceae)	Tree Bark	Bark is crushed finely, applied on fracture region, and tied with a clean cloth with adjustable support.
		<i>Zornia gibbosa</i> Spanoghe Harada hachhaga (Fabaceae)	Herb Leaves	Leaves are mixed with Garlic, Pepper, sheep milk and crushed to make paste, and then it was made into small pills, taken orally one pill once in a day, for 7 days.
2	Foot and mouth disease (Precautionary)	<i>Semecarpus anacardium</i> (L.f.) Guddegeru, Kerubeeja (Anacardiaceae)	Tree Seeds	Seeds are given orally, along with roti or bread.
		<i>Ailanthus triphysa</i> (dennst.) Alston Maddi gida (Simaroubaceae)	Tree Bark	One handful leaves of <i>A. malabarica</i> , <i>C. sativum</i> , <i>V. negondo</i> , <i>A. indica</i> is ground to form a paste. This is mixed with beetroot juice and given orally once a day for 5 days
3	Fever	<i>Capparis moonii</i> (Wight) Totlugida (Capparaceae)	Climber Leaves	Leaf paste mixed with Pepper, Garlic, <i>P. beetle</i> leaf given orally for 4days.
4	Corneal opacity	<i>Abrus precatorius</i> (L.)	Climber	Root is crushed finely with Lemon

	and Eye problems	Gulagangi (Fabaceae)	Root	extract and applied to eyes.
		<i>Maytenus emerginata</i> (Willd.) Tandrasi. Tandarasi mara (Celastraceae)	Tree Leaves	Leaves and salt are chewed and drop into the eyes.
		<i>Solanum indicum</i> L. Kadu badane (Solanaceae)	Herb Fruit	Fruits extract is applied into the eyes.
5	Weakness	<i>Cardiospermum halicacabum</i> L. Bekkina toraduballi (Sapindaceae)	Climber Whole plant	Plant is crushed finely and mixed with Garlic, Pepper and <i>Piper beetle</i> given orally along with buttermilk, until cure.
		<i>Pergularia daemia</i> (Forsskal) Chiov. Kuntagyan balli (Asclepiadaceae)	Climber Leaves	Leaf paste is mixed with Garlic, Pepper, <i>Piper beetle</i> and given orally along with buttermilk, until cure.
		<i>Maytenus rothiana</i> (Walp.) Ankli mara (Celastraceae)	Tree Bark	Bark extract is mixed with Garlic, Pepper, <i>Piper beetle</i> and given orally along with buttermilk, until cure.
		<i>Holoptelea intergrifolia</i> Roxb.) Tapsi mara (Ulmaceae)	Tree Bark	Oil extracted from the bark and, is applied to nose and legs.
6	Intestinal worms	<i>Andrographis paniculata</i> (N.Burman) Nelabevu, (Acanthaceae)	Herb Leaves	Leaf paste is mixed with water and given orally once in a day for 2 days.
		<i>Clerodendrum inerme</i> (L.) Vishamadari (Verbenaceae)	Shrub Leaves	Leaf paste is mixed with water and given orally once in a day for 2 days.
7	Burnt wounds	<i>Albizia amara</i> (Roxb.) Boivin Tugli gida (Mimosaceae)	Tree Leaves	Leaves are burnt to make ash, and then mixed with coconut oil, applied on burnt region until cure.
8	Snake bite	<i>Pongamia pinnata</i> (L.) Pierre Honge mara, honge (Fabaceae)	Tree Leaves	Leaf paste is mixed with Pepper, Garlic, <i>Piper beetle</i> , crushed and given orally along with buttermilk immediately after snake bite.
9	Dog bite, Snake bite	<i>Strichnous naxvomica</i> L. Nanjina beru	Climber Root	Root is mixed with Garlic, Pepper, <i>Piper beetle</i> and crushed finely and add lemon extract then applied on bite region and also given orally.
10	Dysentery	<i>Maytenus emerginata</i> (Willd.) Tandrasi. Tandarasi mara (Celastraceae)	Tree leaf	Leaf paste is mixed with butter milk and given orally.
11	Wound with maggots	<i>Tagetes erecta</i> L. Chendu hoo gida (Asteraceae)	Shrub Leaf	Leaf paste is mixed with lime stone and applied on wounds.
12	Foot infection	<i>Gardenia latifolia</i> Aiton Bikke mara, adavi bikke (Rubiaceae)	Tree Leaf	Leaves are dried, mixed with Garlic, crushed to make paste, then applied on affected region.
13	Indigestion or stomach problems	<i>Punica granatum</i> L. Dalimbe (Punicaceae)	Tree Leaf	25g of Leaf paste is mixed with butter milk and given orally once in a day for one weak
14	Ectoparasites	<i>Azardirachta indica</i> (A.Juss.) Bevina mara (Meliaceae)	Tree Seed	Seed extract is applied all over the body.

15	Less grazing	<i>Cannabis sativa</i> L. Bhangi gida, ganja gida. (Cannabinaceae)	Herb Leaves	Leaves are mixed with tobacco and given orally along with bread or roti or fresh green grass.
16	Body pain	<i>Leucas aspera</i> (Willd.) Link <i>Tumbe gida</i> (Lamiaceae)	Herb Leaf	Leaves are ground with Pepper and made into paste. Paste is applied over painful area, daily twice for 2-3 days.
17	Cuts	<i>Sida acuta</i> (Burm F.) Bheemana kaddi (Malvaceae)	Shrub Leaf	Leaf paste is mixed with Neem oil and applied on cut wounds
18	Sore throat	<i>Butea monosperma</i> (Lam.) Muthugada mara, muthuga. (Fabaceae) <i>Opuntia stricta</i> (Haw.) Dabbugalli (Cactaceae)	Tree Bark  Shrub Fruit	Bark of <i>Butea monosperma</i> is crushed and the extract is given orally along with fruits of  <i>Opuntia stricta</i> and Clove powder for 7 days.
19	Poor secretion of milk	<i>Phoenix sylvestris</i> (L.) Eechalu mara (Aracaceae) <i>Olaix scandens</i> (Roxb.) Nakkare, nakkarakki (Olacaceae) <i>Asperagus racemosus</i> (Willd.) Shatavari (Liliaceae)	Tree Copra  Shrub Leaf  Climber Leaf and root	Copra of the bark is given orally  Leaves are given orally.  Equal quantity of leaves and roots crushed in water and given to cattle orally, daily once for 3-4 weeks.
20	Vasoconstriction	<i>Abrus precatorius</i> (L.) Gulagangi (Fabaceae)	climber Seed	Seeds are mixed with Jeera, Clove, Almond and Camphour and crushed, given orally once in a day for a week.
21	Breeding problems	<i>Dodonaea viscosa</i> (L.) Jacq. Bandarika (Sapindaceae) <i>Murraya koenigii</i> (L.) Gandhabevu, karibevu (Rutaceae)	Shrub Seed  Tree Leaf	Seed powder is given orally along with water.  Leaves are given orally for 2-3 weeks.
22	Wound in shoulder	<i>Chloroxylon swietenia</i> DC. Masivaala, mashuwala (Rutaceae)	Tree Bark	Bark is burnt to make ash, mixed with butter and applied on affected area.
23	Breast feeding problems.	<i>Cissus quadrangularis</i> L. Mangroli (Vitaceae)	Climber Stem	Stem is crushed finely and applied to the breast.

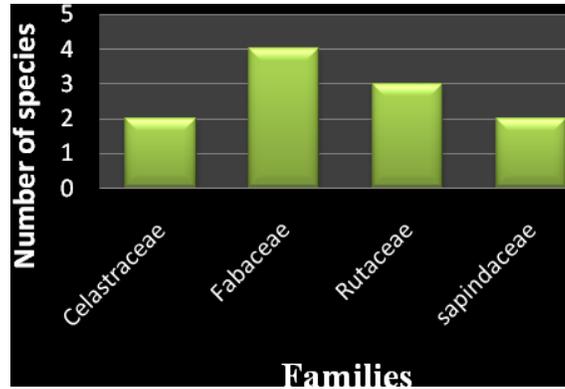
Some of the noteworthy reveals in Kappathgudda region of Gadaga district, not reported by earlier workers for such puposes are- *Zornia gibbosa*, *Limonia acidissima* for bone fracture, *Semecarpus anacardium*, *Ailanthus triphysa* for foot and mouth diseases, *Abrus precatorius*, *Maytenus emerginata* for corneal opacity, *Phoenix sylvestris*, *Asperagus racemosus*, *Olaix scandens* for poor secretion of milk, *Chloroxylon swietenia* for wound in shoulder, *Cissus quadrangularis* for breast feeding problems, *Dodonaea viscosa* for breeding problems, *Abrus precatorius* for eye related problems and vasoconstriction.

On analysis of families v/s number of species among the most represented families for the treatment of veterinary ailments in Kappathgudda region of Gadaga district among 33 plant species, 4 species were from Fabaceae, 3 from Rutaceae, 2 species each from Celastraceae and Sapindaceae. The family Fabaceae constituted the largest number or proportion in treating of veterinary ailments (Fig.1). Analysis of growth forms showed that in present work for the treatment of veterinary diseases and ailments among 33 medicinal plant species 47% were trees followed by 19% climbers, 19% shrubs and 15% herbs. The tree species constituted the largest number or proportion in treating of veterinary ailments (Fig.2). The most commonly used plant part to prepare the herbal remedies was leaf followed by

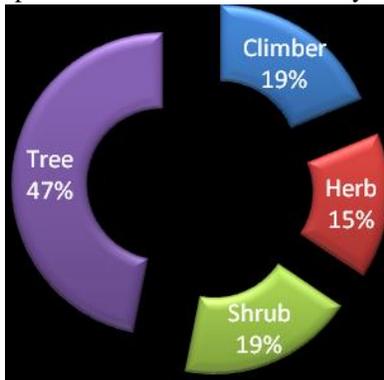
bark, seed, root, fruit, stem, whole plant. In many case, more than one part of the same plant species is used in the treatment of different ailments. The use of plant material can also depend on its availability. The leaves and bark are always available and most of the healers prefer these parts for preparing herbal formulation (Fig.3). The less prefer parts of the plants were flower because they have short time of availability.

The present study revealed that the traditional herbal healers of different communities in Kappathgudda region have very good knowledge of medicinal plants, which could be used for treating a variety of diseases and disorders of veterinary animals. Documenting of the traditional knowledge of treatment with herbal formulations by folk herbal healers will help in the utilization of the locally available alternative healthcare systems in the larger interest of the society. A large number of ethnoformulations used for different ailments in the study area are new and note-worthy.

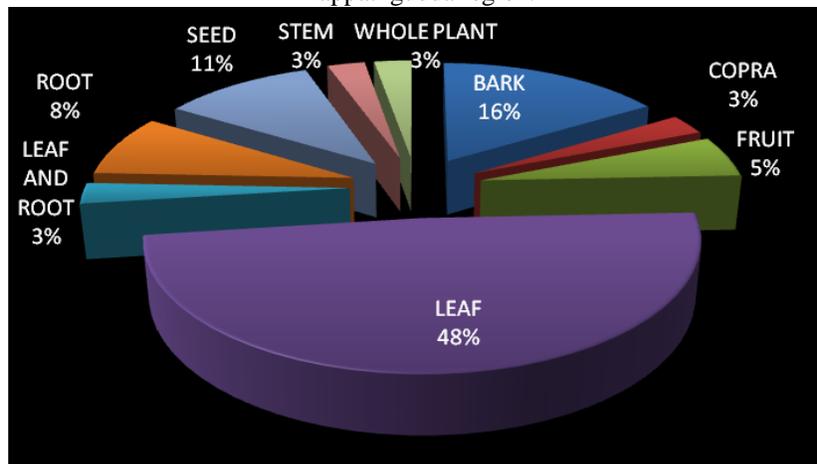
**Fig.1:-** Most represented families for the treatment of veterinary ailments in Kappathgudda



**Fig.2:-** Life forms of medicinal plants for treatment of veterinary ailments in Kappathgudda region.



**Fig. 3:-** Medicinal plant parts used by traditional healers for remedy preparation for veterinary ailments in Kappathgudda region.



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