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## Indigenous Knowledge on Cattle Health Care Practices in Selected Villages of Madurai District in Tamil Nadu, India

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### ABSTRACT

The present study was aimed to investigate the Indigenous knowledge on cattle health care practices in selected villages located in foot bases of Azhagar hills in Madurai district, Tamil Nadu. The informations related to ethnoveterinary practices were collected through questionnaire as well as personal interviews during field trips made from August, 2014 to June, 2018. It has been shown that 41 medicinal plants of 24 families used by traditional healers to cure cattle diseases were documented from study sites. The ancestral traditional knowledge of people who have been using the native plants for the preparation of drugs and methods of their administration were recorded. From this present investigation, the practical knowledge of people in herbal medicines reveals that they are capable of treating various diseases.

### 1. Introduction

Medicinal plants are being used for the treatment of various livestock ailments by the local peoples since earliest times. It is a recognized fact that plants are an important source of ethnoveterinary medicines [1]. From the last decade, ethnoveterinary practices have gained tremendous importance due to the discovery of some effective ethnoveterinary practices are more common in developing countries [2, 3]. The aim of the present investigation was to record the indigenous knowledge of local people on medicinal plants used for curing cattle diseases in 4 different villages located at the foothills of Azhagar hills in Madurai district.

### 2. Experimental Methods

#### 2.1 Geographical Details of the Study Sites

For this current research work, a total of 4 villages viz., Arittapatti (78° 16' 42" E Longitude – 10° 02' 11" N Latitude), A.Vallalapatti (78° 17' 11" E Longitude – 10° 03' 38" N Latitude), Kidaripatti (78° 15' 27" E Longitude – 10° 03' 52" N Latitude) and Mangulam (78° 16' 24" E Longitude – 10° 03' 11" N Latitude), which are located at the foot hills of Azhagar hills in Madurai district of Tamil Nadu, were selected. The altitude of the study sites is about 350 – 430 M above mean sea level (MSL).

#### 2.2 Weather Details

As all the study sites selected for this present investigation were located within the distance of 10 km in total, there is no any fluctuations in temperature and rainfall of the study sites. The temperature of the study area ranges from 20° C during winter and about 39° C during summer. The average rainfall reaches 700 mm per year.

#### 2.3 Interview with Informants

In order to document the utilization of the plants presented in selected study sites as veterinary medicine by the local inhabitants of different regions, an extensive survey was carried out in 4 villages from August, 2014 to June, 2018. A standard method was followed to collect the valuable information on veterinary medicine [4]. The informants interviewed numbered 17 (12 Male, 5 Female) which include both

households and herbalist healers who had strong links with traditional activities. The age of the informants was ranged 37 – 72.

#### 2.4 Botanical Identification of Plants

All the medicinal plants recorded during the field visits were botanically identified by referring Flora of Tamil Nadu Carnatic [5] and An Excursion Flora of Central Tamil Nadu, India [6].

### 3. Results and Discussion

By the present investigation, it was observed that the ethnoveterinary use(s) of 41 species belonging to 41 genera under 24 families (Table 1). Among the 41 species recorded, dicots were represented by 36 species belonging to 36 genera of 21 families and monocots were 5 species of 5 genera belonging to 3 families (Table 2).

The results of current research work also reveals that the family Asclepiadaceae was found as dominant one with 5 species and it was followed by Caesalpiniaceae, Fabaceae, Liliaceae and Solanaceae: each was represented with 3 species. The following 5 families viz. Acanthaceae, Amaranthaceae, Anacardiaceae, Euphorbiaceae and Rutaceae were recorded with 2 species each and remaining 14 families were reported as monospecific family (Table 2).

By the present investigation, it was also noted that, regarding the plant parts used, leaf was the mostly used plant part (in 21 preparations with 43.75%) to treat a particular disease followed by whole plant (in 6 preparations with 12.5%), fruit (in 4 preparations with 8.33%), latex (in 3 preparations with 6.26%), root (in 3 preparations with 6.26%), inflorescence (in 3 preparations with 6.26%) and seed (in 2 preparations with 4.16%). Bulb, leaf gel, stem, stem bark, twig and tuber were the least used part (in 1 preparation with 2.08% each) (Fig. 1).

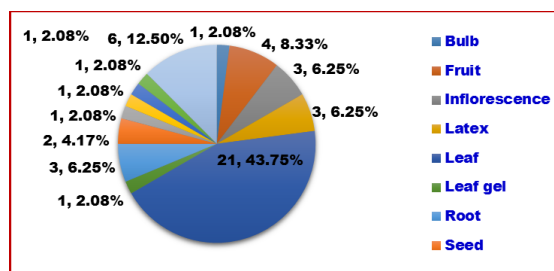


Fig. 1 Number and Percent distribution of plant parts used

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**Table 1** Ethnoveterinary medicinal plants used in the study sites

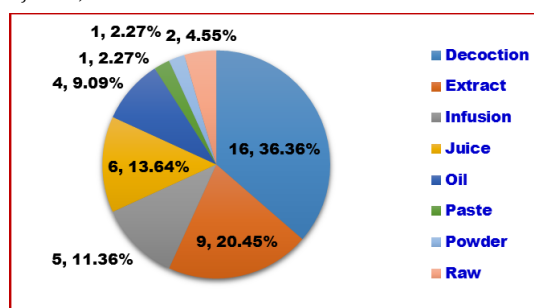
S. No.	Binomial Name	Family	Local Name (Tamil)	Uses
1	<i>Abrus precatorius</i> L.	Fabaceae	<i>Kundumani</i>	Whole plant is given orally for dysentery
2	<i>Abutilon indicum</i> (L.) Willd ex DC.	Malvaceae	<i>Thuthi</i>	Roots fed each day to lactating cows
3	<i>Acalypha indica</i> L.	Euphorbiaceae	<i>Kuppaimeni</i>	Leaf paste with pepper applied for skin diseases
4	<i>Achyranthes aspera</i> L.	Amaranthaceae	<i>Naayuruvi</i>	Leaf paste is applied to genital part and allowed to inhale the same for easy delivery
5	<i>Adhatodavasic</i> Nees	Acanthaceae	<i>Adhatoda</i>	Decoction of leaves and stem is used to cure fever and skin diseases
6	<i>Aegle marmelos</i> Corr.	Rutaceae	<i>Vilvam</i>	Leaf juice is used for foot and mouth diseases
7	<i>Allium cepa</i> L.	Liliaceae	<i>Vengayam</i>	Bulb Paste is applied in insects bites to relieve pain
8	<i>Aloe vera</i> (L.) Burm.f.	Liliaceae	<i>Katthalai</i>	Leaf gel is fed to cure wound healing and skin diseases
9	<i>Amaranthus spinosus</i> L.	Amaranthaceae	<i>Mullukirai</i>	Whole plants are used as forage to increase the yield of milk
10	<i>Anacardium occidentale</i> L.	Anacardiaceae	<i>Andimappu</i>	The twig is fed to cure trachoma
11	<i>Andrographis paniculata</i> Nees	Acanthaceae	<i>Nilavembu</i>	Whole plant decoction is used for fever and cough
12	<i>Aristolochia bracteolata</i> Lam.	Aristolochiaceae	<i>Aduthinnappalai</i>	Leaf is given orally for insect bite
13	<i>Azadirachta indica</i> A. juss	Meliaceae	<i>Vembu</i>	Leaf extract is used as an insecticide
14	<i>Bauhinia variegata</i> L.	Caesalpiniaceae	<i>Manthaarai</i>	Stem bark decoction is used to wash foot and mouth wound
15	<i>Borassus flabellifer</i> L.	Arecaceae	<i>Panai</i>	Inflorescence is given orally for cure dysentery
16	<i>Calotropis procera</i> Ait	Asclepiadaceae	<i>Erukku</i>	Latex is applied externally for wound healing
17	<i>Capsicum annum</i> L.	Solanaceae	<i>Milagaai</i>	Fruit extract is used to cure spleen disease
18	<i>Carica papaya</i> L.	Caricaceae	<i>Pappali</i>	Leaf and fruit is given orally for indigestion
19	<i>Cassia auriculata</i> L.	Caesalpiniaceae	<i>Aavaarai</i>	Leaf and flower paste is applied for tumor and skin diseases
20	<i>Cissampelos grandularis</i> L.	Vitaceae	<i>Pirandai</i>	The plant is crushed and tied on the placenta after delivery to hasten removal of placenta
21	<i>Citrus limon</i> (L.) Burm.f.	Rutaceae	<i>Narthangaai</i>	Fruit juice is applied externally for relieving irritation of insect bites
22	<i>Coriandrum sativum</i> L.	Apiaceae	<i>Kothamalli</i>	Whole plant is used for loose motion
23	<i>Cyperus rotundus</i> L.	Cyperaceae	<i>Korai</i>	Leaf paste is externally applied for tick and lice infestation
24	<i>Datura metel</i> L.	Solanaceae	<i>Oomatham</i>	Tender leaf juice mixed with sugar and water is given once daily for two days to prevent rabies
25	<i>Eclipta prostrata</i> L.	Asteraceae	<i>Karisalanganani</i>	Leaf paste is applied for wound healing
26	<i>Euphorbia hirta</i> L.	Euphorbiaceae	<i>Amman patcharisi</i>	Latex is applied on wounds
27	<i>Ficus benghalensis</i> L.	Moraceae	<i>Aalamaram</i>	Leaf extract with common salt are rubbed on tongue to cure sore of cow and bullock
28	<i>Gloriosa superba</i> L.	Liliaceae	<i>Kanthal</i>	Tuber powder and leaf extract used for curing pain delivery and trouble in urination

29	<i>Gymnema sylvestre</i> (Retz.) R.Br.	Asclepiadaceae	<i>Sirukurinchan</i>	Leaf juice is used as eye drop
30	<i>Hemidesmus indicus</i> (L.) R.Br.	Asclepiadaceae	<i>Nannari</i>	The root infusion is used to protect cattle from insect diseases
31	<i>Mangifera indica</i> L.	Anacardiaceae	<i>Mamaram</i>	Seeds are given raw to cure dysentery
32	<i>Lawsonia inermis</i> L.	Lythraceae	<i>Maruthani</i>	Leaf decoction is prescribed for constipation
33	<i>Leucas aspera</i> L.	Lamiaceae	<i>Thumbai</i>	Whole plant with pepper is given orally to cattle as a cure for snake bite
34	<i>Maduca indica</i> J.F. Gmel.	Sapotaceae	<i>Illupai</i>	Flower oil is applied on chronic wounds to expel worms
35	<i>Millettia extensa</i> Benth.	Fabaceae	<i>Poonamaram</i>	Crushed leaves spread on cattle shed to cure foot diseases
36	<i>Percularia daemia</i> Forssk.	Asclepiadaceae	<i>Veliparuthi</i>	Latex is used to cure ring worm and skin diseases
37	<i>Pongamia pinnata</i> Pierre	Fabaceae	<i>Pungam</i>	Leaf paste is used for wound healing. Seed oil is used for wound healing and skin diseases
38	<i>Tamarindus indica</i> L.	Caesalpiniaceae	<i>Puliamaram</i>	Leaf paste is applied for wounds
39	<i>Tylospora indica</i> Burm.f.	Asclepiadaceae	<i>Nancharuppan</i>	Leaves are given orally to cure digestion problems
40	<i>Vitex negundo</i> L.	Verbenaceae	<i>Nochi</i>	Leaves juice is used to discharge worms from stomach
41	<i>Withania somnifera</i> L.	Solanaceae	<i>Amukkara</i>	Root juice is used to cure diarrhea

**Table 2** Family distribution of ethnoveterinary plants

S. No.	Family	No. of genus	No. of species
1	Acanthaceae	2	2
2	Amaranthaceae	2	2
3	Anacardiaceae	2	2
4	Apiaceae	1	1
5	Arecaceae*	1	1
6	Aristolochiaceae	1	1
7	Asclepiadaceae	5	5
8	Asteraceae	1	1
9	Caesalpiniaceae	3	3
10	Caricaceae	1	1
11	Cyperaceae*	1	1
12	Euphorbiaceae	2	2
13	Fabaceae	3	3
14	Lamiaceae	1	1
15	Liliaceae*	3	3
16	Lythraceae	1	1
17	Malvaceae	1	1
18	Meliaceae	1	1
19	Moraceae	1	1
20	Rutaceae	2	2
21	Sapotaceae	1	1
22	Solanaceae	3	3
23	Verbenaceae	1	1
24	Vitaceae	1	1

\*Monocot families; others are dicots

**Fig. 2** Number and Percent distribution of mode of preparation<https://doi.org/10.30799/jpmr.037.19.04.0101>

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Based on the data collected for the present investigation, the preparation of plant parts for administration was assembled into the following categories. The medicinal preparation was mostly used in the form of raw (no. of cases 16: use percentage 36.37%), and paste (9: 20.45%). It was followed by juice (6: 13.63%), decoction (5: 11.37%), extract (4: 9.09%) and oil (2: 4.55%). The 2.27 percentage with 1 case of preparation mode was recorded for powder and infusion each as least (Fig. 2).

The findings of the present investigation also revealed that the administration routes were mainly applied externally (no. of case 16: percent distribution 38.10), given to eat (11: 26.20%), taken as drink (9: 21.42%), inhale (1: 2.38%), pour (1: 2.38%), spread (1: 2.38%), wash (1: 2.38%) and tie (1: 2.38%) (Fig. 3).

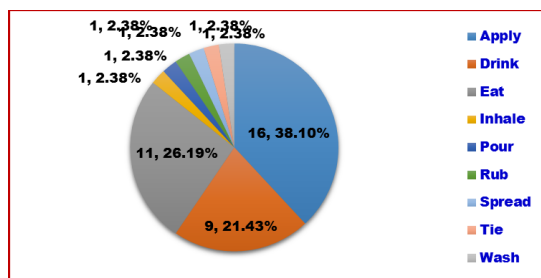


Fig. 3 Number and Percent distribution of mode of administration

From the current research work, it was stated that the medicinal resources were collected from wild and used to cure veterinary ailments. The studies conducted in other parts of India by the workers, like Saikia and Borthakur [3] in Assam, Galav et al. [7] in Rajasthan, also support the results of present study.

The results of present investigation also exposes that the trends of using traditionally available medicinal plants were found more in upper age class in both gender as compared to younger generation. The studies carried out by some more researchers also indicated that the rural people especially the aged informants have tremendous knowledge on veterinary medicinal plants [8-11].

The monumental research works, conducted by Kiruba et al. [12] from Cape Comorin of Tamil Nadu, Dar and Verma [13] among rural people of Jhansi district of Buldelkhand, Selvaraju et al. [14] from Malayali tribes living in Salem district of Tamil Nadu, Muley et al. [15] in Ahmednagar district of Maharashtra and Pragada and Rao [16] in tribal regions of Andhra Pradesh, have been resulted in leaves were mostly used plant parts for the preparation of veterinary medicine. The observations of current research works also corroborated with the same of above mentioned works.

#### 4. Conclusion

The rural population of study areas owns one or two cows, goats which are used either for agricultural purposes or for selling to generate extra income. For treatment of cattle diseases, they rely on traditionally healers

who use medicinal plants to treat cattle ailments. Locally communities especially, older age generally use these traditionally available medicinal plants for curing their cattle because these are easily available, less expensive, and have no side effects. Under these circumstances, a way must be found to salvage and record this priceless indigenous knowledge with the view to ascertaining its usefulness in the designing and development of a viable and sustainable animal health program with a more developed system of ethnoveterinary medicines. Further research analysis were urgently need on the aspects of phytochemistry, biological and clinical studies on these ethnoveterinary important medicinal plants.

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#### References

- [1] K.N.Reddy, V.R.Raju, Plants in Ethnoveterinary practices in Anapatur district, Andhra Pradesh, J. Econ. Taxon. Bot. 23 (1999) 357-357.
- [2] K.C. Dash, U.K. Sahoo, P. Rocky, Utilization of forest products as livestock feed, J. North-Eastern Counc. 24 (2004) 15-19.
- [3] B. Saikia, S.K. Bothakur, Use of medicinal plants in animal health care – A case study from Gohpur, Assam, Indian J. Trad. Knowl. 9(1) (2010) 49-51.
- [4] S.K. Jain, The role of botanist in folklore research, Folklore 5 (1964) 145-150.
- [5] K.M. Matthew, Flora of Tamilnadu carnatic, The Rapinat Herbarium, St. Joseph's College, Tiruchirapalli, Tamil Nadu, 1981-1983.
- [6] K.M. Matthew, An excursion flora of Central Tamil Nadu, Oxford – IBH Publishing Co. Pvt. Ltd., New Delhi, 1991.
- [7] P. Galav, A. Jain, S.S. Katewa, A. Nag, Animal healthcare practices by livestock owners at Pushkar animal fair, Rajasthan, Indian J. Trad. Knowl. 9(4) (2010) 660-663.
- [8] K.B. Satapathy, Ethnoveterinary practices in Jajpur district of Orissa, Indian J. Trad. Knowl. 9(2) (2012) 338-343.
- [9] K.A. Bharti, B.L. Sharma, Some ethnoveterinary plants records for Sikkim Himalaya, Indian J. Tradit. Knowl. 9(2) (2010) 344-346.
- [10] M.R. Naik, V. Venugopalan, P. Kumaravelayutham, Y.L. Krishnamurthy, Ethnoveterinary uses of medicinal plants among the Lambani community in Chitradurga district, Karnataka, India, Asian Pac. J. Trop. Biomed. 2(Suppl 2) (2012) S470-S476.
- [11] N. Rajakumar, M.B. Shivanna, Traditional veterinary healthcare practices in Shimoga district of Karnataka, India, Indian J. Trad. Knowl. 11(2) (2012) 283-287.
- [12] S. Kiruba, S. Jeeva, S.S.M. Dhas, Enumeration of Ethnoveterinary plants of Cape Comorin, Tamil Nadu, Indian J. Trad. Knowl. 5(4) (2006) 576-578.
- [13] B.A. Dar, R.K. Verma, Anaiat-ul-Haq, Ethno veterinary value of some plant species utilized by rural people of Jhansi district, Bundelkhand region, Res. J. Agri. Sci. 2(2) (2011) 321-324.
- [14] A. Selvaraju, M. Ayyanar, S.S. Rathinakumar, T. Sekar, Plants used in ethnoveterinary medicine by Malayali tribal in Salem district of Tamil Nadu, India, J. Med. Plants Res. 3(3) (2011) 1-6.
- [15] J.R. Mulay, V. Dinesh, P.P. Sharma, Study of some ethno-veterinary medicinal plants of Ahmednagar district of Maharashtra, India, World J. Sci. Technol. 2(6) (2012) 15-18.
- [16] M.P. Pragada, G.M.N. Rao, Ethnoveterinary medicinal practices in tribal regions of Andhra Pradesh, India, Bangladesh J. Plant Taxon. 19(1) (2012) 7-16.