



ORIGINAL RESEARCH ARTICLE

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## ETHNOVETERINARY MEDICINAL PLANTS USED BY THE MALAYALI TRIBES OF VILLUPURAM DISTRICT OF TAMILNADU FOR THE TREATMENT OF MASTITIS

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### ARTICLE INFO

#### Article History:

Received 10<sup>th</sup> May, 2017  
Received in revised form  
15<sup>th</sup> June, 2017  
Accepted 23<sup>rd</sup> July, 2017  
Published online 30<sup>th</sup> August, 2017

#### Keywords:

Traditional knowledge, Mastitis,  
Vellimalai, bark, udder,  
External application.

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Citation: Soundarapandian, D., Kumaran, S., Kamaraj., E and Mujeera Fathima, 2017. "Ethnoveterinary medicinal plants used by the malayali tribes of villupuram district of tamilnadu for the treatment of mastitis", *International Journal of Development Research*, 7, (08), 14596-14598.

### ABSTRACT

The malayali tribes of Kalrayan hills in Villupuram district have indigenous knowledge for the treatment of diseases in animals and Human beings. In particular the resources for treating animals are abundant in this area. The tribals possess a lot of expertise in curing veterinary ailments using herbal medicine. The commonest disease among cattle is Mastitis which causes great economic losses and the traditional knowledge provided by the tribals will be of great help in finding a cure for this disease. The present study was undertaken in a remote area of Vellimalai region of Kalrayan hills. The information for the treatment of Mastitis among cattle was obtained from four informants belonging to different villages. About ten plants have been recorded and the different parts of the plant such as leaf, stem, root, bark and fruit have been used. Of these Leaves have been used in most cases and the plants belonged to ten different families. Most of the treatments were given as an external application to the affected part namely the udder.

### INTRODUCTION

India is one of the important dairying countries of the world. People have herds of dairy cattle and buffaloes. But the amount of milk produced is relatively less only about 5 to 8 liters of milk production per animal per day (Raihan et al., 2010). Mastitis is the most common and widespread disease of dairy cattle and buffaloes. The milk produced by the affected animals in such a condition shows curdling and is identified as an abnormality. The inflammation of the parenchyma of the udder cells caused due to invasion of bacteria into the canal is the main area for the development of the disease. Mastitis leads to reduced milk production by the affected animals. Mastitis can also be caused when animals give birth before the normal length of pregnancy is completed. This leads to economical losses as the young calf also dies due to premature birth. Sometimes the milk men kill the calves and milk by hand without calves and this leads to disease, increasing

veterinary cost and death in severe cases (Mooventhan et al., 2015). Since time immemorial human communities have been depending on herbs and plant products for treatment of animal diseases which are very effective and documentation is important before the information is lost forever (Tiwari & Pande, 2010). The present study is intended to contribute to this developing body of information and knowledge by the people on plant based ethnoveterinary medicines helping to cure diseases using the Malayali tribals of Kalrayan hills area in Tamil Nadu.

### Materials and Methods

The present study was undertaken in a remote area of the Vellimalai region of Kalrayan hills for different ethnoveterinary medicinal plants used in the treatment of domestic animals like cattle. The informants contacted for the present study were Mr.Theerthan (65), Mr. Arumugam, Mr.Vadamalai (70) and Ramaswamy (50) three field visits to

the study area were undertaken during the month of June 2014, December 2015 and May 2016 to collect information on the sources of plants used for treatment of Mastitis. The collection of information from the informants was done using the transect walk method (Vogel et al., 2004).

the frequently used parts of the plants. (Fig. 1) Ethnoveterinary prescriptions were commonly prepared by grinding, crushing and making decoction in water while the general methods of administration were feeding and topical application.

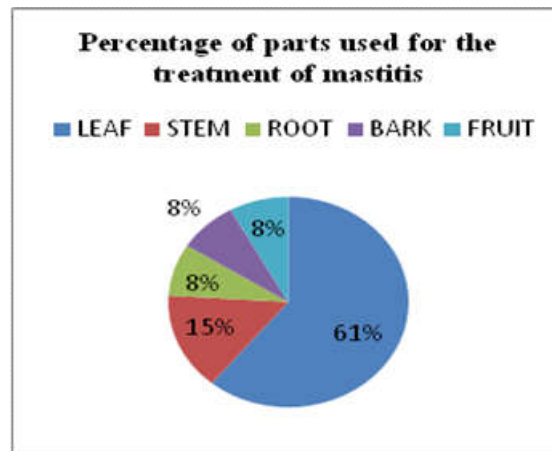


Fig. 1. Percentage of plant parts used For the treatment of mastitis

Table 1. Ethnoveterinary plants used by tribals of Kalrayan hills in Villupuram district, Tamil Nadu

S. No	Vernacular Name	Binominal	Family	Part used	Locality & Resource person	Mode of preparation
1	Paal Poondu	<i>Euphorbia cyathophora</i> Murray	Euphorbiaceae	Leaf	Innadu/Theerthan	Leaves alone are ground into a paste administered orally and applied externally on the teats.
2	Lemon tree	<i>Citrus limon</i> (L.) Osbeck	Rutaceae	Leaf	Kariyalur/Arumugam	Leaves alone ground well and added with chalk and applied externally on the neck and teats.
3	Kattumurungai +	<i>Moringa concanensis</i> Nimmo	Moringaceae	Leaf/bark	Thekkumarathuva lavu/ Vadamalai	All the ingredients are ground into a paste and applied externally on the teats.
4	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome		Leaves alone are ground well into paste and applied externally on the neck and teats.
5	Kodiyotti + Manathakkali	<i>Argemone mexicana</i> L.	Papaveraceae	Leaf	Nadumadure/Ramaswamy	All the ingredients are ground into a paste and applied externally on the teats.
6		<i>Solanum americanum</i> Mill.	Solanaceae	Leaf		Leaves and fruit alone are ground into paste and applied externally on the teats.
7	Vazhai	<i>Musa paradisiaca</i> var. <i>acicularis</i> G.Forst.	Musaceae	Fruit and Leaf	Nadumadure/Ramaswamy	All the ingredients are ground into a paste and applied externally on the teats.
8	Seeravalai Keerai +	<i>Trianthema portulacastrum</i> L.	<i>Aizoaceae</i>	Leaf and stem	Nadumadure/Ramaswamy	All the ingredients are ground into a paste and applied externally on the teats.
9	Katrazhai	<i>Aloe vera</i> (L.) Burm.f.	Xanthorrhoeaceae	Leaf		Aerial roots or leaves alone are ground into a paste and applied externally on the teats.
10	Seenthil kodi	<i>Tinospora sinensis</i> (Lour.) Merr.	Menispermaceae	Root	Nadumadure/Ramaswamy	

The information was recorded on a video camera. Samples collected include stem twigs, leaves, bark flowers, etc., and details regarding the samples were obtained from the local people. Samples were photographed from the natural habitats and recorded for future references. They were then tagged and numbered for herbarium preparation (Kumaran et al., 2014).

## RESULTS AND DISCUSSION

The present study indicates that about 10 species of ethnoveterinary medicinal plants belonging to 10 different families were used for the animals as fodder in the research area. The malayali Tribal community of Kalrayan hills used these ethnoveterinary medicinal plants in the treatment of mastitis. The represented families (Table 1) were Euphorbiaceae, Rutaceae, Moringaceae, Zingiberaceae, Papaveraceae, Solanaceae, Musaceae, Portulacaceae, Agavaceae and Menispermaceae. Leaves, stems and bark were

The effectiveness of the treatment was linked to the knowledge on the nature of the veterinary diseases. Among the parts used as medicine it was found that leaves, stem and barks were the most used for treating Mastitis. The results obtained in the present study are in accordance with the earlier reports of Dilshed et al., (2010), Yadav et al., (2014) Kaur et al., (2015) Pande et al., (2007), who have recorded some of the plant like *Citrus limon*, *Curcuma longa*, *Musa paradisiaca*, *Tinospora portulacastrum*, *Aloe vera* and *Tinospora cordifolia* as mentioned in this paper for the treatment of mastitis. But the use of plants like *Euphorbia cyathophora*, *Moringa concanensis*, *Argemone mexicana*, *Solanum nigrum* have not been reported in the earlier studies.

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