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Ethnomedicinal Plants in Karuppanar Sacred Grove of Nakkambadi Village of Ariyalur District, India for Wound Treatment

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KEYWORDS

Sacred grove, wounds, burns, cuts, cracks, medicinal plants.

A B S T R A C T

The study was undertaken for documentation of ethnomedicinal plants in the treatment of wounds present in the Karuppanar sacred grove of Nakkambadi village, Ariyalur district. Generally, sacred groves are undisturbed region with rich medicinal plant species. Totally 21 plant species belonged to 13 families were identified to treat different types of wounds like cuts, burns, cracks, etc. The information such as botanical name, family, habit and habitat were discussed. The highest number of species belonged to Fabaceae (6 species). Trees and herbs were used more often followed by shrubs and climbers. Different types of wounds followed by people are classified into 12 categories were recorded.

Introduction

India has the ancient indigenous knowledge of medicinal and herbal medicines accumulated through many centuries. This knowledge of curing human illness is based on different Indian systems of medicine, practiced by various communities such as Ayurveda, Unani and Siddha (Gadgil, 1996). Wound is a very common problem in day to day activities of human life. It is due to physical, chemical, thermal, microbial or immunological insult to the tissue (Bhat *et al.*, 2012). According to the Wound Healing Society, wounds are 'physical injuries that result in an opening or break of the skin causing disturbance in the normal skin anatomy and function' (Strodtbeck, 2001). In India ethnobotanical information on plants for treatment of cuts, wounds and burns is widely scattered (Subramanian *et al.*, 2011). The present paper aims to highlight the traditional methods to cure wounds by different communities in the Karuppanar sacred grove of Nakkambadi village.

Material and Methods

The present study was conducted in Karuppanar sacred grove of Nakkambadi village, Sendurai (taluk) of Ariyalur district,

Tamil Nadu state, India. The sacred grove covered an area of 2 acres. It is located 20 km towards north from district headquarters Ariyalur. Nakkanbadi is surrounded by Veppur taluk towards west, Ariyalur taluk towards south, Jayamkondam taluk towards east, Andimadam taluk towards east. The latitude 11.036693 and longitude 79.554298 are the geo coordinate of the Nakkambadi. The elevation of the area is 77m above the mean sea level (msl). The annual rainfall found here is 967 mm and the temperature varies from 22°C to 40°C. The type of soil present in the area is alluvial soil. The vegetation of Karuppanar sacred grove is tropical dry evergreen forest type.

Results and Discussion

The present study resulted in recording 21 medicinal plant species were used to treat different types of wounds. In all 21 plants belonging to 13 plant families have been documented in the present study (Table.1). The highest number of species belonged to Fabaceae (6 species) followed by Amaranthaceae, Acanthaceae, Lamiaceae (2 species each). Trees and herbs were used more often (33%), followed by shrubs (29%) and climbers (5%)(Fig.1). In the present study, it is clear that leaves are most frequently used, followed by the roots, whole plants, stem, seed, fruit and succulent stem (Fig. 2). Wounds types ranged from simple cuts to highly intricate gangrene in humans. It includes both external and internal damages of tissues like burn, cuts, crack foot, animal bites, gingival wounds, aphthae, etc in humans whereas in cattle it was a result of foot and mouth diseases. Traditional medicines for treatment of wounds are either used externally or internally or sometimes as both depending on the types of wound. The drug formulation are normally five types viz. paste with water or limejuice, juice extract from fresh juicy parts, aqueous decoction, etc. The external application is used exclusively for skin diseases like cuts, wounds, burns, crack foot, etc. Almost all external applications are in the form of paste or in the form of oil. The internal use of plant medicines are in the form of juice from the fresh parts of the plant. The different types of wounds treated by people are classified into 12 categories. Eight plants are used to treat the wounds and cuts whereas six plants are used to cure poison bite (Table. 2 & Fig. 3).

Figure.1 Habit wise usage of plants for wound healing.

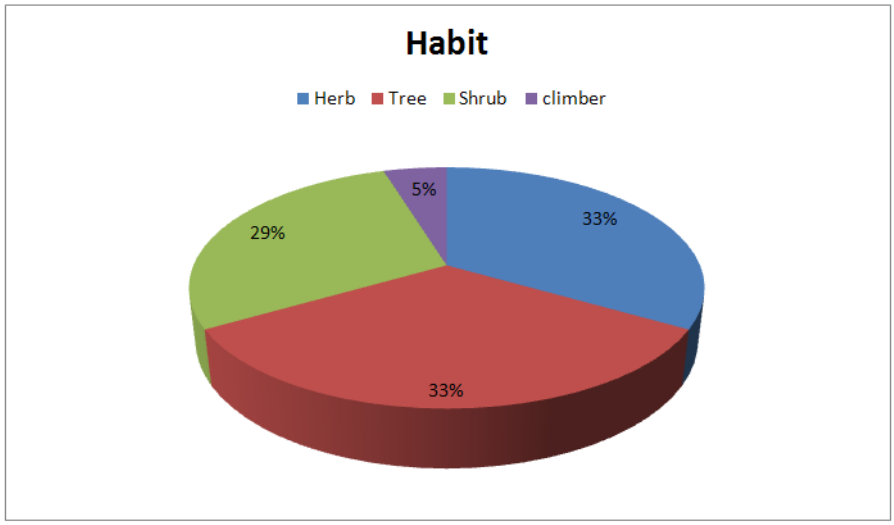


Table.1 List of plants used for treating wounds.

Binomial name	Family	Habit/ Habitat	Part used	Medicinal uses
Achyranthes aspera L.	Amaranthaceae	H/Wi	W, L	Cuts, gingival wounds, ulcer.
Adhathoda zeylanica L.	Acanthaceae	Sh/Wi	L, S	Cut, wounds
Alternanthera sessilis (L.) R. Br. ex Dc	Amaranthaceae	H/ Wi	W	Aphthae
*Azadirachta indica*A. Juss.	Meliaceae	T/ Wi	L	Cuts, dog bite
Barleria prionitis L.	Acanthaceae	Sh/Wi	L	Foot and mouth diseases in animals
Calotropis gigantea (L.) W.T.Aiton.	Apocynaceae	Sh/Wi	R	Gingival wounds, poison bite.
Cassia fistula L.	Fabaceae	T/Wi	L	Wounds, burns.
Clitoria terrnatea L.	Fabaceae	Cl/Wi	R	Poison bite, wounds.
Cocos nucifera L.	Arecaceae	T/Cu	L, Fr	Aphthae, burns, cuts.
Cynodon dactylon (L.) Pers.	Poaceae	H/Wi	W	Burns,wounds,poisonbite.
Jatropha curcas L.	Euphorbiaceae	Sh/Wi	W	Cuts and wounds.
Millettia pinnata (L.) Panigrahi	Fabaceae	T/Wi	R	Poison bite
Mimosa pudica L.	Fabaceae	H/Wi	W	Gingival wounds
Ocimum tenuiflorum L.	Lamiaceae	H/Cu	L	Cuts, gingival wounds
Opuntia stricta (Haw.) Haw	Cactaceae	Sh/Cu	SuSt	Wounds
Phyllanthus emblica L.	Phyllanthaceae	T/Wi	L	Poison bite
Plumbago zeylanica L.	Plumbaginaceae	H/Wi	R	Wounds, poison bite.
Tamarindus indica L.	Fabaceae	T/Cu	L	Cuts, wounds, burn.
Vachellia nilotica (L.) P.J. H. Hurter &Mabb.	Fabaceae	T/Wi	R	Wounds due to prickly heat
Vernonia cinerea (L.) Less.	Asteraceae	H/Wi	Sd	Crack foot, cuts, gangrene
Vitex negundo L.	Lamiaceae	Sh/Wi	L	Wounds due to prickly heat.

Abbreviation: **H**- Herb; **Sh**- Shrub; **T**- Tree; **Cl**- Climber; **R**- Root; **S**- Stem; **L**- Leaves; **SuSt**- Succulent stem; **Fr**- Fruit; **Sd**- Seed; **W**- Whole plant; **Wi**- Wild; **Cu**- Cultivated

Table.2 Plants categorized by medicinal uses.

S. No	Category	No. of plants used
1.	Cuts	8
2.	Wounds	8
3.	Poison bite	6
4.	Gingival wounds	3
5.	Burns	3
6.	Aphthae	2
7.	Wounds due to prickly heat	2
8.	Ulcers	1
9.	Dog bite	1
10.	Animal diseases	1
11.	Gangrene	1
12.	Crack foot	1

Figure.2 Relative use of plant parts as remedies.

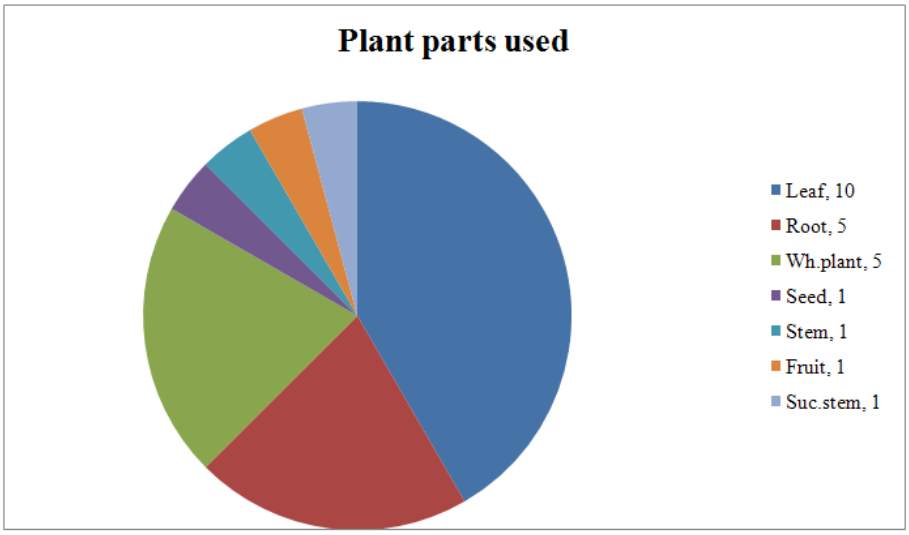
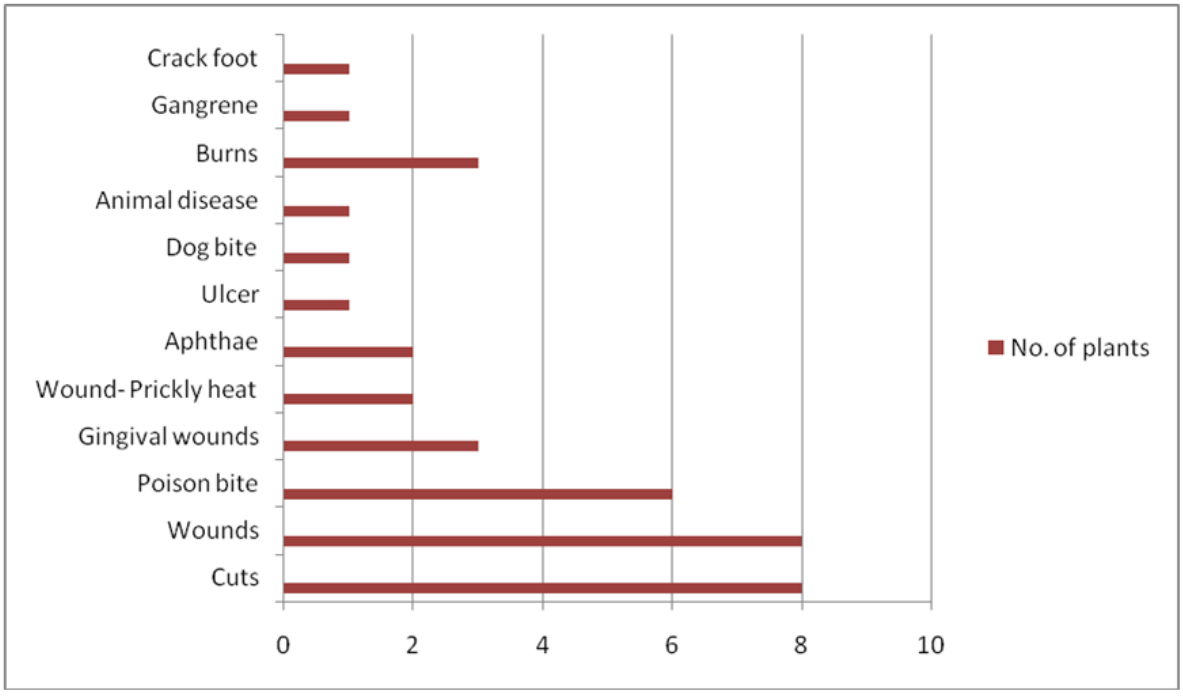


Figure.3 Plant categorized by medicinal uses



In Uttara Kannada district, about 106 plants were used to treat wound healing properties and different types of wounds treated by traditional healers are classified into 15 categories (Bhat *et al.*, 2012) but in the present study, 21 plants were used to cure the different types of wounds and it was classified into 12 categories. Ayyanar and Ignacimuthu (2009) stated that most of the ethnobotanical studies confirm that leaves are the major portion of the plant used for the treatment of diseases. Likewise, from Fig. 2 it is clear that leaves are most frequently used for the treatment than other parts. *Azadirachta indica, Cocos nucifera, Ocimum tenuiflorum, Phyllanthus emblica*

and Tamarindus indica were used to cure different types of wounds. In contrast to the above findings, *Azadirachta indica, Cocos nucifera, Ocimum tenuiflorum, Phyllanthus emblic*a and *Tamarindus indica* have ability to cure diabetes (Anushka Mootoosamy *et al.*, 2014).

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