



TRADITIONAL ETHNO -VETERINARY MEDICINAL PLANTS USED BY MALAYALI TRIBES OF JAMBUTHU MALAI, SALEM DISTRICT, TAMIL NADU, INDIA

Periyasamy A^{1*}, Muruges S¹ and Kannan M²

¹Department of Botany, School of Life Sciences, Periyar University, Salem-11, Tamil Nadu, India

²Department of Botany, Vinayaka Missions Research Foundation (Deemed to be University), Salem - 636 308, Tamil Nadu

ARTICLE INFO

Article History:

Received 17th November, 2017

Received in revised form 13th December, 2017

Accepted 16th January, 2018

Published online 28th February, 2018

Key words:

Ethno veterinary medicine, Jambuthu Malai, Malayali Tribes, Salem.

ABSTRACT

Ethnobotanical survey was carried on the medicinal plants used by the *Malayali* tribes of Jambuthu Malai, Salem District, Tamil Nadu for their veterinary healthcare practices during June 2015 to Aug 2016. Ethnobotanical data was gathered through personal interviews among the traditional healers, farmers and elders of the tribal communities through periodical field visits in the study area. A total of 48 species of ethno veterinary medicinal plants belong to 31 families were recorded with the help of ethno veterinary traditional healers. Among the plant parts used, leaves are commonly used for the ethno veterinary medicinal preparations. This information suggests the documentation of the medicinal plants and associated indigenous knowledge can be used for conservation and sustainable use of medicinal plants in the area and for validation of these plant preparations for veterinary treatment.

Copyright©2018 *Periyasamy A., Muruges S and Kannan M.* This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

India is rich in plant diversity and possesses almost 7% of the world's flowering plants. The Eastern Ghats of India are endowed with an extensively rich variety of biological species, geological formations and different ethnic tribes.

According to World Health Organization (2002), at least 80% of people in developing countries depend largely on indigenous practices for the control and treatment of various diseases affecting both human beings and their animals. The ethno veterinary practices are found among the ethnic groups and it is integral component of livestock management and their healthcare practices.

Domestic animals play an incredibly considerable role in tribal life for food, milk, leather, fat and transport. In this rural regions, livestock are regularly affected by different types of diseases due to unavailability of veterinary services and the rural people are exclusively depend on traditional veterinary practices for the treatments. With the continuation of long trial and error from ancient times to modern age through various phases of history, early man developed various skills in the treatment of their pets using plant based medicines for the healthy living and disease curing of the pet animals (Upadhyay *et al.*, 2010) called Ethno veterinary medicine.

Ethno veterinary medicine (EVM) is a system that is based on folk believes traditional knowledge, skills, methods and practices used for curing diseases and maintaining health of animals (Tyasi *et al.*, 2015; Mishra *et al.*, 2016). EVM has been defined in broad sense as an indigenous animal healthcare system that includes the traditional beliefs, knowledge, skills, methods and practices of a given society (Kaur, 2015). As EVM is developed by farmers and specialized men who treat animals in the field rather than in scientific laboratories, it is less systematic, less formalized and usually transferred (Dwivedi, 1998) by word of mouth.

Ethno veterinary practices are often cheap, safe, time tested and based on local resources and strengths. Traditional veterinary medicine knowledge like all other traditional knowledge system is handed down orally from generation to generation and it may disappear because of rapid socioeconomic, as a result of cultural heritage under the guise of civilization (Yadav Manoj *et al.*, 2012).

Ethno veterinary medicine is in danger of extinction because of advancement of the modern veterinary medicine. The importance of the traditional knowledge on ethno veterinary practices by specialists and local healers who are knowledge and experienced in traditional systems of treatment, but their knowledge is not documented, and is dwindling fast (Jain, 2000). Ethnomedicinal studies in the Eastern Ghats of Tamil Nadu have been carried out previously by a number of researchers (Udayan *et al.*, 2006). There are so many documentations on the ethno botanical and ethno floristic aspects of plants in Salem District of Tamil Nadu, India

*Corresponding author: **Periyasamy A**

Department of Botany, Periyar University, Salem-11, Tamil Nadu, India

whereas the reports on EVM are very scanty in the study area. Keeping this in view, the present study was initiated to explore plants utilized for ethno veterinary health care and document the traditional veterinary medicinal knowledge of Malayali tribes of Jambuthu Malai, Salem District, Tamil Nadu.

MATERIALS AND METHODS

Study area

The study area, Jambuthu hills is a range of hills situated in the Nainer Malai forest of Salem District which lies between the Kalrayan hills and Kolli hills of Southern Eastern Ghats. The average altitude of this region is 2364 ft above MSL. Aathukadu, Keddamalai, Surepulikadu, Modukadu are some of the tribal hamlets situated in this range and it terminates on the north-east with highest point called Ten-kal. Vegetation of this area is semi-deciduous to scrub forests where sandal wood grows naturally along with other dominant species like teak and bamboo.

Malayali tribals

The Malayali simply means a hill person, native resident of this region and they speak Tamil dialect of their own. They are supposed to be descendants of Kanchipuram Vellalar. They appear to have migrated from Kanchipuram between seventh and eleventh centuries. The tribals are mostly working as casual labors in coffee estates. They are cultivating food grains, fruits and vegetable (Senthil Kumar and Krishnamoorthy, 1997)

Data collection

The study was carried out among the tribal community of the study area through regular field visits from June 2015 to Aug 2016. The ethnobotanical data were collected from the traditional healers, live stock owners, aged persons and tribal heads with the help of standard questionnaires, discussions, field observations etc., following standard methods (Jain, 2010). Plants of ethno veterinary medicinal importance were collected and identified with the help of standard flora available (Gamble, 1915-1936). Ethnobotanical information on plants such as vernacular name of the ethnomedicinal plants used, plant part used, mode of preparation, administration and dosage required were gathered and recorded. Ethnobotanical data recorded includes alphabetical sequence of binomial name of the plant used as EVM followed by vernacular name, family, part of the plant used, mode of preparation and dosage forms.

RESULTS AND DISCUSSION

The tribal community of Jambuthu hills in Salem district is having vast knowledge of ethnomedicinal plants and they utilize numerous plants for the treatment of their livestock. This knowledge is very precious and confined among the few people of society, especially elders and traditional healers called "Vaidhyars".

Ethno veterinary diseases

By the observations and discussions with the livestock raisers and farmers of the study area it was noticed that there are so many diseases are prevailed among the cattle in the study area. Among them, foot and mouth disease, infertility, *Kunthu*, *Kalichal*, *Kundi Saala noi*, Throat swellings, Anorexia, Congestion of nose, Snake bite, Haemorrhagic septicaemia in

bovine, Bone fracture, Dysentery are some of the important ill health problems.

Ethno veterinary Medicinal plants

There are about 48 plant species belonging to 38 genera and 31 families were recorded for their ethno veterinary medicinal importance for the treatment of livestock in the study area (Table. 1 & Plate 1). Among the 48 plants, trees dominate with 18 plant species followed by shrubs (14 plant sp.), herbs (9 plant sp.) and climbers (6 plant sp.) and represented in Fig.1.

Table 1 Various families of medicinal plants for ethnoveterinary health-care management in Jambuthu Malai

S. NO.	Name of the family	No. of plants
1.	Fabaceae	4
2.	Anacardiaceae, Ceasalpinaceae, Cucurbitaceae, Mimosaceae, Rutaceae	3
3.	Anonaceae, Combretaceae, Euphorbiaceae, Ranunculaceae	2
4.	Acanthaceae, Acoraceae, Agavaceae, Araceae, Aricaceae, Aristolociaceae, Asclepiadaceae, Brasicaceae, Caryophyllaceae, Convolvulaceae, Ebenaceae, Lamiaceae, Loranthaceae, Malvaceae, Meliaceae, Moraceae, Orchidaceae, Solanaceae, Poaceae, Rhamnaceae, Rubiaceae	1

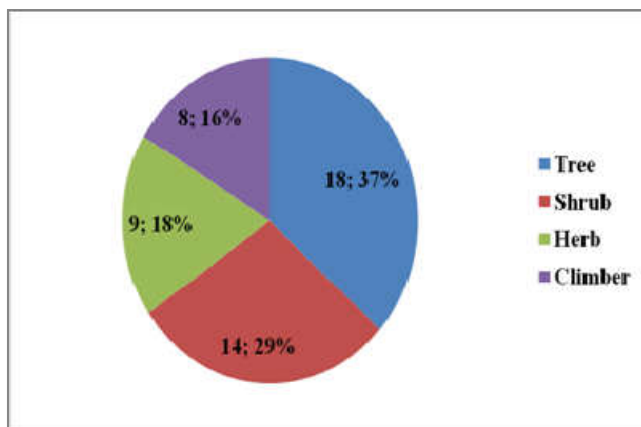


Fig No 1 Various habits of medicinal plants for ethno veterinary treatments in Jambuthu Malai

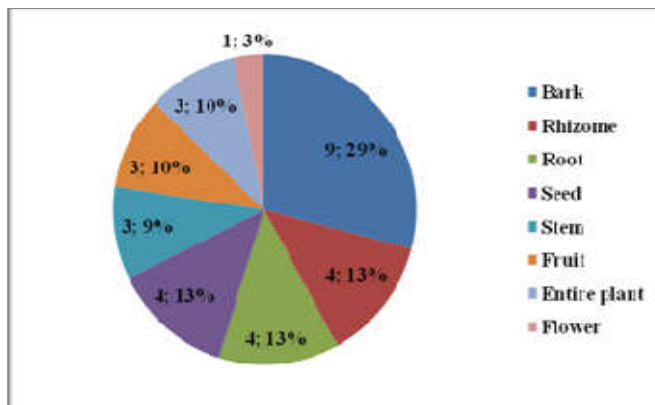


Fig No 2 Various parts of medicinal plants used for ethno-veterinary health-care management in Jambuthu malai

Table 2 List of ethnoveterinary medicinal plants of Jambuthumalai hills of Salem District, Tamil Nadu, India

S. No.	Binomial Name	Vernacular Name	Family	Plant part used	Diseases cured	Mode of preparation, administration and dosages
1	<i>Abrus precatorius</i> L.	<i>Karuppu kundumani</i>	Fabaceae	Leaf	<i>Ratha Kalichal</i>	Leaf paste is orally administered for two days.
2	<i>Acacia pennata</i> (L.) Willd	<i>Indu Mullu</i>	Mimosaceae	Leaf	<i>Jeerana Kolaaru</i>	Leaf juice is administered orally for 3 days.
3	<i>Acorus calamus</i> L.	<i>Vasambu</i>	Acoraceae	Rhizome and leaf	Internal parasites	Leaf and rhizome are ground together and the paste is administered orally for 3 days.
4	<i>Agave americana</i> L.	<i>Periya Kathalai</i>	Agavaceae	Leaf	Sprain or Muscle contraction	Fresh leaf is tied on the affected part as such for 5 days.
5	<i>Andrographis paniculata</i> Nees	<i>Chiriyai nangai</i>	Acanthaceae	Leaf	Snake bite	Decoction is administered orally or as nasal drops for two days.
6	<i>Annona squamosa</i> L.	<i>Seetha</i>	Annonaceae	Leaf, Roots	Wound	Leaf or root paste is administered orally for 5 days.
7	<i>Arisaema tortuosum</i> (Wall.) Schott	<i>Kolla Seppan kilangu</i>	Araceae	Rhizome	Haemorrhagic septicaemia in bovine	Rhizome paste is orally administered.
8	<i>Aristolochia indica</i> L.	<i>Perumarundukodi</i>	Aristolochiaceae	Leaf	Insect bite	Leaf paste is administered orally for a day.
9	<i>Azadirachta Indica</i> A.Juss	<i>Veppamaram</i>	Meliaceae	Bark	Keerapulu	Bark juice is administered orally for 3 days.
10	<i>Bauhinia racemosa</i> Lam	<i>Aathi maram</i>	Leguminosae	Leaf, Bark	<i>Kalichal</i>	Leaf or bark juice is orally administered for 3 days in the morning.
11	<i>Brassica juncea</i> (L.) Czern.	<i>Kadugu</i>	Brassicaceae	Seed oil	Wound	Seed oil is used to treat enteritis wound.
12	<i>Buchanania lanzan</i> Spreng	<i>Saraparupu</i>	Anacardiaceae	Bark	Bone fracture	Bark juice is externally applied on fractures for 5 days.
13	<i>Calotropis gigantea</i> R.Br	<i>Erukkaikai</i>	Asclepiadaceae	Latex	Dog bite wounds	Leaf or stem latex is applied on wounds up to cure.
14	<i>Canthium parviflorum</i> Lam	<i>Kaarai</i>	Rubiaceae	Leaf	<i>Kalichal</i>	Leaf juice is orally administered for 3 days.
15	<i>Capsicum annum</i> L.	<i>Milahai</i>	Solanaceae	Fruits, Leaf	Anorexia	Fruit or leaf juice is orally administered in two times.
16	<i>Cassia fistula</i> L.	<i>konraimaram</i>	Caesalpinaceae	Fruit	Dysentery	Fruit juice is orally administered for one or two times.
17	<i>Chloroxylon swietenia</i> DC	<i>Porusa maram</i>	Rutaceae	Bark, Leaf	<i>Kundi Sala Noi</i>	Bark or leaf decoction is administered orally for 2days.
18	<i>Citrullus colocynthis</i> (L.) Schrad.	<i>Kumati</i>	Cucurbitaceae	Roots	Dysentery	Root paste is orally administered for 10 days.
19	<i>Citrus limon</i> (L.) Osbeck	<i>Elumichai</i>	Rutaceae	Fruit	<i>Visa kadi</i>	Fruit juice is applied on bite place for 3 days.
20	<i>Clematis triloba</i> Thunb	<i>Laghu karni</i>	Ranunculaceae	Leaf	Throat swelling	Leaf paste is orally administered for 2 days.
21	<i>Clematisgouriana</i> Roxb.	<i>Paravalli</i>	Ranunculaceae	Root	Congestion of nose.	Leaf decoction is orally administered in morning for three days.
22	<i>Cocos nucifera</i> L.	<i>Thennai maram</i>	Arecaceae	Flower	<i>Ratha Kalichal</i>	Flower juice is orally administered for 3 days.
23	<i>Corallocarpus epigaeus</i> Benthch	<i>Aakaasagarudm</i>	Cucurbitaceae	Rhizome	Snake bite	Rhizome juice is orally administered for two days.
24	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	<i>Vidatharai</i>	Mimosaceae	Bark	<i>Kalichal</i>	Bark paste is orally administered for 2 or 3 days.
25	<i>Diospyros montana</i> Roxb.	<i>Vakkana maram</i>	Ebenaceae	Leaf	Dysentery	Leaf juice is orally administered for 2 or 3 days.
26	<i>Dodonaea viscosa</i> Jacq.	<i>Virali maram</i>	Fabaceae	Leaf	Mastitis	Leaf juice is orally administered using cloth for 2 or 3 times.
27	<i>Drymaria cordata</i> Willd	<i>Keelar</i>	Caryophyllaceae	Entire plant	Bone fracture	Leaf paste is orally administered for three days.
28	<i>Eleusine coracana</i> Gaertn.	<i>Ragi</i>	Poaceae	Seed	Bone fracture and Sterility broken horn	Plant paste is applied on the affected part and bondages were made using cotton cloth.
29	<i>Euphorbia hirta</i> L.	<i>Aamman pacharisi</i>	Euphorbiaceae	Latex	Wound	Seed powder gel is given to the cattle along with daily feeds.
30	<i>Ficus palmata</i> Forssk.	<i>Kattaal</i>	Moraceae	Leaf	Indigestion	Latex is applied in wound
31	<i>Ipomoea staphylina</i> Roem. & Schult.	<i>Unangodi</i>	Convolvulaceae	Latex	<i>Kalichal</i>	Leaf juice is administered orally for 10 days in the morning.
32	<i>Jatropha curcas</i> L.	<i>Kaatta Kotai</i>	Euphorbiaceae	Latex	<i>Komari</i>	Stem latex is orally administered in morning for 3 days.
33	<i>Lannea coromandelica</i> (Houtt.) Merr	<i>Othiya maram</i>	Anacardiaceae	Bark	<i>Kuduvi Nirkum</i>	Leaf latex is orally administered in morning for 3 days.
34	<i>Leucas aspera</i> (willd.) spreng	<i>Thumbai</i>	Lamiaceae	Leaves	Wound	Bark decoction is orally administered for 3 days in the morning.
35	<i>Momordica cochinchinensis</i> (Lour.) Spr.	<i>pavakaye</i>	Cucurbitaceae	Leaf	Keerapulu	Leaf paste is applied in wounds
36	<i>Macrotyloma uniflorum</i> (Lam.) Verdc.	<i>Kollu</i>	Fabaceae	Seed	<i>Kalichal</i>	Leaf juice is orally administered for 3 days.
37	<i>Polyalthia cerasoides</i> (Roxb.) Bedd.	<i>Senthalam</i>	Annonaceae	Bark	Weak cattle	Seed is given to cattle as feed for two days.
38	<i>Pterocarpus marsupium</i> Roxb.	<i>Vengai maram</i>	Fabaceae	Leaf	Sores	Bark juice is administered as nasal drops or given orally for 2 days.
39	<i>Albizia odoratissima</i> (L.f.) Benth.	<i>Selavanji</i>	Mimosaceae	Bark	Kunthu	Leaves are applied externally in sores.
40	<i>Semecarpus anacardium</i> L.f.	<i>Saaraa maram</i>	Anacardiaceae	Bark	Kunthu, Sappa Katti, Thiruttu Noi	Bark juice is orally administered for 2 days.
41	<i>Sida rhombifolia</i> L.	<i>Kuruthotti</i>	Malvaceae	Leaf	Throat swellings	Leaf paste is applied on swellings for 3 days.
42	<i>Tamarindus indica</i> L.	<i>Puli</i>	Caesalpinaceae	Fruits	<i>Vayiru Upputhal</i>	Fruit juice is orally administered for 2 days.
43	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	<i>Aathi Mathuram</i>	Combretaceae	Bark	Weak cattle	Fruit juice is orally administered for 2 days.
44	<i>Terminalia chebula</i> Retz.	<i>Kadukai</i>	Combretaceae	Seed, Fruit	<i>Kalichal and bone damage</i>	Bark juice is applied on body for 5 days.
45	<i>Toddalia asiatica</i> Lam.	<i>Milagaranai</i>	Rutaceae	Leaf	Swellings	Seed and fruit juice is administered in early morning for 10 days.
46	<i>Vanilla walkeriae</i> Wight.	<i>Aanai Pirandai</i>	Orchidaceae	Stem	<i>kalichal</i>	Leaf juice is orally administered for five days.
47	<i>Viscum album</i> L.	<i>Pannari</i>	Loranthaceae	Bark	Swelling	Stem juice is orally administered for 3 days.
48	<i>Zizyphus oenoplia</i> (L.)	<i>Pulilpazham</i>	Rhamnaceae	Leaf	Wounds	Bark paste is applied on swellings.

Plant parts used

The traditional healers of the Jambuthu malai use various plant parts for their medicinal preparations. Among them leaves dominates with 17 species (Fig. 2) followed by bark (14 sp.), entire plant (6 sp.), root (4 sp.), stem (4 sp.), fruit (3 sp.), seeds (3 sp.), rhizome (3 sp.) and flower (1 sp.). In most of the ethno-veterinary surveys, the leaves are the most common part used for the treatments, followed by stem, bark, rhizome, fruit, root, etc. It was evident from the studies carried out among the *Gond* and *Korku* tribes in Betul district of Madhya Pradesh (Patil *et al.*, 2015) and *Malayali* tribes of Kalrayan hills of Salem district of Tamil Nadu (Kannan *et al.*, 2016).

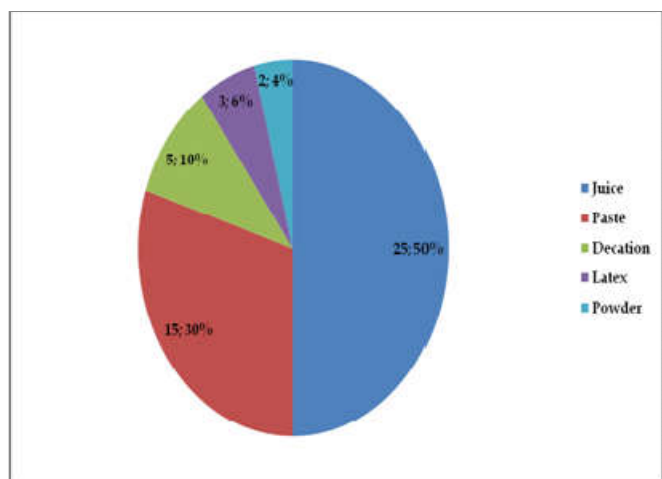


Fig No 3 Various modes of preparations of ethno veterinary medicaments in Jambuthu malai

Mode of preparation and administration

Depends on the diseases to be cured, healers of the study area are following various modes of preparation and administration of their herbal preparation for their cattle such as juice, paste, decoction and powder forms. In addition, they administer latex to cure certain diseases (Fig.3 & table 2).

Based on the preparations to be administered, the healers of the study area using two types of dosage forms namely oral and external application. Mostly oral administration is preferred for the treatment of cattle and in some cases external application also carried out based on the ailment to be cured. Oral route is considered to have rapid physiological reaction with the causative agents and increase the curative power of the medicinal plant remedies (Mekonnen, 2016).

CONCLUSION

The present documentation revealed that the *Malayali* tribal population of the study area is still depends on wild resources for their daily needs. They are using various plants for the ethno veterinary treatments and collect them from wild habitats. They are well experienced in the administration of herbs for various veterinary health care treatments. Traditional ethnoveterinary practice and use of herbs in ethno veterinary medicine is found only among the elders, livestock keepers and few practitioners of the tribal community. These medicinal plants will contribute to the economic development of the tribes of the study area.



Plate 1 Ethnoveterinary medicinal plants of Jambuthu Malai.

References

- Dwivedi, S.K. 1998. Overview of Ethnobotany Practices in India., Techniques for scientific validation and evolution of Ethnoveterinary practices in India, Bareilly. pp. 1-5.
- Gamble, J. S. 1915 - 1936. *Flora of the Presidency of Madras*. 11 Parts. (Parts 1 - 7 by Gamble and 8 - 11 by C.E.C. Fischer), London. Repr. ed. 1957. BSI, Calcutta.
- Jain, S. K. 2000. Plants in Indian Ethno veterinary medicine. Status and Prospects. *Indian Journal of Veterinary Medicine*, 20(1), 45-49.
- Kaur, D., Jaiswal, K. and Mishra, S. 2015. Ethnoveterinary practices in India: A review. *European journal of pharmaceutical and medical research*. 2, 139-143.
- Kannan, M., Senthil Kumar, T. and Rao, M. V., 2016. Ethnobotanical note on the veterinary health-care management by Malayali tribes of Kalrayan hills. *Asian Journal of Pharmacy Clinical Research*. 9 (Suppl 1), 66-82.
- Mekonnen, M., Tessema, F., Yilma, M., Getachew, T. and Asrat, M. 2016. Documentation of Ethno Veterinary Practices in Selected Sites of Wolaita and Dawuro Zones, Ethiopia. *Global Journal of Science Frontier Research*, 16, 28-34.
- Mishra, D. and Patro, L. 2016. Ethno veterinary practices among the rural people of Ganjam District, (Orissa), India - A case study on some common ailments. *Bioscan*, 3, 739-746.
- Patil, U. S. and Deshmukh, O. S. 2015. Plants used in ethnoveterinary medicines by tribal people in Betul district, Madhya Pradesh. *Indian Journal of Global Bioscience*. 4(8), 3049-3054.
- Senthil Kumar, T., Krishnamurthy K. V. (1997) Ethnobotanical study on Shevaroy hills of Eastern Ghats. *Solai Bulletin Ethnopharmacol*, pp.31-36.

- Tyasi, T.L., Zhi-Chao, L.V., Gxasheka, M.D. and Nkohla, M.B. 2015. Effectiveness of elephantorrhiza elephantine as traditional plant used as the alternative for controlling coccidian infections in goats. *Journal of Biology Agriculture Healthcare*, 5(8), 163-167.
- Udayan, P. S., George, S., Tushar, K. V. and Balachandran, I. 2006. Medicinal plants used by the Malayali Tribes of Servarayan Hills, Yercaud, Salem District, Tamil Nadu, India. *Zoo's Print Journal*, 21, 2223 - 2224.
- Upadhyay, B., Parveen, Dhaker, A.K., Kumar, A., 2010. Ethnomedicinal and ethnopharmaco-statistical studies of Eastern Rajasthan, India. *Journal of Ethnopharmacology* 4(129), 64-86.
- Yadav Manoj, Yadav Anupama and Gupta Ekta. 2012. Ethno Veterinary Practices in Rajasthan, India - A Review, 1(6), 80-82.

How to cite this article:

Periyasamy A., Muruges S and Kannan M (2018) 'Traditional Ethno -Veterinary Medicinal Plants Used By Malayali Tribes of Jambuthu Malai, Salem District, Tamil Nadu, India', *International Journal of Current Advanced Research*, 07(2), pp. 10134-10138. DOI: <http://dx.doi.org/10.24327/ijcar.2018.10138.1704>
