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Research Article

ETHNOBOTANICAL SOURCES OF VETERINARY MEDICINE FROM KALRAYAN HILLS IN TAMILNADU WITH SPECIAL REFERENCE TO BONE FRACTURES AND TREATMENT OF WOUNDS

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ABSTRACT

The malayali tribal communities of the Kalrayan hills possess a rich repository of medicinal plant knowledge for curing a variety of veterinary ailments. The present study has been conducted to collect ethnoveterinary information from the tribals with respect to the treatment of bone fractures and wounds in domestic animals. 4 resource persons were contacted on our visits to a remote area in the Vellimalai region of the Kalrayan hills. Data on 14 different plants species belonging to 12 different families have been obtained and analysed.

INTRODUCTION

Many traditional Ethnoveterinary medicines have been the source of drug discovery in modern chemotherapy. Tribal communities frequently used traditional knowledge for the management of veterinary problems to improve productivity (Selvaraju *et al,* 2011). The medicinal plant knowledge has accumulated over many centuries based on various medicinal systems like Ayurveda, Unani and Siddha (R.Parthiban *et al*.2016) Tribal communities all over the world have a store house of information on veterinary medicine. Ethnoveterinary medicinal knowledge is vast in our country. In Tamilnadu Kollimalai, Pachamalai, Servarayan hills and Yercaud belong to the scheduled tribes. The Malayali tribes are distributed in the hilly areas of North Arcot, SourthArcot, Salem and Tiruchirapalli districts. They consist of various groups of people such as cultivators, woodmen and shepherds. Their origin is Kanchipuram. They cultivate small millets such as samai, kambu, and varagu; cereals such as cholam, paddy and Ragi along with other crops like groundnut, pulses, green gram, horse gram etc. They domesticate animals like cattle, buffaloes, goats, sheep, pigs and poultry. The present study has been conducted in the Kalrayan hills area to collect data on the ethnoveterinary practices for curing the most common problem of wounds and fractures among domestic animals.

MATERIALS AND METHODS

This investigation is mainly based on Ethnoveterinary medicinal plants information obtained from the malayali tribal people living in a remote area of the Vellimalai hills. The geographical location of this area is latitude 11°20'–12°05'N and longitude 78°28'- 79°05"E, and is located 820 meters above Mean Sea Level. The present study was undertaken for different ethnoveterinary medicinal plants used in the treatment of wounds and bone fractures of domestic animals. The informants contacted for the present study are Mr.Theerthan (aged 65 years) Mr.Arumugam (aged 60 years), Mr.Vadamalai (aged 70 years) and Mr.Kuppuswamy (aged 75 years). Three field visits to the study area were undertaken during the month of December 2013, May 2014 and September 2014 to collect information on the sources of plants used for treatment of wounds and bone fractures. Four resource persons were contacted to provide information regarding this treatment (Bernard, H.R. 2002) Snow ball sampling and transect walk method (Vogl *et al*., 2004) was followed to gather the information which was recorded on a video camera. Samples collected include stems twigs, leaves, bark, flowers etc., and details regarding the samples were recorded 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 13 species of ethnoveterinary medicinal plants belonging to 12 different families were found in the study area. The malayali tribal community of Kalrayan hills used these medicinal plants in the treatment of wounds and bone fractures. The represented families were Lamiaceae, Zingiberaceae, Convolvulaceae, Leguminosae, Amaranthaceae, Moraceae, Vitaceae, Asparagaceae, Meliaceae, Combretaceae, and Euphorbiaceae (Table-1). The leaves,

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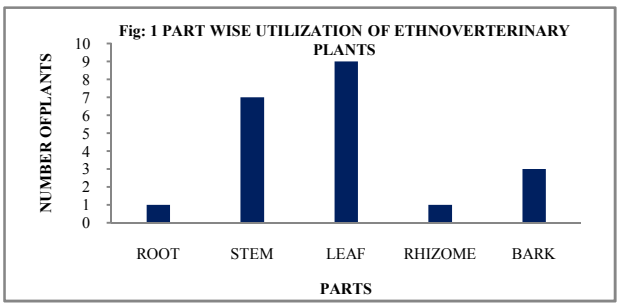
stems, rhizome, root and bark were the frequently used parts of the plants.Ethnoveterinary prescriptions were commonly prepared by grinding, crushing and making a decoction in water and the general methods of administration were feeding and topical application. The effectiveness of the plants was linked to the knowledge on the nature of the veterinary diseases. Among the parts used as medicine, it was found that leaves, stems and barks were the most used for treating wounds and fractures of animals.

Table 1 Ethnomedicinal aspects of plants used for heeling of wound and bone fracture of animals in the Kalrayan Hills.

S.No	Vernacular	Binomial Name	Family	Part used	Resource person/ Locality	Mode of Preparation
1	Sethupunnu plant	*Anisochilus carnosus* (L.f.) Wall.	Lamiaceae	Leaf	Mr.Theerthan Innadu	Leaves and Rhizome alone are ground into paste and given as a topical application
2	Manjal	*Curcuma longa* L.	Zingiberaceae	Rhizome	Mr.Theerthan Innadu	
3	Onangodi	*Ipomoea sumatrana* (Miq.) Ooststr.	Convolvulaceae	Leaf and stem	Mr.Arumugam, Kariyaloor	Latex of stem and leaf applied externally on the fractured bone.
4	Kattupala	*Pterocarpus marsupium* Roxb.	Leguminosae	Bark	Mr.ArumugamKariyaloor	Bark alone ground into paste and applied as a bandage to heal wounds and fractures.
5	Nayuruvi	*Achyranthes aspera* L	Amaranthaceae	Leaf	Mr.Kuppuswamy Madapattu	Leaves alone are ground into paste and administered orally, then onangodi is applied as a bandage to heal bone fractures.
6	Onangodi	*Ipomoea sumatrana* (Miq.) Ooststr.	Convolvulaceae	Leaf and stem	Mr.Kuppuswamy Madapattu	Latex of stem and leaf applied externally on the fractured bone
7	Athi tree	*Ficus racemosa* L.	Moraceae	Leaf and stem	Mr.Kuppuswamy Madapattu	Latex of stem and leaf applied externally on the fractured bone.
8	Alamaram	*Ficus benghalensis* L.	Moraceae	Leaf and stem	Ramaswamy Nadu madur	Latex of stem and leaf applied externally on the fractured bone.
9	Gundumani	*Abrus precatorius* L.	Leguminosae	Root	Ramaswamy Nadu madur	Roots alone ground into paste and applied externally on the hind limbs and fore limbs to heal wounds.
10	Pirandai	*Cissus quadrangularis* L.	Vitaceae	Stem and Leaf	Ramaswamy Nadu madur	Stem and leaves alone are ground into paste and applied externally to for bone fractures.
11	Aanikatrazai	*Agave americana* L.	Asparagaceae	Leaf	Ramaswamy Nadu madur	Leaf alone ground into paste and applied externally to heal fractured bone.
12	Veppilai	*Azadirachta indica* A.Juss.	Meliaceae	Stem and bark	Ramaswamy Nadu madur	Stem and bark alone are ground into a paste and applied as a bandage for healing of wounds.
13	Marutham tree	*Terminalia arjuna* (Roxb. ex DC.) Wight &Arn.	Combretaceae	Stem and bark	Ramaswamy Nadu madur	Stem and bark alone are ground into a paste and applied externally on fractured bone
14	Aamanukku	*Ricinus communis* L.	Euphorbiaceae	Leaf	Ramaswamy Nadu madur	Leaves are alone ground into a paste and applied for bone fractures.

The results obtained in the present study are in accordance with the earlier reports of Phonani *et al* (2010), Parthiban *et al* (2015), Selvaraj *et al* (2011), Gebrezgabiher *et al* (2013), C.Alagesaboobathi *et al* (2015), Ranjana *et al* (2014), Bhaskar *et al* (2015), Patil and Deshmukh (2015), Ramsankar *et al* (2015), who have recorded some of the plants like, *Agave americana* L, *Achyranthes aspera* L, *Azadirachta indica* A. Juss., *Ficus benghalensis* L., *Abrus precatorius* L., *Cissus quadrangularis* L., *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn. and *Ricinus communis* L as mentioned in this paper for the treatment of wounds and fractures. But the use of plants like *Anisochilus carnosus* (L.f.) all. *Curcuma longa* L., *Ipomoea sumatrana* (Miq) oststr, *Pterocarpus marsupium* Roxb. have not been reported in the earlier studies. Among these plants *Ipomoea sumatrana* (Miq) Ooststr., has been mentioned by 2 resource persons for the same complaint. Among the plant parts, leaves were used in the maximum number of cases (Fig: 1)



CONCLUSION

It can be concluded from the present study that the malayali tribes have a rich repository of traditional medicinal knowledge for curing diseases related to wound healing and bone fractures in animals.

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