



An Investigation on Ethno-Veterinary Medicinal Plant of Practices of *Pedaliump murex* L. From Namakkal District, Tamilnadu, India

Ramanathan.R¹, Bhuvaneswari.R², Divakar.P³ and Dhandapani.R^{1*}.

¹PG and Research Department of Botany, Government Arts College, Ariyalur - 621713, Tamilnadu, India.

²Department of Botany, Sri Saradha College for Women, Perambalur, Tamilnadu, India.

³PG and Research Department of Botany, Arignar Anna Government Arts College, Namakkal, Tamilnadu, India.

Received: 25 Mar 2019 / Accepted: 17 Apr 2019 / Published online: 1 Jul 2019

*Corresponding Author Email: paniroever2007@rediffmail.com

Abstract

Ethno-veterinary medicinal plant used to treat for diarrhoea disease from Namakkal district, Tamilnadu, India. The paper deals with ethno veterinary medicinal plant of *Pedaliump murex* L. practices to treat cattel for diarrhoea disease. The present work was carried out as the first attempted to explore of *P. murex* L. of ethno-veterinary interest and to record the traditional ethno-veterinary knowledge in cattle for diarrhoea disease. The collection of pharmacological data from this study area of Namakkal district can provide a basis for the integration of Mattu vaithiyar uses in the alternation veterinary medicine this valuable information of ethno veterinary medicine can utilized future use made by pharmaceutical companies.

Keywords

Ethno-veterinary medicinal plant, *Pedaliump murex* L. Diarrhoea disease, Cattel, Mattu vaithiyar.

INTRODUCTION

Ethno-veterinary practices are the community based indigenous knowledge and the use of medicinal plants and procedures applied for their preparation was transmitted from generation to generation. It has been reported that as many as 70% (90% in some communities) of the world population continue to rely mainly on their own localized ethno medicine for personal as well as veterinary healthcare. Ethno-veterinary medicine was practiced as early as 1800 B.C at the time of King Hamurabi of Babylon who formulated laws on veterinary fees and charged for

treating cattle and donkeys. Cattle are the common livestock in India and occupy a prominent position in agricultural system and economy of the country. Their products are indispensable in our daily life. The traditional drugs for animals based on both plant and animal products have received less attention. Ethno-veterinary medicine often provides cheaper options compared to western drugs and the products are locally available and more easily accessible. In the face of these and other related factors there is increasing interest in the field of ethno veterinary research development [1-3]. An earlier study done by

Bhatt [4] recorded various ethno veterinary plants used by the tribal's of Gujarat, again reported so many plants in India for the treatment of various diseases in livestock [5-8]. The ethnic people frequently depend on traditional knowledge for the management of animal health problems and to improve their productivity.

Ethno-veterinary medicine deals with people's knowledge, skills, methods, practices and beliefs about the care of their animals. Ethno-veterinary medicine often provides cheaper options than comparable western drugs, and the products are locally available and more easily accessible. In the face of these and other factors there is increasing interest in the field of ethno-veterinary research and development [9-11]

In recent years, interests in ethno- veterinary investigations have been increased enormously on national and international level. Ancient ethnobotanical literature suggests that the tribal, non-tribal and rural populace has been using wild ethno flora since long ago for curing various diseases and disorders in the pet/domesticated animals. All these plants should be screened scientifically in order to investigate newer sources of ethno-veterinary drugs and medicines. Fortunately, since last three to four decades considerable progress has been made in the ethno-veterinary sciences due to recent ethnobotanical and ethno medicinal explorations [13]

The present study was aimed at collections of plants, preparation of drugs and information of traditional ethno-veterinary practice in Namakkal district, Tamil Nadu, India. This study area that no scientific report has been done indegonous knowledge of veterinary remedies to treat cattle for diarrhoea disease. *Pedaliu murex* L. have been not explored on ethno-veterinary practice for cattle disease. The present work was carried out as the first attempted to explore of *P. murex* L. of ethno-veterinary interest and to record the traditional ethno-veterinary knowledge in cattle for diarrhoea disease.

MATERIALS AND METHODS

Study area

Namakkal district is an administrative district in the state of Tamil Nadu, India. The district was bifurcated from Salem district with Namakkal town as headquarters on 25-07-1996 and started to function independently from 01-01-1997. The district has 6 taluks (subdivisions); Tiruchengode, Namakkal, Rasipuram, Velur, Kolli Hills, Sendamangalam (in descending order of population) and has two revenue divisions; Namakkal and Tiruchengode [Fig 1]. The

district is bounded by Salem on the north, Karur on the south, Trichy and Salem on the east and Erode on the West. The geographical area of the district is 3363.35 Kms which lies between 11.0⁰ and 11.36⁰ north latitude and 77.28⁰ and 78.30⁰ east longitude. For administrative purposes, the district has been divided into 2 revenue divisions, 4 Taluks, 30 Revenue firkas and 454 revenue villages (Including group Villages). For local arrangements, the district has been divided into 5 municipalities, 15 panchayats unions, 19 town panchayats and 331 village panchayats.

Filed visit

Filed visit were undertaken to different location of villages. Information about the plant possessing anti - diarrhoea disease activities were collected from tribels and native medicine men.

Plant identification

The study plant was identified with the help of available India literature and the identified were verified with the help of Rapinet Herbarium, St. Joseph's College, Tiruchirapalli, Tamil nadu, India. Herbarium specimen was deposited in the Rapinet Herbarium, st. Joseph's college, Tiruchirapalli, Tamil Nadu, India. The plant herbarium number was obtained (*Pedaliu murex* L.) [RHT 29241].

Preparation of powder of *P.murex* L.

The collected leaves of *P.murex* L. was shade dried at room temperature for 3 days and sundry for 3 days and then milled in to coarse powder by a mechanical grinder [14].

Ethno-veterinary treatment to diarrhoea disease

This method was used by Toyang *et al* [15]. Drenching is the oral administration of ethno veterinary drugs in a liquid form 40 gm powder of *P.murex* L. mixed with distilled water. After measuring the aqueous extract of *P.murex* L., it is given to the cattles using by "Kathukkuvalai". It is easily done by raising the Kathukkuvalai into the mouth. Inserting two fingers on the other side of the mouth to press the tongue downwards, helps to hold mouth open pour the aqueous extract of *P.murex* L. gently at intervals.

Photography

Photography were taken for the macroscopic characters and morph metric characters of the plants with the help of sony cyper shoot camera and colour print outs were made.

RESULTS AND DISCUSSION

Pedaliu murex L. is a much-branched herb 15-38 cm. high; stems and branches ofter slightly rough with scaly glands [Fig-2]. The fruit is used as a demulcent, diuretic, antiseptic and aphrodisiac. A

mucilaginous infusion of the fruit is given in incontinence of urine, spermatorrhoea, nocturnal emission and impotence.

Namakkal district comes under the north western agro climatic zone of Tamil Nadu. It is situated in the dividing portion of two watersheds between Cauvery and the Vellar system with the taluks of Attur, Rasipuram and Namakkal on the east and Salem, Omalur and Mettur on the west. Tiruchengode taluk alone is placed under western agro-climatic zone. The present study was designed to document on the traditional knowledge of the plants used by tribes and native medicinal men to treat veterinary diseases of diarrhoea. Ethno veterinary practices has been studied for diarrhoea in the field area of Kattur and Kattukottai, Muthukalipatty and Murungapatty village at Rasipuram taluk of Namakkal district. Besides the above two zones, Kolli and a few isolated hills and ridges are scattered over Namakkal, Rasipuram and Tiruchengode and along with the valleys and rolling hills, make up the characteristic topography of the district.

The present study on common veterinary diarrhoea disease and their treatment of *P.murex* L herbal medicine in Namakkal district has made a remarkable achievement in gaining the knowledge about most common study plants preparation used by the local traditional medicinal man. During the study was observed that older farmer (50-75 age) are knowledgeable about ethno veterinary medicine.

Aqueous extract of *P.murex* L whole plant was treated to the cow twice a days for 3-4 days 40 gm powder mixed with 500 ml of distilled water. After treatment of 3 days, *P.murex* L was completely cured to cow for diarrhoea disease (Fig-3 and 4). Aqueous extract of *P.murex* L whole plant was treated to the goat twice a day's for 2- 3 days 20 gm powder mixed with 250 ml of distilled water. After treatment of 4 days, *P.murex* L was completely cured to goat for diarrhoea disease (Table-1 and Fig-5).

The knowledge regarding ethno veterinary medicine is getting lost due to the advancement of modern

medicines by commercial pharmaceuticals and many tribal communities changing their professions because of rapid socioeconomic and cultural changes. But ethno veterinary medicine is still persistence due to some factors which include high costs, inaccessibility and other factors linked with the modern veterinary system.

The various plant parts used included leaf, stem, root, bark, seed, fruit and even flower. Leaves constituted major portion of plant part used. Majority of earlier work on ethno veterinary medicine recorded that leaves were major portion used in various treatments. Plant mostly used for oral administration the result was corroborated with earlier record [16].

Traditional medicine is, in many rural areas of the Namakkal district sometimes the only available alternative to expensive or unavailable modern orthodox health care for the management of both human and animal health. The high cost of pharmaceutical products and lack of access to veterinary services are significant reasons for farmers to use non-conventional medicines. Small scale farmers use plants extensively for the treatment of livestock diseases [17]. It is a common thread running through most traditional medicinal systems in India. The effect of aqueous extract of whole plant part of *Pedaliium murex* orally treated to 10 cattle for diarrhoea disease. In aqueous extract of *P.murex* most significant effective against for diarrhoea disease within 3-4 days.

The ethno veterinary pharmaceutical data about the usage of *P.murex* to treat the diarrhoea disease in cattles. In the present study is a preliminary and first report. Use of study plants explained by Mattu vaithiyars are not yet been explored. But the collection of pharmacological data from this study area of Namakkal district can provide a basis for the integration of Mattu vaithiyar uses in the alternation veterinary medicine this valuable information of ethno veterinary medicine can utilized future use made by pharmaceutical companies.

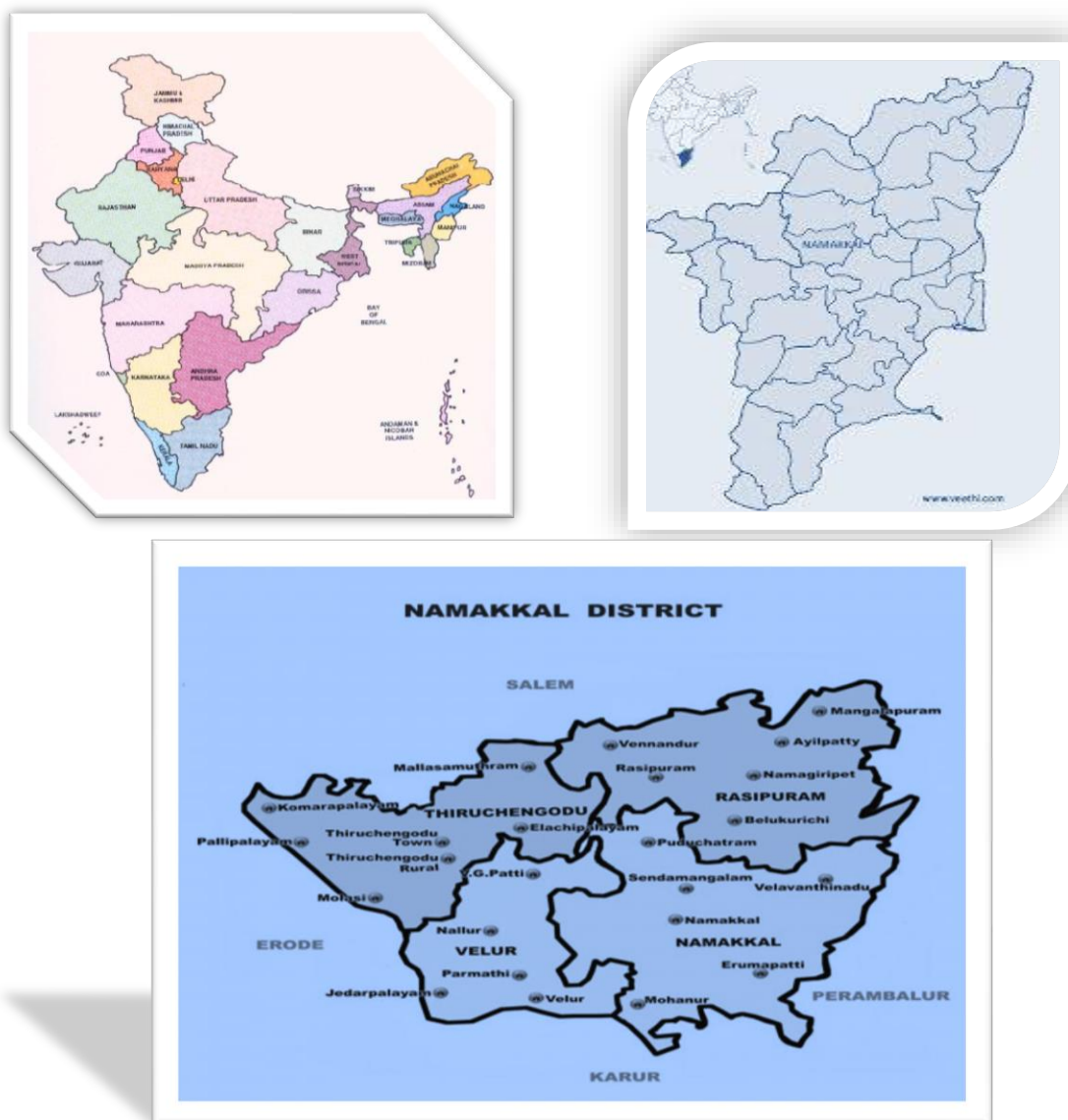


Fig-1. Study area of Namakkal district

Fig-2



A. Habit and Habitat of *P. murex* L.



B. Single twig with flower of *P. murex* L.



C. Single twig with fruit of *P. murex* L.

Fig-3



A. Diarrhoea with cow in Muthukalipatty village at Namakkal district.



B. Oral administration of 40 gm powder of aqueous extract of *P.murex* L. by kathukkuvalai.



C. After 3 days diarrhoea disease cured to cow.

Fig-4



A. Diarrhoea with cow in Kattukottai village at Namakkal district.



B. Oral administration of 40 gm powder of aqueous extract of *P.murex* L. by kathukkuvalai.



C. After 4 days diarrhoea disease cured to cow.

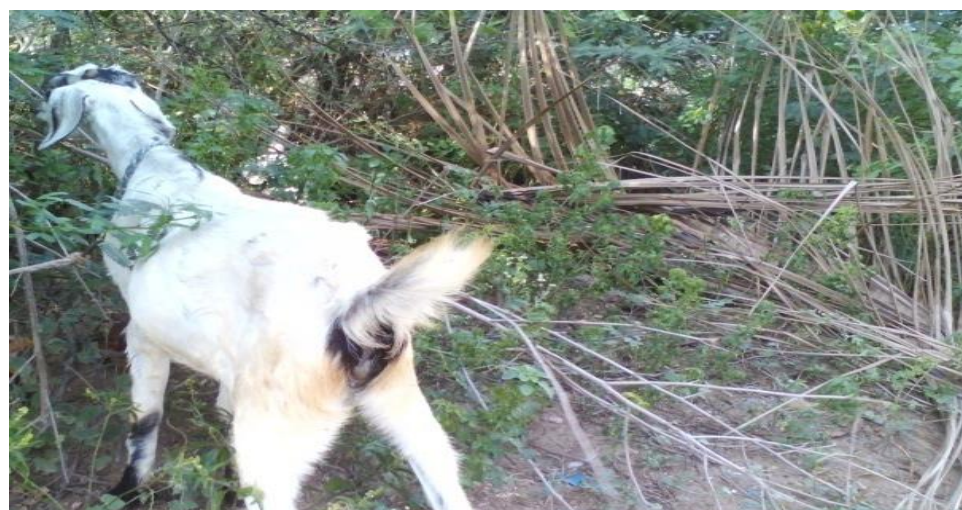
Fig-5



A. Diarrhoea with goat in kattur village at Namakkal district.



B. Oral administration of 20 gm powder of aqueous extract of *P.murex* L. for diarrhoea.



C. After 3 days diarrhoea disease cured to goat.

Table 1: Aqueous extract of aerial parts of *Pedaliu murex* L. orally treated to cattle.

S.No	Farmers name	Village	Cattle	Aqueous extract		Cured days
				Dose	Times of dosage	
1	M.Rani	Kattur	Cow	40 gm	4-6 times	3 days
2	A.Sakthivel	Kattur	Goat	20 gm	3-5 times	3 days
3	C.Murugan	Kattukottai	Cow	40 gm	4-6 times	4days
4	A.Janairthan	Kattur	Buffalo	40 gm	4-5 times	2 days
5	P. Ramesh	Kattukottai	Goat	40 gm	3-5 times	2 days
6	T. Jakathiesh	Murungapatty	Cow	40 gm	4-6 times	3 days
7	A.Vankadesh	Muthukalipatty	Cow	40 gm	4-5 times	3 days
8	S. Saker	C.S puram	Calf	40 gm	3-5 times	2 days
9	P. Baby	Kattukottai	Goat	20 gm	5-6 times	3 days
10	K. Vaithie	Agravaram	Cow	40 gm	4-6 times	3 days

CONCLUSION

The study plant could be selected for screening to identify active phyto-chemical compounds and develop new drugs. Further researcher on *Pedaliom murex* can help in the development of effective medicine for cattle forming to diarrhoea disease.

ACKNOWLEDGEMENT

The authors are thankful to mattu vaithiyars of Namakkal district, Tamilnadu, India for the successful conduction of works.

REFERENCES

- [1] Zschocke S., Rabe, T., Taylor, J.L.S., Jager, A.K and Van Standen, J. Plants part substitution. Away to conserve endangered medicinal plants. J. Ethnopharmacol., 71: 28 – 292. (2000)
- [2] Masika P.J., Van Averbeeke, W and Sonandi, A. Use of herbal remedies by small scale farmers to treat livestock disease in central Eastern cape province, South Africa. J. South. Africa. Vet. Association., 71: 87-91. (2000)
- [3] Reshma Khatoon, Ajit Kumar Das, P.K., Singh and Dutta B.K. Ethno veterinary plants used by Kom tribe of Manipur, India. Bioresource and Trad. Knowledge of North East India., 303-306. (2013).
- [4] Bhatt D.C., Matalia, K.D and Mehta, S.K. Observation on ethno veterinary herbal practices in Gujarat, Ethnobotany., 13 (91). (2001).
- [5] Girach R.D., Brahman, M., and Misra, M.K. Kolk veterinary herbal medicines of Bhadrak district, Orissa, India. Ethnobotany., 10: 85-88. (1998).
- [6] Harsha V.H., Shripathi, V and Hegde, G.R. Ethno veterinary practices in Uttra Kannada district of Karnataka. Indian J.Trad. Knowledge., 4: 253-258. (2005).
- [7] Yadav D. Ethno veterinary plants from tribes in habited localities of Ratlam district, Madhya Pradesh, India. Indian J. Trad. Knowledge., 33: 64 - 67. (2009).
- [8] Rahman C.H., Ghosh, A., and Mandal, S. Studies on the ethno veterinary medicinal plants used by the tribes of Birbhum district, West Bengal. Indian J. Trad. Knowledge., 33: 333-338. (2009)
- [9] Tabuti J.R.S., Dhillion, S.S and Ley, K.A. "Ethno veterinary medicines for cattle (Bos Indicus) in Bulamogi county, Uganda: Plant species and mode of use". J. Ethnopharmacol., 88: 279 – 286. (2003).
- [10] Masika P.J and Afolayan A.J. "An ethnobotanical study of plants used for the treatment of livestock disease in the eastern cape province, South Africa". Pharm. Biol., 41: 16 – 21. (2003).
- [11] Yineger H., Kelbessa, E., Bekele, T and Lulekal, E. "Ethno veterinary medicinal plants at bale mountains national Park, Ethiopia". J.Ethnopharmacol., 122 : 55 – 70. (2007).
- [12] Kone W.M and Atindehou, K.K." Ethnobotanical inventory of medicinal plants used in traditional veterinary medicine in northern cote d'Ivoire (West Africa). South Afr. J. Bot., 74: 76-84. (2008).
- [13] Salave A.P., Gopal Reddy, P and Diwakar, P.G. Some unreported ethnobotanical uses from Karanji ghat areas of Pathardi Tahasil in Ahmednagar district (M.S.) India. IJABPT., 2 (4): 240-245. (2011).
- [14] Harbone J.B. Phytochemical methods. 1st edn. London: Chapman and Hall. (1973).
- [15] Toyang N.J., J. Wanyama, M. Nuwanyakpa and S. Django. Ethno veterinary Medicine. A practical approach to the treatment of cattle diseases in sub-Saharan Africa. Agrodok 44. Edited by H. Mertens. Agromisa Foundation and CTA, Wageningen, The Netherlands. (2007).
- [16] Eswaran S., Boomibalagan, P and S. Rathinavel . Ethnoveterinary Medicinal Practices of the Villagers of Usilampatti Taluk of Madurai District, India. International Journal of Botany. Volume 9 (1): 37-43, 2013. (2013).
- [17] Masika P.J., Van Averbeeke, W and Sonandi, A. Use of herbal remedies by smallscale farmers to treat livestock disease in central Eastern cape province, South Africa. J. South. Africa. Vet. Association., 71: 87-91. (2000).