



ETHNOBOTANICAL INFORMATION OBTAINED FROM MALAYALI TRIBES IN THE KALRAYAN HILLS OF VILLUPURAM DISTRICT FOR THE TREATMENT OF “CUT WOUNDS”

Kumaran, S.¹ | Kamaraj, E.¹ | *Mujeera Fathima¹

¹ Post Graduate and Research Department of Botany, Government Arts College for men (Autonomous), Nandanam, Chennai-600 035. (*Corresponding Author)

ABSTRACT

The present investigation involves the study of Ethnobotanical information obtained from the Malayali tribes living in the remote villages of Kalrayan hills, Villupuram district in Tamil Nadu. It is a part of the Eastern Ghats. This community has good indigenous knowledge on the use of a large number of native plants for common ailments. The present investigation has taken into account the various medicinal plants used for treatment of cut wounds. It has been observed that 18 species of plants have been mentioned for cut wounds. In majority of the reports turmeric was found to be involved as a major constituent in drug preparation. All the medicinal plants are mostly obtained from the Agricultural landscapes and around the dwellings of the informants. These plants along with their local names, mode of preparation and method of application have been enumerated and elaborated. Nearly 12 informants have been approached for collection of data. The highest use value with reference to treatment of cut wounds has been recorded in *Mimosa pudica*, L. (0.75)

KEY WORDS: Tribal healers, Transect walk, *Lantana camara*, Medicinal Plant.

INTRODUCTION:

Ethnobotany as known to us has been recognized as an academic discipline only about a hundred years ago. But this is not true, in fact the investigation on plants and their uses by all cultures has been practiced for thousands of years. According to the World Health Organization (WHO) as many as 80% of the world's people depend on Traditional medicine for their primary and regular health care needs. Ethnopharmacology deals with the knowledge of tribal people, who preserve ethnic knowledge and keep it unknown from the civilized world¹. They possess knowledge of numerous medicinal plants which can be used to cure most of the diseases. The greater part of traditional therapy involves the use of plant extracts or their active principles by the practitioners who are primarily the providers of health care in remote areas². Malayalis of Kalrayan Hills particularly who live in the remote areas which lack accessibility have not been properly studied though some studies are available^{4,5,6}. Some of the remote hamlets which have not been studied due to isolation and lack of accessibility are considered in the present investigation and these remote villages were selected for Ethnobotanical exploration. The area was surveyed and the information was collected from the tribal healers for the treatment of cut wounds.

MATERIALS AND METHODS:

STUDY AREA:

The Kalrayan hills is located in the Eastern Ghats range of the eastern coast and situated across three districts namely, Salem, Villupuram and Dharmapuri. The Kalrayan hills divided into two parts they are called Chinna Kalrayan hills and Periya Kalrayan hills. The forest type is semi ever green and the soil is well suited for plants. All type of trees, shrubs and herbs found in this region. The Malayali tribes of this area are agriculturalists, who cultivate land on the slope of hills. Tapioca is the major food and commercial crop of this region and sometimes paddy, cotton, vegetables are also been cultivated. Geographical location of this area is between latitude 11°20'–12°05'N and longitude 78°28'–79°05'E, and is located 820 meters above Mean Sea Level. The rainfall varies from 850mm in Kalrayan hills to 4500mm in Anamalai hills. The area selected is remote and has not been explored on these lines.

DATA COLLECTION:

Three field visits to the study area were undertaken during the month of December 2013, May 2014 and June 2014. Samples collected include stem twig, leaves and flower etc., and details regarding the samples were recorded from the local people. Transect walk method was used to gather the data⁷. Sometimes face to face interview was also conducted. The interviews were conducted in the mother tongue (Tamil) only. After that we translated all the information to English. The Informant age ranges from 25 to 80 years. Samples were photographed from the natural habitats and recorded for future references. The samples were then tagged and numbered for herbarium preparation. Plant species were collected and literature was surveyed to validate their use.

DATA ANALYSIS:

Use value (UV):

The relative importance of each plant species known locally to be used as herbal remedy is reported as use value (UV) and it was calculated using the following formula⁸

$$UV = \frac{\sum U}{n}$$

where 'UV' is the use value of a species, 'U' is the number of use reports cited by each informant for a species, and 'n' is the total number of informants consulted for a given plant. In Ethnobotanical studies the use value calculation is helps to determine the plant that has the highest use in treating a particular disease.

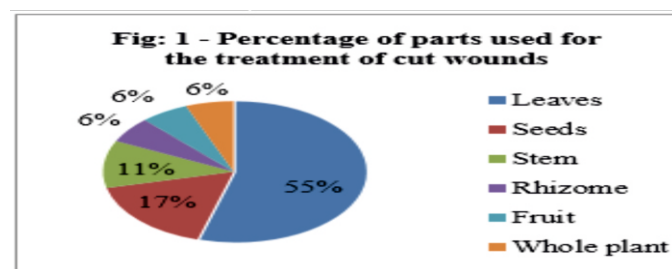
RESULTS AND DISCUSSION:

18 plants belonging to 15 different families were enumerated and tabulated according to their use. (Table 1) The life forms like herbs played the highest role in the treatment of cut wounds followed by shrubs, trees and climbers. The parts used included leaves, stems and seeds though the leaves were used to the greatest extent and the next level is seeds, while in some cases the stem, whole plant and fruit were also used. (Figure 2) Data on use value revealed that the highest value was obtained for turmeric (*Curcuma longa*) followed by *Mimosa pudica* (Table 2) and the lowest use value was for *Capsicum annum* (chillies). Mostly all the medicinal preparation is applied only topically. The highest number of informants were in the age group of 51 to 60 followed by 61 to 70 and very few of them occur in the age groups of 20 to 30, 31 to 40, 41 to 50 and 71 to 80. (Figure 3) In order to substantiate the information obtained the plants were subjected to phytochemical screening and the medicinal property was confirmed. The information collected was found to corroborate the earlier studies on these lines among other tribes.

The study confirms the reports on the survey of the Kani tribes of Tirunelveli hills⁹. The authors collected data on *Jatropha gossypifolia* for curing wounds on lips and tongue, *Tridax procumbens* for swellings and body pain and *Tamarindus indica* for body cooling.

The findings of the present investigation are also seen to corroborate the earlier reports from the tribes of the region of Attapady in Kerala about treatment for cuts and wounds with regards to *Bambusa bambos*, *Lantana camara*, and *Tridax procumbens*¹⁰.

According to report from Assam *Mimosa pudica* and *Curcuma longa* have been used to cure wounds and similar data have been obtained in the present study¹¹. In the same way tribals of Rewa district in Madhya Pradesh have reported that *Curcuma longa* and *Lawsonia inermis* have the potential to cure skin infections¹².



CONCLUSION:

Thus our findings have substantiated previous studies on these lines and so the data provided by the Malayalis is reliable and can be validated. As far as treatment of cut wounds in concerned the plant securing use value *Curcuma longa* followed by *Mimosa pudica* and *Lantana camara*. The use of *Mimosa pudica* and *Lantana camara* for wound healing is new knowledge which can be scientifically validated.

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Table: 1-Ethnomedicinal aspects of plants used for cut wounds in the Kalrayan hills

S. No.	Common Name	Binomial Name	Family	Part used	Mode of Preparation
1.	Unnichedi	<i>Lantana camara</i> L.	Verbenaceae	Leaves	The leaf paste along with turmeric powder is applied on wounds.
2.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
3.	Thottalsinungi	<i>Mimosa pudica</i> L.	Leguminosae	Whole plant	The whole plant paste along with turmeric powder is applied on wounds.
4.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
5.	Sundangkodi	<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	Leaves	The leaves along with turmeric is made into paste and applied topically on wounds.
6.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
7.	Sotrukatrashai	<i>Aloe vera</i> (L.) Burm.f.	Xanthorrhoeaceae	Leaves	The leaf jelly is applied on cut wounds. It is helpful to cure without any infection.
8.	Moongil	<i>Bambusa bambos</i> (L.) Voss	Poaceae	Stem	The outer stem paste along with turmeric powder is applied on wounds. And it is able to cut out infection
9.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
10.	Maruthani	<i>Lawsonia inermis</i> L.	Lythraceae	Leaves	The leaf along with half green chilies is made into paste is applied externally for quick relief of wounds.
11.	Milagai	<i>Capsicum annuum</i> L.	Solanaceae	Fruit	
12.	Unnichedi	<i>Lantana camara</i> L.	Verbenaceae	Leaves	The leaf of <i>Lantana</i> and <i>Lawsonia</i> made into a paste, and mixed with turmeric powder and applied externally for wounds.
13.	Maruthani	<i>Lawsonia inermis</i> L.	Lythraceae	Leaves	
14.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
15.	Unnichedi	<i>Lantana camara</i> L.	Verbenaceae	Leaves	The leaf of <i>Lantana</i> and <i>Mimosa</i> is made into a paste and with a pinch of turmeric powder is applied topically on wounds.
16.	Thottalsinungi	<i>Mimosa pudica</i> L.	Leguminosae	Whole plant	
17.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
18.	Veemanchedi	<i>Sida acuta</i> Burm.f.	Malvaceae	Leaves	The leaf paste of <i>Sida</i> and <i>Lantana</i> is mixed with turmeric powder and applied for wounds.
19.	Unnichedi	<i>Lantana camara</i> L.	Verbenaceae	Leaves	
20.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
21.	Unnichedi	<i>Lantana camara</i> L.	Verbenaceae	Leaves	The leaf of <i>Lantana</i> and <i>Murraya</i> is ground along with turmeric and applied on wounds.
22.	Kariveppilai	<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	Leaves	
23.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
24.	Coffee	<i>Coffea arabica</i> L.	Rubiaceae	Seeds	Seed powder with sugar is applied on fresh cut wounds.
25.	Paalai	<i>Alstonia scholaris</i> (L.) R. Br.	Apocyanaceae	Stem	The stem latex is mixed with turmeric powder is applied on wounds.
26.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
27.	Thathathalaivetti	<i>Tridax procumbens</i> (L.) L.	Compositae	Leaves	The leaf paste is applied on wounds.
28.	Kaattamanakku	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Leaves	<i>Tamarindus</i> and <i>Jatropha</i> leaves are made into a paste and fried with gingili oil and applied on wounds.
29.	Puliyamaram	<i>Tamarindus indica</i> L.	Leguminosae	Leaves	
30.	Uthamani	<i>Pergularia daemia</i> (Forssk.) Chiov.	Apocynaceae	Stem	The stem latex is mixed with turmeric powder and applied on wounds for quick healing.
31.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	
32.	Kadukkai	<i>Terminalia chebula</i> Retz.	Combretaceae	Seeds	The seed paste is applied on wounds.
33.	Pungum	<i>Pongamia pinnata</i> (L.) Pierre.	Leguminosae	Seed	The young seeds along with turmeric are made into a paste and applied externally on wounds.
34.	Manjal	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	

Table 2: Showing use value of Ethnomedicinal sources for cut wounds

S.No.	Plant Name	Habit	Number of use reports	Use value
1	<i>Aloe vera (L.) Burm.f.</i>	Herb	4	0.33
2	<i>Alstonia scholaris (L.) R. Br.</i>	Tree	5	0.41
3	<i>Bambusa bamboos (L.) Voss</i>	Shrub	4	0.33
4	<i>Capsicum annuum L.</i>	Herb	1	0.08
5	<i>Coffea arabica L.</i>	Shrub	3	0.25
6	<i>Curcuma longa L.</i>	Herb	11	0.91
7	<i>Evolvulus alsinoides (L.) L.</i>	Herb	5	0.41
8	<i>Jatropha gossypifolia L.</i>	Shrub	7	0.58
9	<i>Lantana camara L.</i>	Shrub	8	0.66
10	<i>Lawsonia inermis L.</i>	Shrub	3	0.25
11	<i>Mimosa pudica L.</i>	Herb	9	0.75
12	<i>Murraya koenigii (L.) Spreng.</i>	Shrub	3	0.25
13	<i>Pergularia daemia (Forssk.) Chiov.</i>	Climber	6	0.50
14	<i>Pongamia pinnata (L.) Pierre</i>	Tree	4	0.33
15	<i>Sida acuta Burm.f.</i>	Herb	4	0.33
16	<i>Tamarindus indica L.</i>	Tree	7	0.58
17	<i>Terminalia chebula Retz.</i>	Tree	5	0.41
18	<i>Tridax procumbens (L.) L.</i>	Herb	6	0.50