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A Survey of Ethnoveterinary Practices and Herbal Remedies Used by the Kani Tribes of Puravimalakadavu (Amboori), Thiruvananthapuram, Kerala

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ABSTRACT: The present study was conducted among the Kani tribal settlement area in Puravimalakadavu of Amboori village, Thiruvananthapuram, Kerala to document, study and quantify their traditional knowledge on the use of medicinal plants for the treatment of various animal ailments. Information was collected using different modes of interviews and survey questionnaires from local people, Pashuvaidhyars (local healers) and veterinary healers. Plants used for ethnoveterinary practices were recorded systematically. From the study a total of 34 ailments were analyzed through routine interviews from 30 informants. More data is obtained from people between the age group 50 -70. A total of 110 plants, representing 55 families and 1 representation from pteridophyte were reported to have medicinal values extensively being used by Kani tribes for treating animal diseases. Fabaceae was the mostly reported family, with11 species and 11 genera. Leaf was the part used mostly to prepare medicines in the form of paste. The most widely used media in the preparation and administration of medicines was found to be water. Topical application was more preferred in the mode of administration. The study, opened vast vista of knowledge the Kani tribes are having, about their ethnoveterinary practices and about the highly diverse precious plants in an unexplored area of Kerala.

Keywords: Kani tribe, ethnoveterinary survey, informants, traditional medicine, Western Ghats.

INTRODUCTION

Ethnoveterinary medicine (EVM) plays an essential role in animal production and livelihood development in many poor rural areas and is frequently the only option for farmers to treat their sick animals. The term "ethnoveterinary" is defined as "local people's beliefs and aboriginal knowledge as well as, the practices used for the treatment of animal diseases" (Rehman *et al.*, 2022).

Shalihotrus Ashwashastra (1800BC) is the first work on veterinary science. Hastyayurveda (1000BC) by Palakapya is the ancient text on elephants. Mastsyapurana, Garudapurana, Lingpurana etc. have veterinary information. Arthashastra by Kautilya describes cattle, buffaloes, goat, horse, elephant and other animals. There were local healers called pashuvaidhyars who were knowledgeable and experienced in traditional veterinary health care. Veterinary practices were mentioned even in Rigveda (2000-1400BC) and Atharvaveda.

In India veterinary medical knowledge is classified into folk and cordified traditions. According to the 2011 Census, the Scheduled Tribes account for 104 million representing 8.6% of the country's population. These Scheduled Tribes were spread throughout the country largely in forest and hilly regions. There are about 36-40 tribal communities in Kerala. The major tribes of Kerala are Kani, Kurichiyar, Kurumar, Ulladan and Kattunaikkan. These tribal communities have immense knowledge about the use of fauna and flora in and around them.

Livestock are the important part of our economy and therefore their health perspectives are equally important. Many people of our country, earn their daily living from their domesticated animals. Each of the tribal communities have their own social and cultural identity (Purushothaman *et al.*, 2020). Healthy animals yield healthy and nutritious products. But the task of keeping animals healthy is not easy as the veterinary facilities are very meager in many of the states of India. A research article by Shrivastava *et al.*, (2017), deals with the review on use of ethnoveterinary practices in different parts of India as well as abroad. An

ethnobotanical study on veterinary medicinal plants of Bandipora district of Jammu and Kashmir revealed that indigestion, diarrhoea, gaseous bloat, foot and mouth disease, milk deficiency and yoke gall were the most frequently reported diseases (Sultan *et al.*, 2022).

Herbal medicinal knowledge has been passed down orally from generation to generation, with the result that it has deteriorated (Poornima *et al*., 2010). Ethnoveterinary medicine (EVM) considers that traditional practices of veterinary medicine are legitimate and seeks to validate them. The high degree of consensus among the informants suggests that the current use and knowledge is still not much strong and needs to be updated (Bhandary *et al.*, 2014). In this present scenario, this study will be helpful to fill the gaps that might have not been covered due to the negligence in documentation of ethnoveterinary practices. This study might aid in promoting large-scale awareness of the need to preserve ethnobotanical knowledge as pointed out by Thakur and Waske (2018); Verma (2016); Thakur and Sarika (2016); Radha and Puri (2018), as well as by Kumar and Duggal (2019), in their studies.

MATERIALS AND METHODS

Study Area. The study was conducted among the Kani tribes inhabiting Puravimalakadavu of Amboori village situated in the southern tip of Western Ghats near Trivandrum, Kerala, South India. South-East of Amboori is Tamil Nadu (Fig. 1). It is a part of Agasthyamala Biosphere Reserve. Eastern part is covered by densely forested Neyyar wildlife sanctuary of Kerala. The village experiences a tropical humid climate. The Kani tribes here primarily practice agriculture and animal husbandry.

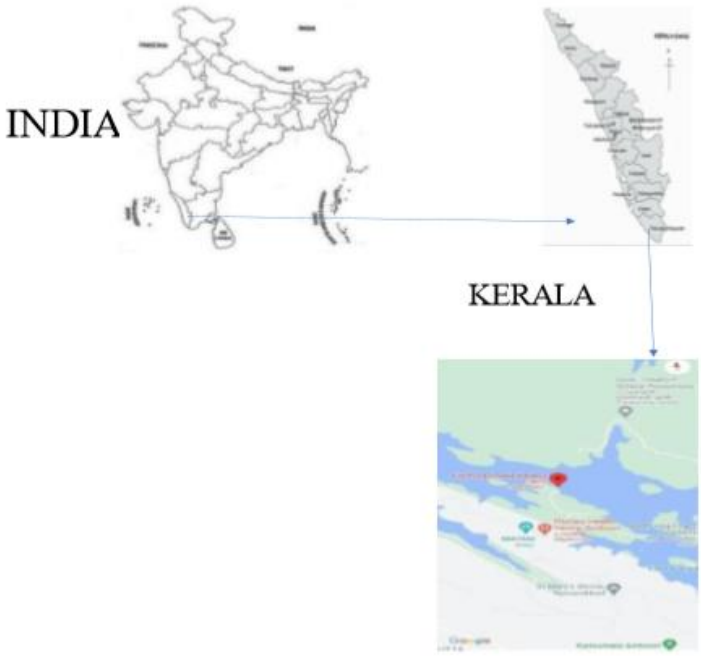

Fig. 1. Map showing study area – Puravimalakadavu, Amboori, Thiruvananthapuram, Kerala.

Ethnobotany: a methods manual **(**Martin, 2010**)** was followed as the general guideline for the present study.

Data were collected over a period of 4 months. Field visits, informal and semi-structured interviews, and group discussions were conducted with 30 informants, including traditional healers and livestock owners. The interviews focused on plant identification, parts used, preparation methods, ailments treated, and administration techniques.

Collected specimens were identified using local floras and authenticated by botanical experts. Voucher specimens were preserved in herbarium sheets. Plants were documented with details such as scientific name, local name, family, habit, plant part used, and mode of application.

Data analysis was carried out to understand the ethnomedicinal plants in ethnoveterinary practices. The data is analysed with the help of, Bar diagrams, Pie charts and Tables.

Tabulation of data consisted of scientific name, local name, family, plant part used, disease and treated animals.

RESULTS

The Ethnomedicinal plant species used by the Kani tribal people to treat animal ailments both as single medicine (a single plant is used) and compound medicines (a combination of more than one plant is used) are categorised under Scientific name, Family, Local name, Plant part used (with description of used part), Habit, Disease condition and Animals treated.

The documented ethnoveterinary knowledge highlighted the use of single medicinal plants in treating a broad spectrum of livestock ailments affecting cattle, goats, and poultry. Each plant is carefully selected and identified by its scientific and local names, family, plant part used, and habit (Table 1). Treatments address frequent and conditions such as fever, wounds, ulcers, skin infections, digestive issues, reproductive disorders,

and toxic bites. Remedies are prepared traditionally—as decoctions, infusions, pastes, or extracts—and administered either topically for external infections or orally for systemic illnesses.

The practice of compound medicine, involving multiple plants in a single remedy, demonstrates advanced indigenous knowledge of synergistic healing. Notable examples include the treatment of mastitis using *Aloe vera*, *Curcuma longa*, *Alpinia galanga*, and *Citrus limon*, or foot and mouth disease using a blend of *Allium sativum*, *Azadirachta indica*, and *Acalypha indica* in oil bases. Fever remedies vary based on livestock species, combining antipyretic herbs like *Swertia perennis*, *Zingiber officinale*, and *Piper nigrum* in oral infusions. These combinations are often enhanced with common household ingredients such as jaggery, sesame oil, turmeric, or rice water, reflecting both cultural accessibility and cost-effectiveness.

These traditional formulations reflect not only a deep-rooted cultural heritage but also a sustainable alternative to modern veterinary treatments, especially in rural settings. The precise use of locally available plants, some of which are endemic or threatened, highlights the need of documentation and conservation. Furthermore, this knowledge provides a foundation for pharmacological validation, promoting eco-friendly animal healthcare systems. Preserving and studying these practices not only ensures livestock welfare but also protects traditional ecological wisdom.

Table 1: List of medicinal plants used by Kani tribes for ethnoveterinary practices at Puravimalakadavu tribal settlement in Amboori Village, Trivandrum District, Kerala.

Sr. No.	Scientific Name	Family	Local Name in English	Habit	Plant Part Used	Disease Condition	Animals Treated
1.	*Abelmoschus esculentus* (L.) Moench	Malvaceae	Lady's Finger	Herb	Fruit	Retention of placenta	Livestock animals.
2.	*Acalypha indica* L.	Euphorbiaceae	Indian Nettle	Herb	Leaves	FMD (foot and mouth disease)	Cattles
3.	*Achyranthes aspera* L.	Amaranthaceae	Prickly Chaff Flower	Herb	Whole plant	Pox /cracks	Cattles
4	*Allium cepa* L.	Liliaceae	Onion	Herb	Bulb	Worm infestation, fever	Cattles
5	*Allium sativum* L.	Liliaceae	Garlic	Herb	Bulb	Udder oedema, fever, worm infestation	Poultry animals.
6	*Aloe vera* (L.) Burm.	Liliaceae	Indian Aloe	Herb	Leaves	Mastitis	Cattles
7	*Alpinia galanga* (L.) Willd.	Scitamineae (Zingiberaceae)	Galangal	Herb	Rhizome	Fever and mastitis	Cattles
8	*Alstonia venenata* R.Br.	Apocynaceae	Poison Devil Tree	Herb	Stem	Poisonous bite	Livestock animals
9	*Amaranthus viridis* L.	Amaranthaceae	Green Amaranth	Herb	Stem and Root	Fever	Cattles
10	*Andrographis paniculata* (Burm.f.) Nees	Acanthaceae	Green chiretta	Herb	Leaves	Scorpion bite	Cattles
11	*Anona muricata* L.	Annonaceae	Soursop	Evergreen tree	Leaves	FMD	Cattles
12	*Areca catechu* L.	Arecaceae	Areca nut	Evergreen tree	Leaves	Lice control -ectoparasite	Goats
13	*Argyresia Speciosa* (L.f.) Sweet	Convolvulaceae	Elephant creeper	Climbing vine	Leaves	Bursting boil	Cattles
14	*Aristolochia india* L.	Aristolochiaceae	Indian Birthwort	Creeper	Root	Poisonous bite	Livestock animals
15	*Asparagus racemosus* Willd.	Asparagaceae	Wild asparagus	Climber	Root	Immunostimulant	Livestock animals
16	*Azadirachta indica* A. Juss.	Meliaceae	Neem	Tree	Leaves	Immunostimulant and ectoparasite infestation	Livestock animals
17	*Bacopa monnieri* (L.) Pennell	Plantaginaceae	Indian Pennywort	Creeping herb	Whole plant	Tissue strengthening	Cattles
18	*Bambusa arundinaceae* (Retz.) Willd.	Poaceae	Bamboo	shrub	Leaves	Ulcer	Livestock animals
19	*Beloperone Plumbaginifolia* (J.Jacq.) Nees	Acanthaceae	Sabah Snake Grass	Shrub	Stem, Leaf	Poisonous bite	Cattles
20	*Biophytum sensitivum* (L.) DC.	Oxalidaceae	Tropical little tree plant	Herb	Whole plant	Fever	Livestock animals
21	*Brassica juncea* L.	Brassicaceae	Mustard	Herb	Seeds	Worm infestation	Cattles
22	*Butea frondosa* Roxb. ex	Fabaceae	Flame of the	Tree	Leaves	Colic pain	

	Willd.		Forest				Goats and cows
23	*Calotropis procera* (Aiton) W.T.Aiton	Asclepiadaceae	Giant milkweed	Shrub	Root, Latex	Snake poison, blood clotting	Cattles
24	*Calycopteris floribunda* (Roxb.) Lam.	Combretaceae	Ukshi	Shrub	Leaves	Retention of placenta	Livestock animals
25	*Capsicum frutescens* L.	Solanaceae	Chili pepper	Herb	Fruit	Bloat and indigestion	livestock animals
26	*Cardiospermum halicacabum* L.	Sapindaceae	Balloon Vine	Herb	Whole plant.	Post pregnancy	Cows and goats
27	*Carica papaya* L.	Caricacea	Papaya	Tree-like	Fruit	indigestion	livestock animals
28	*Cassia obtusofolia* (L.) H.S.Irwin & Barneby	Fabaceae	Sickle senna	Herb	Leaves	Fever	Cattles
29	*Centella asiatica* (L.)	Apiaceae	Indian pennywort	Herb	Whole plant	Fever	Hen
30	Chassalia curviflora (Wall.) Thwaites	Rubiaceae	Curved Flower Woody Chassalia	Subshrub	Leaves	Poisonous bite	Cattles
31	*Cheilocostus speciosus* (J.Konig) C. Specht	Costaceae	Crepe Ginger	Herb	Rhizome	Inflammation	Cattles
32	*Cinnamomum tamala* (Buch. - Ham.) T. Nees & C.H Eberm.	Lauraceae	Indian bay leaf	Tree	Leaves	Fever	Cattles
33	*Cissus quandrangularis* L.	Vitaceae	Veldt grape	Evergreen climber	Leaves	Repeat bleeding	Cattles
34	*Citrus limon* (L.) Burm.f.	Rutaceae	Lemon	Tree	Fruit	Mastitis	Cattles
35	*Clitoria ternata* L.	Fabaceae	Butterfly Pea	Herb	Leaves	Snakebite	Cattles
36	*Cnidoscolus aconitifolius* (Mill.) I.M.Johnst.	Euphorbiaceae	Tree spinach	Shrub	Leaves	Scorpion bite	Cattles
37	*Cocos nucifera* L.	Arecaceae	Coconut	Tree	Fruit (Taken during earlier fruit setting stage)	Skin diseases	Livestock animlas
38	*Colosanthes indica* (L.) Blume	Bignoniaceae	Bitter Apple	Tree	Bark	Sprue or malabsorption	All kinds of animals
39	*Coriandrum sativum* L.	Apiaceae	Coriander	Herb	Fruit	Fever	Livestock animals
40	*Cuminum cyminum* L.	Apiaceae	White cumin	Herb	Fruit	Ecto parasitic infestation	Poultry animals
41	*Curculigo orchioides* Guertn.	Hypoxidaceae	Golden Eye-Grass	Herb	Rhizome	Urinary disorders, skin diseases	Cattles
42	*Curcuma longa* L.	Scitamineae (Zingiberaceae)	Turmeric	Herb	Rhizome	Prolapse, bloat and indigestion	Livestock animals
43	*Cynodon dactylon* (L.) Pers.	Poaceae	Bermuda grass	Herb	Whole plant	Bleeding gums and infertility	Livestock animals
44	*Datura stramonium* L.	Solanaceae	Jimson weed	Subshrub	Fruit	Body pain	Cattles
45	*Desmodium trifolium* (L.) DC.	Fabaceae	Creeping Tick Trefoil	Herb	Leaf	Skin diseases	Livestock animals
46	*Eclipta Prostrata* (L.) L.	Asteraceae	False daisy	Herb	Whole plant	Rejuvenator	Livestock animals
47	*Elephantopus scaber* L.	Asteraceae	Prickly-leaved Elephant's foot	Herb	Whole plant	Skin diseases	Livestock animals
48	*Eleutherine bulbosa (Mill.) Urb.*	Iridaceae	Dayak Onion	Herb	Bulb	Poisonous bite	Cattles
49	*Ensete superbum* (Roxb.)	Scitamineae (Musaceae)	Rock Banana	Sub shrub	Seeds (powdery endosperm)	poison stings and ulcers	Cattles
50	*Eucalyptus globulus* Labill.	Myrtaceae	Blue Gum	Tree	Leaves	Diarrhea	Livestock animals
51	*Eupatorium triplinervis* M.Vahl	Asteraceae	Water hemp	Herb	Leaves	Blood clotting and Wounds	Livestock animals

52	*Euphorbia hirta* L.	Euphorbiaceae	Asthma plant	Herb	Whole plant	Milk production	Cattles
53	*Evolvulus alsinoides* (L.) L.	Convolvulaceae	Dwarf morning-glory	Herb	Leaves	Skin diseases	Livestock animals
54	*Ficus religiosa* L.	Moraceae	Sacred Fig	Tree	Leaves	Dysentery	Livestock animals
55	*Glycyrrhiza glabra* L.	Fabaceae	Licorice	Perennial herb	Rhizome and Roots	Rejuvenator	Livestock animals
56	*Hemidesmus indicus* (L.) R. Br.	Acanthaceae	Indian sarsaparilla	Herb	Root	Body pain	Livestock animals
57	*Hemionitis artifolia* (Burm.f.) T. Moore	Pteridaceae	Heart Leaf Fern	Epiphyte	Leathery fronds	Rabies	Livestock animals
58	*Hibiscus rosa -sinensis* L.	Malvaceae	China rose	Shrub	Leaves	Mastitis	Cattles
59	*Holostemma ada-kodien* Schult	Asclepiadaceae	Holostemma Creeper	Creeper, subshrub	Stem tuber	Treat wounds and cuts	Livestock animals
60	*Humboldtia unijuga* var.trijuga	Fabaceae	Bark-Flower Humboldtia	Tree	Leaves and Bark	Ulcers, impure blood, poisonous bite	Cattles
61	*Indigofera tinctoria* L.	Fabaceae	Indian Indigo	Shrub	Leaves	Meningitis	Cattles
62	*Ixora coccinea* L.	Rubiaceae	Jungle flame	Shrub	Flower	Skin disease	Cattles
63	*Janakia arayalpathra* J.Joseph & V.Chandrasekaran	Apocynaceae	Amruthapala	Shrub	Root	Poisonous bite, ulcer	All type of animals
64	*Jasminum angustifolium* (L.) Willd	Oleaceae	Wild Jasmine	Shrub	Flower bud	Skin disease	Livetock animals
65	*Justicia adhatoda* L.	Acanthaceae	Malabar nut	Tree	leaves	Fever	Livetock animals
66	*Kaempferia galanga* L.	Scitamineae (Zingiberaceae)	Aromatic ginger	Herb	Rhizome	Poisonous bite	Livetock animals
67	*Kalanchoe pinnata* (Lam.) Pers.	Crassulaceae	Air plant	Herb	Leaves	Bruised limb	Livetock animals
68	*Lantana camara* L.	Verbanaceae	Wild Sage	Shrub	Leaves	Ectoparasite infection	Cattles
69	*Lawsonia inermis* L.	Lythraceae	Henna	Shrub	Leaves	FMD - (foot and mouth disease)	Cattles
70	*Leucas aspera* (Willd.) Link	Lamiaceae	Common Leucas	Herb	whole plant	Worm infestation	Livestock animals
71	*Mangifera indica* L.	Anacardiaceae	Mango	Tree	Unripe flowers	Constipation	Livestock animals
72	*Mimosa pudica* L.	Fabacea	Sensitive plant	Herb	Leaves	Prolapse	Cattles
73	*Mollugo verticillate* L.	Molluginaceae	Carpet weed	Herb	Whole plant	Poor eyesight, inflammation	Cows
74	*Momordica charantia* L.	Cucurbitaceae	Bitter gourd	Herb	Leaves	Fever	Cattles
75	*Moringa oleifera* Lam	Moringaceae.	Drumstick tree	Shrub	Bark	Repeat bleeding	Cattles
76	*Murraya koengii* (L.) *Spreng.*	Rutaceae	Curry leaf tree	Shrub	Leaves	Indigest ion	Hen and Goat
77	*Musa paradisiaca* L.	Scitamineae (Musaceae)	Banana	Shrub	Pseudostem	Worm infestations	Livestock animals
78	*Myrtus communis* L.	Myrtaceae	Common myrtle	Shrub	Leaves	Rheumatism, gastric ulcer	Cattles
79	*Naregamia alata* Wight & Arn.	Meliaceae	Goanese Ipecac.	Herb	Leaves	Poisonous bite	Livestock animals
80	*Ocimum sanctum* L.	Lamiaceae	Holy Basil	Herb	Leaf	FMD (foot and mouth disease)	Cattles
81	*Ocimum tenuiflorum* L.	Lamiaceae	Tulsi	Herb	Leaves	Pox /cracks	Cattles
82	*Pergularia daemia* (Forssk.) Chiov.	Apocynaceae	Stinking Swallow wort	Herb	Leaves	Inflammation	Cattles
83	*Physalis minima* L.	Solanaceae	Native Gooseberry	Herb	Fruit	Internal swelling and pain	Cattles
84	*Piper betle* L.	Piperaceae	Betel pepper	Herbaceous climbing vine	Leaves	Bloat and indigestion wounds bruises	Cows

85	*Piper nigrum* L.	Piperaceae	Pepper	Herbaceous climbing vine	Fruit	Constipation, toothache, Sunburn	Cattles and poultry animals
86	*Plumbago indica* L.	Plumbaginaceae	Rosy flowered Leadwort	Evergreen shrub	Leaves	Skin diseases	Cattles
87	*Premna serratifolia* L.	Lamiaceae	Headache Tree	Tree	Stem	Poisonous bite	Livestock animals
88	*Pterospermum rubiginosum* Heyne	Sterculiaceae	Rusty Kanak Champa	Tree	Bark	Bruise and fracture	Cattles
89	*Punica granatum* L.	Lythraceae	Pome granate	Shrub	Fruit husk	Diarrhea	Goat
90	*Ricinus communis* L.	Euphorbiaceae.	Castor	Shrub	Seeds	Bacterial infections	All kinds of animals
91	*Ruellia patula* Jacq.	Acanthaceae	Spreading Wild Petunia	Herb	Leaves	Spide cough, wounds and renal infections rbite	Cows
92	*Sansevieria cylindrica* Bojer ex Hook.	Asparagaceae	Cylindrical snake plant	Herb	Leaf	Snake bite	Goats
93	*Sapindus trifoliatus* L. J.R.I.Wood	Sapindaceae	South India Soap nut	Tree	Fruit	Mouth ulcers, inflammation	Livestock animals
94	*Saraca indica* L.	Fabaceae	Ashoka tree	Tree	Flowers	Ectoparasitic infestation	Cattles
95	*Semecarpous anacardium* L.f.	Anacardiaceae	Marking Nut Tree	Deciduous Trees	Seeds	Increase in sperm count, antioxidant, tumours	Cattles
96	*Sesamum indicum* L.	Pedaliaceae	Gingelly	Herb	Seeds	FMD	Cattles
97	*Sida cordifolia* Linn.	Malvaceae.	Country Mallow	Herb	Whole plant	Oedema and eye disorders.	Livestock animals
98	*Spathiphyllum wallisii* Regel	Araceae	Peace Lily	Herb	Leaves	Poisonous bite	Cattles
99	*Sphaeranthus indicus* L.	Asteraceae	Indian Globe Flower	Herb	Stem	Conjunctivitis	Dogs
100	*Stevia rebaudiana* (Bertoni) Bertoni	Asteraceae	Sugar leaf	Herb	Leaves	Constipation	Livestock animals
101	*Strobilanthes alternata* (Burm.f.) Moylan ex	Acanthaceae	Red Ivy	Herb	Leaves	Wounds and Bruises	Cattles
102	*Swertia perennis* L.	Gentianaceae	Felwort	Herb	Leaves	Fever	Cattles
103	*Tamarindus indica* L.	Fabaceae	Tamarind tree	Tree	Leaves	Inflammation	Livestock animals
104	*Tephrosia purpurea* (L.) Pers	Fabaceae	Wild Indigo	Herb	Leaves	Diarrhea	Livestock
105	*Terminalia arjuna* (Roxb.) Wight & Arn.	Combretaceae	Arjun tree	Decidous tree	Leaves and Bark	Urinary tract infections	Cattles and poultry animals
106	*Tinospora cordifolia* (Thunb.) Miers.	Menispermaceae	Heart-leaved moonseed	Climbing vine	Stem	Immunostimulant	Livestock animals
107	*Trichopus zeylanicus* Gaertn.	Dioscoreaceae	Miracle Plant	Herbacoeus	Leaves	Immune deficiency	Livestock animals
108	*Urtica dioica* L.	Urticaceae	Stinging nettle	Herb	Leaves	Cough	All kinds of animals
109	*Vernonia anthelmintica* (L.) Willd.	Asteraceae	Purple Fleabane	Herb	Fruit	Fever	Cattles
110	*Withania somnifera* (L.) Dunal	Solanaceae	Indian winter cherry	Shrub	Roots	Immunostimulant	Livestock animals
111	*Zingiber officinale* Roscoe	Scitamineae (Zingiberaceae)	Ginger	Herb	Rhizome	Fever	Livestock animals
112	*Ziziphus oenoplia* (L.) Mill.	Rhamnaceae	Jackal Jujube	Shrub	Leaves	Body pain	Livestock animals

Taxonomic Diversity of Medicinal Plants. From the study, it has been found that 109 genera and 55 family from angiosperms and 1 species from pteridophyte (*Hemionitis artifolia* (Burm.f.) T. Moore) were used by the Kani tribes as summarised in Table 1.

Family Dominance. Fabaceae was the most dominant family with 11 genera, followed by Acanthaceae (6), Scitamineae including subfamilies (6) Asteraceae (5) Euphorbiaceae (4 species), and Apocynaceae (3 species) (Table 2). Euphorbiaceae (4 species), and Apocynaceae (3 species).

Table 2: Table showing family dominance.

FAMILY	GENUS
Acanthaceae	6
Amaranthaceae	2
Anacardiaceae	2
Annonaceae	1
Apiaceae	3
Apocynaceae	3
Araceae	1
Arecaceae	2
Aristolochiaceae	1
Asclepiadaceae	2
Asparagaceae	2
Asteraceae	5
Bignoniaceae	1
Brassicaceae	1
Caricaceae	1
Combretaceae	2
Convolvulaceae	2
Costaceae	1
Crassulaceae	1
Cucurbitaceae	1
Dioscoreaceae	1
Euphorbiaceae	4
Fabaceae	**11**
Gentianaceae	1
Hypoxidaceae	1
Iridaceae	1
Lamiaceae	4
Lauraceae	1
Liliaceae	2
Lythraceae	2
Malvaceae	3
Meliaceae	2
Menispermaceae	1
Molluginaceae	1
Moraceae	1
Moringaceae.	1
Myrtaceae	2
Oleaceae	1
Oxalidaceae	1
Pedaliaceae	1
Piperaceae	2
Plantaginaceae	1
Poaceae	2
Pteridaceae (Fern)	1
Rhamnaceae	1
Rubiaceae	2
Rutaceae	2
Sapindaceae	2
Scitamineae	6
Solanaceae	4
Sterculiaceae	1
Urticaceae	1
Verbanaceae	1
Vitaceae	1
TOTAL	109

HABIT

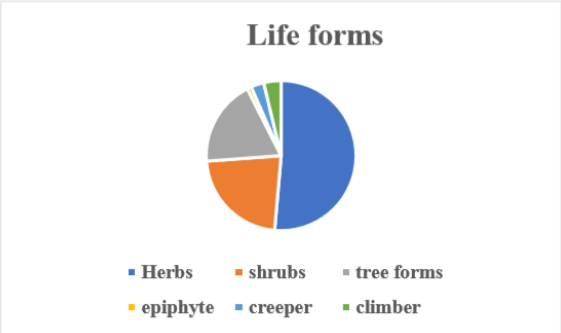

Fig. 2. Habit wise distribution of medicinal plants.

Habit wise distribution of medicinal plants showed that herbs were predominant (56 species), followed by shrubs (25 species), trees (20 species), creepers (3 species), climbers (4 species) and epiphyte (1 species) (Fig. 2).

Plant Part Used. An analysis of the officinal parts of medicinal plant for ethnoveterinary practices for the treatments of animals showed that almost all parts are used in medicine preparation -leaves, flower, flower buds, seeds, rhizomes, stem, bark, latex, roots, fruit and whole plant (Fig. 3). The diversity of plant parts used—including leaves, rhizomes, seeds, bark, latex, and even entire plants—reveals a holistic approach to medicine. Here the tribal communities, mostly utilized leaves for the preparation of many herbal medicines.

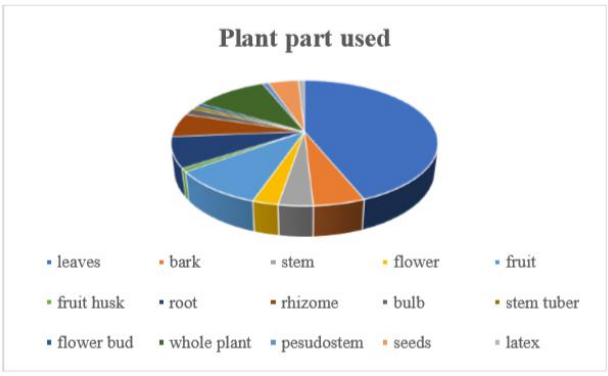

Fig. 3. Plant parts used for ethnoveterinary practices.

Media used for Preparation. Media used for Application of ethnoveterinary medicine were rice water, coconut oil, jaggery, sesame oil, neem oil, butter, boiled rice, palm jaggery, water and soda powder. Mostly medicinal species were mixed with water (35 species), followed by rice water (27 species), coconut oil(14), neem oil (19), jaggery (9), palm jaggery(8), sesame oil(12), butter (2), boiled rice (20), sodapowder (1). (Fig. 4).

Mode of Preparation and Application. Plants / parts were prepared in the form of decoction, juice, paste, oil and powder. Most of the medicines were prepared in the form of paste (55%) followed by decoction (23%), oil (6 %), powder (8%) and juice (8%) (Fig. 5). Most medicinal preparations were taken topically in the form of fresh paste (50 %), followed by oral application (48%) and bath (12%).

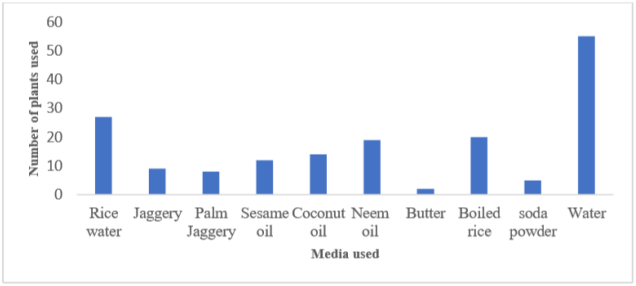

Fig. 4. Media used for Administration/Application of Ethnoveterinary medicine

Among the modes of preparation, paste formulations dominate, likely due to their simplicity and effectiveness in topical applications. Oral remedies, often administered as decoctions or infusions, target systemic illnesses and internal disorders. The preparation and administration techniques are indicative of a refined empirical knowledge developed over generations.

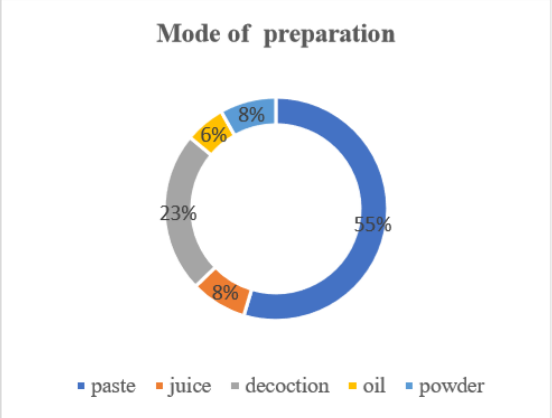

Fig. 5. Mode of preparation of medicine used for the administration of Ethnoveterinary medicine.

Ailment Categories - (Use Pattern of Plant Species used in Ethnoveterinary Practises). About 35 ailments were reported from Kani tribal people of the study area (Table 3.) Cattles were the dominating groups. Most frequently reported ailment was fever (15 species), followed by bloat and indigestion (14 species), ulcer (12 species), FMD (8 species), mastitis (7 species) and constipation (6 species). Representation of 4 species were found to be treating as adaptogens, bacterial infection, body pain, endoparasite, tissue strengthening, immunostimulant and post pregnancy ailments. Representation of 3 species for treating bleeding gums, dysentery and prolapse. Representation of 2 species for curing cough and meningitis. Cattles constitute more when compared to other livestock animals.

Table 3: Use pattern of plant species used in ethnoveterinary practices of Kani tribes.

Disease Condition	No. of Species	Animals Treated (Category)
Adaptogens	4 species	Livestock animals
Bacterial infection	4 species	Cows
Bleeding gums	3 species	Cattles
Bloat and Indigestion	14 species	Livestock animals
Body pain	4 species	Cattles
bursting boil	3 Species	Cattles
Constipation	6 species	Cattles
Cough	2 Species	Livestock animals
Diarrhoea	5 species	Cattles and hen
Dysentery	3 species	Poultry animals
Ectoparasite infestation	8 species	Cattles
Endoparasite	4 species	Cattles
Fever	15 species	All livestock animals
FMD - (foot and mouth disease) - foot lesions	8 species	Cattles
For strong tissues	4 species	Livestock animals
Immunostimulant	4 species	All livestock
Inflammation	5 species	Livestock animals
Mastitis	7 species	Cattles
Meningitis	2 species	Cattles
Post pregnancy	4 species	Livestock animals
Pox /Cracks	6 species	Cattles
Prolapse	3 Species	Cow
Rabies	1 species	Livestock animals
Rejuvinitor	3 Species	All kinds of animals
Repeat bleeding	4 Species	Cows
Retention of placenta	3 species	Cattles (cows and goats)
Rheumatism	1 species.	Cattles
Scorpion bite	3 species	Livestock animals
Skin diseases	19 species	Livestock animals
Snake bite	2 species	Cattles
Sprue	2 Species	Cattles
Stomach ache	4 species	Livestock Animals
To improve microcirculatory channels	2 species	Livestock Animals
Udder oedema	2 species	Cows
Ulcer	12 species	Cattles
Worms	9 species	Cattles
Wounds And Bruises	9 species	Livestock animals

Nativity. Out of the total plants, there were 3 endemic species (*Naregamia alata* Wight &Arn., *Humboldtia* unijugav ar. trijuga, *Janakia arayalpathra* J.), 55 indigenous species (Western ghats), 47 exotic species and 3 endangered species (*Pterospermum rubiginosum* Heyne, *Colosanthes indica* (L.) Blume, *Curculigo orchioides* Guertn.) which have been incorporated in the tribal medicine over years in Amboori village by the inhabiting tribal communities (Fig. 6).

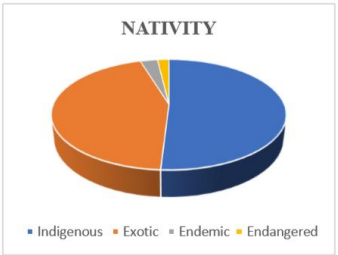

Fig. 6. Nativity of Ethnomedicinal plants used by the tribal community.

A significant finding is the use of 3 endemic and 3 endangered species in ethnoveterinary practices, which not only stresses the ecological uniqueness of the Western Ghats but also highlights the urgent need for conservation strategies that bridge traditional practices with biodiversity protection. Moreover, the presence of 47 exotic species in tribal remedies suggests dynamic knowledge systems that evolve through contact and adaptation, incorporating non-native flora much effectively.

Demographic Profile of the Informants. A total of 30 informants were interviewed including 14 male and 16 females. The demographic characteristic of informants is given in Fig. 7. The profile was created based on age pattern, more information was provided by people belonging to age group between 50 – 70, followed by the age group between 30- 50 and lastly by the age group between 15 -30.

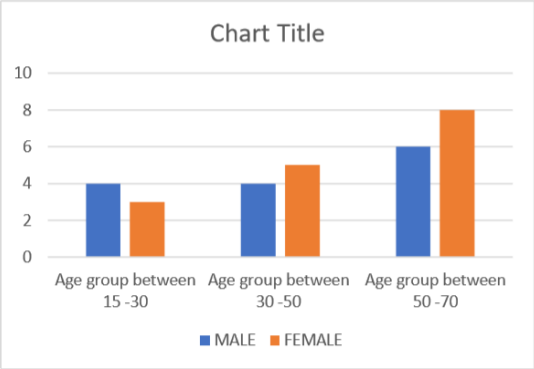

Fig. 7. Demographic feature of informants in the settlement area.

In the present study the demographic data of informants revealed, the people between the age group 50 -70 provide higher amount of data than other groups.

DISCUSSION

This study conducted among the Kani tribal community offers a wide insight into the traditional knowledge systems associated with livestock healthcare. The documentation of these plant species, from the study area, gives a rich ethnobotanical heritage. Medicinal plants have played a significant role in the treatment of livestock and poultry animal diseases. Nisha *et al.* (2021) has also reported the use of medicinal plants in treating livestock diseases by Attapadi tribal farmers in Kerala.

This study showed that plants belonging to Fabaceae was the most dominant family used to treat animals. The high proposal of medicinal species Fabaceae families has already reported by Prabhu *et al*., 2014 & Verma, 2014. Fabaceae also known to have the highest number species, more than any other plant family in the world (Islam *et al*., 2014). Herbs were found to be dominant group of plants used. In a study conducted by Parthiban *et al*. (2016) in Tamil Nadu has reported that 42% of the species were herb. The common use of herbaceous medicinal plants was also reported in many parts of the world (Addo-Fordjour *et al*., 2008) and attributed to their wide range of bioactive ingredients (Gazzaneo *et al*., 2005).

In this study, the tribal communities, mostly utilized leaves for the preparation of many herbal medicines. In the present study the most frequently used plant part is leaf applied in the form of paste. All over the world tribal communities, utilized leaves for the preparation of herbal medicines (Ullah *et al*., 2013; Yabesh *et al*., 2014; Vijayakumar *et al*., 2015). The reason why leaves were used mostly is that they are collected very easily than underground parts flowers and fruits etc. (Giday *et al*., 2009).

The use of common and culturally accessible additives like rice water, sesame oil, jaggery, and turmeric strengthens both the therapeutic value and the practicality of the remedies. Balaji and Chakravarthi (2010) in a review on Ethnoveterinary Practices in India has stated that the above said additives make EVM freely available or at a cost in proportion to the value of the animal. It can also be easily administered, usually topically or orally. Eshetu *et al*. (2015) has mentioned about the Preparation and application methods of ethnoveterinary medicinal plants by traditional healers in selected districts of southern Ethiopia. In this study, he documented the ethnoveterinary medicinal plants, and their preparation and application methods used by traditional healers in treating different animal diseases, in the four districts with different culture and languages. Here also we can see that common form is paste preparation and topological application.

The practice of treating animal ailments using both single and compound medicines showed not only the diversity but also the depth of local healthcare knowledge. Single-species remedies were commonly used for routine ailments like wounds, fever, ulcers, and indigestion, while compound preparations highlighted an advanced understanding of synergistic effect, often observed in complex conditions like mastitis and foot-and-mouth disease. Cheesman *et al.* (2017) in their study has shown that the use of synergistic treatment regimens incorporating plant extracts or purified compounds derived from plants has become an emerging area of great interest in the scientific community and many such plants are those traditionally used by indigenous communities to treat infectious diseases.

Livestock are the important part of economy so that their health perspectives are very crucial. It generates rural economy and rural employment. Farmers take care of their livestock using ethnoveterinary medicine which are cheaper than western drugs (Yinegar *et al.*, 2007; Masika Kone & Atindehou 2008). This study revealed that the ailments treated span over 35 categories, with fever, bloat, ulcers, FMD, and mastitis being the most frequently addressed. The inclusion of adaptogenic, immunostimulant, and tissue-strengthening remedies indicates an awareness of preventive healthcare and long-term wellness in animals, which extends beyond mere treatment of acute symptoms. Parthiban et al. (2016) in their study on medicinal plants used to treat livestock diseases from Kudavasal taluk of Thiruvarur district, Tamil Nadu has pointed out that documentation of traditional knowledge is valuable for the communities and their future in treating domestic animals. The low cost and no side effects of these

traditional preparations make them adaptable by the local community.

An important finding is the use of 3 endemic and 3 endangered species in ethnoveterinary practices along with the presence of 47 exotic species in tribal remedies. Most of the species reported in ethnoveterinary applications are wild, so that it is the world's necessity to conserve traditional local knowledge of folk veterinary therapies. Abbasi *et al.* (2013) has also pointed out the need of conservation motives to assist with in situ and ex situ environmental conservation initiatives.

With regard to demographical data, in a study based on traditional knowledge of medicinal plants in treating livestock diseases conducted in Kudavasai taluk of Thiruvarur district in Tamilnadu shared same demographic inference about the knowledge of people (Parthiban *et al.*, 2016). It has been observed that the traditional system of knowledge is now confined only among the surviving older people and few practitioners in the tribal community (Prakash *et al.*, 2021). Demographically, the transmission of this knowledge is very prominent among older informants, particularly those aged between 50 and 70 years, indicating the threat of knowledge erosion among younger generations. This generational gap indicates the importance of documentation, education, and integration of traditional knowledge in modern ethnoveterinary science.

CONCLUSIONS

The traditional knowledge of Kani tribal community is diminishing because of social, cultural and economic changes. Conservation and protection of traditional knowledge is mandatory for the future generations. The indigenous plant species are becoming endangered nowadays. Documentation of this knowledge is important and valuable for upcoming generations, communities and pharmacological studies. The main peculiarity of medicinal plants is that they have no side effects and are cost effective. It reduces microbial resistance and lowers the antibiotic residues in dairy and poultry products. In modern medicine, livestock animal diseases are cured using antibiotics which causes the accumulation of chemical residues in livestock products, which are highly toxic to humans. India is one of the world's largest milk producers. The indiscriminate use of antibiotics and other veterinary medicine in dairy animals lead to high veterinary drug residues in the various animal products which can ultimately lead to lethal diseases. This calls out for the immense scope of ethnoveterinary medication in our country, showing how important is the field of ethnoveterinary practices.

This study also threw light on the vast knowledge of Kani tribes about their ethnoveterinary practices which can be adopted and popularized by the entire world. It has also opened new vistas about the wide range of precious plants in an unexplored area of Puravimalakadavu (Amboori), Kerala, which can be used for ethnoveterinary medications. The immense floral diversity of this area needs to be protected and conserved for the upcoming generations.

The findings highlighted a holistic approach to animal healthcare that integrates traditional wisdom with modern veterinary practices. Promoting the conservation of medicinal species and supporting community led knowledge transmission will not only improve animal health in rural areas but also safeguard the aspect of precious cultural heritage. The present research work indicates the need for conservation of medicinal plants and traditional knowledge owned by Kani tribes of this area. This study can also contribute much to the field of ethnomedicine which is an emerging branch in modern medicine. From the aging demographic of knowledge holders, it has been found very urgent to record, preserve, and validate these practices through pharmacological and ethnobotanical research.

In conclusion, the study not only preserves the cultural heritage of the Kani community but also opens new horizons for sustainable animal healthcare, biodiversity conservation, and the development of eco-friendly veterinary alternatives with global relevance.

FUTURE SCOPE

1. The therapeutic claims of the documented plants should be scientifically validated for efficacy, dosage, and safety, which can lead to the development of standardized herbal formulations.
2. Many of the plants identified hold potential for novel bioactive compounds, opening opportunities for new veterinary drugs.
3. Endemic and endangered plants recorded in this study demand in-situ and ex-situ conservation, along with cultivation programs involving local communities.
4. Ethnoveterinary practices can be incorporated into sustainable livestock management policies, reducing reliance on synthetic antibiotics.
5. Government and NGOs can promote ethnoveterinary practices as eco-friendly, cost-effective alternatives, simultaneously supporting tribal livelihoods through herbal product commercialization.

REFERENCES

Abbasi, A. M., Khan, S. M., Ahmad Khan, M. A., Quave, C. L. and Pieroni A. (2013). Botanical ethnoveterinary therapies in three districts of the Lesser Himalayas of Pakistan. *Journal of Ethnobiology and Ethnomedicine*, *9*(1), 1-21.

Addo-Fordjour, P., Kofi Anning, A., Durosimi Belford, E. J. and Akonnor D. (2008). Diversity and conservation of medicinal plants in the Bomaa community of the Brong Ahafo region, Ghana. *Journal of Medicinal Plants Research*, *2*, 226–233.

Balaji, N. S. and Chakravarthi, P. V. (2010). *Ethnoveterinary practices in India*-a review.

Cheesman. M. J., Ilanko, A., Blonk. B. and Cock, I. E. (2017). Developing new antimicrobial therapies: are synergistic combinations of plant extracts/compounds with conventional antibiotics the solution. *Pharmacognosy Reviews*, *11*(22), 57.

Eshetu, G. R., Dejene, T. A., Telila, L. B. and Bekele, D. F. (2015). Ethnoveterinary medicinal plants: preparation and application methods by traditional healers in

selected districts of southern Ethiopia. *Veterinary World*, *8*(5), 674.

Giday, M., Asfaw, Z. and Woldu, Z. (2009). Medicinal plants of the Meinit ethnic group of Ethiopia: an ethnobotanical study. *Journal of Ethnopharmacology*, *124*, 513–521.

Gazzaneo, L. R. S., Lucena and Albuquerque, U. P. (2005). Knowledge and use of medicinal plants by local specialists in a region of Atlantic Forest in the state of Pernambuco. *Journal of Ethnobiology and Ethnomedicine*, *1*, 9.

Islam, M. K., Saha, S., Mahmud, I., Mohamad, K., Awang, K., Uddin, S. J. and Shilpi, J. A. (2014). An ethnobotanical study of medicinal plants used by tribal and native people of Madhupur forest area, Bangladesh. *Journal of Ethnopharmacology, 151*(2), 921-930.

Jayakara Bhandary, M. and Chandrashekar, K. R. (2014). Diversity and use of ethnomedicinal plants in coastal Karnataka, India. *Biodiversity Journal, 15*(1), 89-93.

Kone, W. M. and Atindehou, K. K. (2008). Ethnobotanical inventory of medicinal plants used in traditional veterinary medicine in Northern Cote d'Ivoire (West Africa). *South African Journal of Botany*, *74*, 76–84.

Kumar, Gulshan and Duggal, Sampy (2019). Ethnomedicinal Diversity of Aromatic Plants in Foot Hill Regions of Himachal Pradesh, India. *Journal of Theoretical & Applied Sciences*, *11*(1), 18-39.

Martin, G. J. (2010). *Ethnobotany:* a methods manual. Routledge.

Morvin Yabesh, J. E., Prabhu, S. and Vijayakumar, S. (2014). An ethnobotanical study of medicinal plants used by traditional healers in silent valley of Kerala, India. *Journal of Ethnopharmacology*, *154*, 774–789.

Nisha, A. (2024). Ethnoveterinary therapeutic practices of medicinal flora in livestock health care by Attappadi tribal farmers of Kerala.

Parthiban, R., Vijayakumar, S., Prabhu, S. and Yabesh, J. G. E. M. (2016). Quantitative traditional knowledge of medicinal plants used to treat livestock diseases from Kudavasal taluk of Thiruvarur district, Tamil Nadu, India. *Revista*, 109-121.

Poornima, G., Manasa, M., Rudrappa, D., and Prashith Kekuda, T.R. (2010). Medicinal plants used by herbal healers in Narasipura and Manchale villages of Sagara Taluk, Karnataka, India. *Science, Technology and Arts Research Journal, 1*(2), 12-17.

Prabhu, S., Vijayakumar. S., MorvinYabesh, J. E., Ravichandran, K. and Sakthivel, B. (2014). Documentation and quantitative analysis of the local on medicinal plants in Kalrayan hills of Villupuram district, Tamil Nadu, India. *Journal of Ethnopharmacology*, *157*, 7–20.

Prakash, P., Radha Kumar, M., Pundir, A., Puri, S., Prakash, S. and Abdel-Daim, M. M. (2021). Documentation of commonly used ethnoveterinary medicines from wild plants of the high mountains in Shimla District, Himachal Pradesh, India. *Horticulturae*, *7*(10), 351.

Pushpangadan, P., Rajasekharan, S., Ratheshkumar, P. K., Jawahar, C. R., Nair, V. V., Lakshmi. N. and Amma, L.S. 1988. 'Arogyappacha' (*Trichopus zeylanicus* Gaerin) The 'Ginseng'of Kani Tribes of Agashyar Hills (Kerala) for ever green health and vitality. *Ancient Science of Life*, *8*(1), 13.

Purushothaman, T. and Mol K I. (2020). Ethnobotanical medicines used by the Kani and Kurichiyar tribal communities of Kerala. *Journal of Arts, Humanities, and Social Sciences*, *8*(1), 191-199.

Radha and Puri, S. (2018). Study of Ethnomedicinal Plants used by Migratory Shepherds in Renuka Forest Division of District Sirmour (H.P.) Western Himalaya, *Bio Bulletin*, *4*(2) 103-109.

Rehman, S., Iqbal, Z., Qureshi, R., Rahma, I. U., Sakhi, S., Khan, I. and Ijaz, F. (2022). Ethnoveterinary practices of medicinal plants among tribes of tribal district of North Waziristan, Khyber Pakhtunkhwa, Pakistan. *Frontiers in Veterinary Scence*, *9*, 815294.

Shrivastava, S., Jain, A. K. and Tomar, R. S. (2017). Ethnoveterinary practices: a review on phytotherapeutical approaches in treatment of animals. *Frontiers in Veterinary Scence*, *3*, 96-100.

Sultan, A., Masood, T. H, Syed, QUAB, Rafeeq, J. and Adil, M. (2022). Ethno-veterinary uses of medicinal plants in district Bandipora of Jammu ampersand sign Kashmir Union Territory. *Emergent Life Sciences Research*, *8*, 89-94.

Thakur, Pushpa and Sarika (2016). Ethno-medicinal uses of some plants of Potter's Hill in Shimla (Himachal Pradesh, India) *Biological Forum–An International Journal*, 8(2) 417-422.

Thakur, M. K. and Waske, S. (2018). Study of Medicinal Plants used by Local Herbal Healers in South Block of Seoni District (M.P.). *International Journal of Theoretical & Applied Sciences*, *10*(1), 95- 99.

Ullah, M., Usman Khan, M., Mahmood, A., Hussain, M., Mehmood Wazir, S., Daud. M., and Shinwari, Z. 2013. An ethnobotanical survey of indigenous medicinal plants in Wana district south Waziristan agency, Pakistan. *Journal of Ethnopharmacology*, *150*, 918–924.

Verma, R. (2014). An ethnobotanical study of plants used for the treatment of livestock diseases in Tikamgarh District of Bundelkhand, Central India. *Asian Pacific Journal of Tropical Biomedicine*, *4*, S460–S467.

Verma, R. K. (2016). Status of Plant Diversity along an Altitudinal Gradient in Dankund Beat of Kalatop Khajjiar Wild Life Sanctuary of District Chamba, Himachal Pradesh Himalayan Forest Research Institute. *Biological Forum–An International Journal*, *8*(1), 540-547.

Vijayakumar, S., Morvin Yabesh, J. E., Prabhu, S., Manikandan, R. and Muralidharan, B. (2015). Quantitative ethnomedicinal study of plants used in the Nelliyampathy hills of Kerala, India. *Journal of Ethnopharmacology*, *161*, 238–254.

Yinegar, H., Kelbessa, E., Bekele, T. and Lulekal, E. (2007). Ethnoveterinary medicinal plants in Bale Mountains National Park, Ethiopia. *Journal of Ethnopharmacology*, *112*, 55–70.

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