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## **Herbal Remedies Practiced by Malayali's to Treat Skin Diseases**

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### **Abstract**

A survey of medicinal plants used by Malayali tribals to treat skin diseases in Vattal Hills of Dharmapuri District was made. Malayaliø depend on the local biodiversity for their livelihood; they collect various non timber minor forest produce such as roots, tubers, leaves, fruits and barks for food, fuel and medicine. An ethnobotanical investigation among the Malayaliø resulted in the identification of the medicinal plants that are used by them to treat skin diseases. A total of 41 medicinal plant species distributed in 28 families used by Malayali tribes to cure skin disease have been documented in the present study. The aim of the study is not only to prescribe remedies for skin diseases in human beings but also to draw attention for the need towards a detailed study on medicinal plants in this area, which could provide novel remedies/ leads for other dreadful diseases. Results of the present study is organized in table form depicting the botanical name, family and habit with a brief note on plant parts used and method of administration.

*Keywords:* Malayaliø; Ethno-medicine; Traditional Knowledge; Skin Disease; Medicinal Plants.

### **Introduction**

Folk medicine has been used for thousands of years with significant contributions made by its practitioners to human health, particularly as primary health care providers at

the community level (Jain, 1967). Folk healers in remote places use local plants for treating and preventing ailments and are generally considered as healthcare resource in rural places inaccessible to modern health care services. WHO has estimated that at least 80% of the population globally relies on traditional medicine to meet their primary health care needs (Bannerman, 1982; WHO, 2000).

Traditional folk medicine uses the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to its cultures, for maintenance of health. It holds a heritage of community acceptance, and is solely based on the expertise gained by local herbalists over a period of time (Ayensu, 1986; Ved and Goraya, 2008).

India has a vibrant repository of medicinal plants and perhaps the world's most sophisticated indigenous medical heritages, with an unbroken tradition coming down across millennia. The wealth is not only in terms of the number of unique species documented so far for their medicinal use but also the depth of the traditional knowledge base about the uses for human, veterinary health care and crop protection (Ved and Goraya, 2008).

Though, traditional folk medical practices are empirical in nature, several million people in India with limited access to organized modern health care centers, depend on traditional systems of medicine to cater their primary health care needs. Their use is well established and widely acknowledged to be safe and effective (Farnsworth, 1998). It has been estimated that folk healers in India use approximately about 2500 species of medicinal plants which few more than 100 species serve as regular sources of medicine (Pei, 2001; Jain and Patole, 2001).

Ethno medicines have received renewed global attention of scientists in India and elsewhere in recent past because of their local acceptability, and providing leads to the discovery of new drugs of plant origin. Plant extracts used in ethno medical treatments is enjoying great popularity, however, lacks scientific validation (Cowan, 1999; Pushpangadan and Atal, 1984; Ved and Goraya, 2008).

Use of traditional medicine has changed dramatically over the years, due to its affordability, availability, accessibility and acceptability (WHO, 2008). However, scientific evidence from tests done to evaluate the safety and effectiveness of traditional medicine products and practices is limited. Therefore, ethno botanists, all over the world, have been actively working to collect, document and conserve the indigenous medicinal plants. Studies on the use of and hunt for plant based drugs have accelerated in recent times as they are safe and have fewer side effects. Ethno-pharmacologists, botanists, microbiologists, and pharma-chemists are to comb in the hunt for novel bioactive compounds "leads" which could be developed as an effective drug for treatment of various infectious diseases (Pushpangadan and Atal, 1984; Cowan, 1999).

Skin diseases include several conditions like eczema, leucoderma, ringworm, scabies and many others without distinct symptoms. Modern medicines used in the treatment of skin diseases have side effects. Alternatively, herbal or plant based drugs are

considered to safe for the treatment of skin diseases. Traditional medicine uses several plant species for treatment of skin diseases caused by microbial pathogens (Bacteria, Fungi and Viruses). Several initiatives, independently has been taken up by different groups across the country to collect and document information about the use of medicinal plants by the local/ tribal communities to treat skin related disorders (Maruthi *et al.*, 2000; Harsha, 2003; Sharma *et al.*, 2003). Earlier studies on use of medicinal plants revealed that the economically backward local and tribal people of Tamil Nadu prefer folk medicine to treat ailments related to Skin. This is because of low cost involved and sometimes it is a part of their social life and culture (Maruthi *et al.*, 2000; Ganesan *et al.*, 2004; Ayyanar and Ignacimuthu, 2005). With this background information, in order to know the herbal remedies to these stubborn skin conditions, the present investigation has been carried out.

Malayali are predominant hill tribes of Vattal Hills, Dharmapuri, Tamil Nadu. Tribals of this community are familiar with local herbs and hold a vibrant knowledge base with regard to the use of the local plants to cure various skin ailments. Their reliance on herbs for medicine has prompted the present investigation. In this study, an attempt is made to enumerate the medicinal plants used by the Malayali as remedies for skin diseases.

## **Methodology**

### ***Study area and ethnobotanical survey***

Tamil Nadu is the 11<sup>th</sup> largest state in India with a geographical area of 130058 km<sup>2</sup> and lies between 11° 00' to 12° 00' N latitudes and 77° 28' to 78° 50' E longitudes. The total forest cover Tamil Nadu is 21482 km<sup>2</sup> (16.52%) that includes 12,499 km<sup>2</sup> of dense forests (9.61%) and 8,963 km<sup>2</sup> of open forests (6.91%).

Of the total forest area of Tamil Nadu, 3305 km<sup>2</sup> are under protected area (15%) which includes, 8 Wildlife sanctuaries, 12 Bird sanctuaries, 5 National parks, 3 Biosphere reserves and one Tiger reserve (Annamalai, 2004).

The study area, Vattal Hills is located in the Dharmapuri district Tamilnadu, India there are many villages occurring and every Malayali village has several hamlets. Hamlets are found in different elevations (1100m). Temperature in the study area ranges from 12°C to 25°C during Mar ó Apr and averages between 12°C during Dec and 35°C during Apr ó May (Ramya *et al.*, 2008).

With the primary objective of gathering information about the traditional medicines used for various skin diseases Malayali people dwelling in the Hamlets in 6 villages located in the Hills were surveyed. Local traditional healers having practical knowledge of plants in medicine were interviewed during October 2008 ó April 2009. Ethnobotanical data were collected according to the methodology suggested by Jain and Goel (1995). The ethnobotanical data were collected using questionnaire, interviews and discussions in their local dialect.

Traditional medicines used for the treatment of several skin diseases were gathered from the folk healers, elderly man and experienced individuals practicing indigenous medicines. Information was considered only after confirmation through two or more informants. Based on the information provided by tribals, plant specimens were collected, and identified (Gamble, 1935; Mathew, 1983; 1991).

Medicinal plants used in the treatment of skin diseases are listed in Table 1. The plants are arranged in alphabetical order of their botanical names, followed by the family and a brief note on plant parts used.

## Results

The results of the survey are presented in Table 1 and the families of the plants are arranged in alphabetical order. The present investigation comprises 41 species of ethnomedicinal plants distributed in 40 genera belonging to 28 families used very commonly as remedies for skin diseases. For each of the plant species botanical name, family, local name, parts used, methods of preparation, administration and ailments treated are provided in Table 2. Of the total 41 medicinal plants that were used for the treatment of skin related ailments, 5 (12.5%) climbers; 17 (41.5%) herbs; 10 (24.5%) shrubs; and 9 (21.5%) trees respectively.

Data was compared with the available literature and found that many of the usages listed are not recorded earlier. A few plants namely, *Azadirachta indica* leaves used for septic, wounds and scabies; *Tridax procumbens* leaves used for wounds and scabies, are some of the usages recorded in the literature. But many plants like *Aloe vera* and *Curcuma longa* were not available in the area therefore commercial products of such plants were used in the preparation of the medicine by the healers.

As far as plant parts are concerned, the Malayaliø employed almost all parts of the plant in ethno medicine. Plant material such as leaves, flowers, fruit, seed, stems, wood, bark, roots, rhizomes or other plant parts, are used as entire/ part/ powder/ extract. In terms of percentage distribution of plant parts used, the percentages are as follows, Bark ó 1 (2.4%); Flower ó 3 (7.3); Fruits ó 1 (2.4); Latex ó 2 (4.8); Leaves ó 26 (63.4); Root ó 4 (9.7); Tuber ó 2 (4.8); Vegetative part ó 1 (2.4); Whole plant ó 5 (12.1). Several herbal preparations to cure skin disease are produced by extraction, fractionation, purification, concentration, or other physical or biological processes. They also include preparations made by mixing, steeping or heating herbal materials in other biological extracts, alcoholic beverages and/or honey, or in other materials such as cow/ goat urine/milk etc. The most common mode of administration of medicine is paste (63%) followed by decoctions (17%), juice (10%) and stem latex (4%).

The enumerated 41 plants treat/cure as many as 18 different types of skin diseases. A maximum of 16 plants are use to treat ringworm infection, followed by 14 plants for scabies and eczema, respectively; 4 plants for injuries, 3 plants each for leucorrhoea, cracked foot and wounds, respectively. Single plant source was used for treating skin

diseases like inflammation, itches, pimples, rashes sebaceous cysts and polyps respectively.

## Discussion

Several studies have enumerated the plants used for skin diseases and wound healing in various parts of the world (Maruthi *et al.*, 2000; Harsha *et al.*, 2003; Ayyanar and Ignacimuthu, 2005) by different groups of indigenous communities. Different parts of medicinal plants were used as medicine by the local traditional healers to treat skin diseases. Among the different plant parts, the leaves were most frequently used for the treatment of diseases followed by whole plant parts, fruit, stem, root, stem and root bark, seed, flower and latex. External applications were more preferred and used than internal consumption of the preparations for the treatment of skin related diseases (Ayyanar and Ignacimuthu, 2005; Muthu *et al.*, 2006; Ignacimuthu *et al.*, 2006).

It was observed that, most of the remedies consisted of single plant part and more than one method of preparation. However, many of the remedies consisted of different parts of the same plant species to treat skin diseases e.g., *Azadirachta indica* leaf paste is used to treat skin diseases, small pox, and rheumatism. The study represents a contribution to the existing knowledge of folk remedies that are in current practice for the treatment of skin diseases that happens to be the most common way of ailment amongst the rural population because of their inaccessibility to modern health care centers. However, this mode of application of plants to cure ailments is safe with no side effects, if taken as per the directions of the nattu vithiyar. It is hoped that, this information will be a useful lead for phyto chemists and pharmacologists. Once the efficacy of these herbal drugs in treating skin diseases is scientifically established, popularization of these remedies can be recommended to the healthcare providers for wider application among the rural mass (Ayyanar and Ignacimuthu, 2005; Ganesan *et al.*, 2004; Ignacimuthu *et al.*, 1998; Rajan *et al.*, 2002).

The survey indicated that, the study area has plenty of medicinal plants to treat a wide spectrum of skin diseases. Earlier studies on traditional medicinal plants also revealed that the economically backward local and tribal people of Tamil Nadu prefer folk medicine due to low cost and sometimes it is a part of their social life and culture (Ayyanar and Ignacimuthu, 2005; Ganesan *et al.*, 2004).

## Conclusion

It is evident from the study that knowledge of medicinal plants is limited to traditional healers, herbalists and elderly persons in rural areas. From the study it is concluded that most of the resource persons are elderly people and the younger generation lacks interest in nattu vaithiyam and have tendency to migrate to cities for well-paid jobs. Therefore, possibility of losing wealth of knowledge seems to inevitable. Thus it is need of the hour to document and preserve incredible knowledge base on traditional system of medicine.

Table 1 List of botanicals used by Malayali tribes for treatment of skin diseases

Botanical Name of the Plant	Family	Habit	Part(s) used
<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	S	L
<i>Acalypha indica</i> L.	Euphorbiaceae	H	L
<i>Aegle marmelos</i> (L.) Correa	Rutaceae	T	L
<i>Aerva lanata</i> (L.) Juss.ex Schultes	Amaranthaceae	S	WP
<i>Andrographis paniculata</i> (Burm.f.) Wall.ex Nees	Acanthaceae	H	L
<i>Aristolochia indica</i> L.	Aristolochiaceae	H	V
<i>Asparagus racemosus</i> Willd	Asparagaceae	C	T
<i>Azadirachta indica</i> A. Juss	Meliaceae	T	L
<i>Boerhavia diffusa</i> L.	Nyctiginaceae	H	L
<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	S	L; Lx
<i>Cassia alata</i> L.	Caesalpiniaceae	S	L
<i>Cassia fistula</i> L.	Caesalpiniaceae	T	L
<i>Clerodendrum inerme</i> (L.) Gaertn	Verbenaceae	S	L
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	H	L
<i>Datura metel</i> L.	Solanaceae	H	L
<i>Eclipta prostrata</i> (L.) L.	Asteraceae	H	L
<i>Erythrina variegata</i> L.	Fabaceae	T	L
<i>Evolvulus alsinoides</i> (L.) L	Convolvulaceae	H	W
<i>Ficus religiosa</i> L.	Moraceae	T	Lx
<i>Hemidesmus indicus</i> (L.) R.Br.	Periplocaceae	C	R
<i>Indigofera tinctoria</i> L.	Fabaceae	S	WP
<i>Ixora coccinea</i> L.	Rubiaceae	S	Fl
<i>Jatropha curcas</i> L.	Euphorbiaceae	S	L
<i>Justicia adhatoda</i> L.	Acanthaceae	S	L
<i>Leucas aspera</i> (Willd) Link	Lamiaceae	H	Fl; L
<i>Mimosa pudica</i> L.	Mimosaceae	H	R; L
<i>Mirabilis jalapa</i> L.	Nyctaginaceae	H	T
<i>Mollugo pentaphylla</i> L.	Molluginaceae	H	WP
<i>Mukia maderaspatana</i> (L.) M. Roem	Cucurbitaceae	C	L
<i>Ocimum tenuiflorum</i> L.	Lamiaceae	H	L
<i>Phyllanthus emblica</i> L.	Euphorbiaceae	T	Fr
<i>Piper nigrum</i> L.	Piperaceae	C	L
<i>Plumbago zeylanica</i> L.	Plumbaginaceae	H	L
<i>Pongamia pinnata</i> (L) Pierre.	Fabaceae	T	B
<i>Rubia cordifolia</i> L.	Rubiaceae	C	R
<i>Saraca asoca</i> (Roxb)Wilde	Caesalpinaceae	T	Fl
<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	S	WP
<i>Trichopus zeylanicus</i> Gaertn	Dioscoriaceae	H	L
<i>Tridax procumbens</i> L.	Asteraceae	H	L
<i>Vernonia cinerea</i> (L.) Less	Asteraceae	H	L
<i>Wrightia tinctoria</i> (Roxb.)R.Br.	Apocynaceae	T	L

Table 2 List of botanicals used by Malayali tribes for treatment of skin diseases and the mode of application to treat the infection

<b>Botanical Name of the Plant</b>	<b>Plant part used and mode of use</b>
<i>Abutilon indicum</i> (L.) Sweet	Fresh leaves made into a paste with water and the paste is applied externally on the skin thrice a day to treat the ringworm infection.
<i>Acalypha indica</i> L.	Paste of leaves with water is applied externally two times a day for a period of one week to treat skin diseases.
<i>Aegle marmelos</i> (L.) Correa	Leaves are made into paste with a few drops of water; the paste is applied externally on the affected skin twice a day for a period of two to three days to get relief from itches.
<i>Aerva lanata</i> (L.) Juss.ex Schultes	Juice prepared from whole plant with water is taken orally three times a day for a period of two days to reduce eczema.
<i>Andrographis paniculata</i> (Burm.f.) Wall.ex Nees	Fresh leaves made into a paste with water and the paste is externally applied twice a day to treat leprosy, scabies, eczema and the ringworm infection.
<i>Aristolochia indica</i> L.	Paste prepared from vegetative parts of the plant in water is applied externally once in a day for a week to treat dandruff.
<i>Asparagus racemosus</i> Willd	Powder prepared from root/ tuber is taken orally with goat's milk (or) over night fermented cooked rice water three times a day for a couple of days to treat lumbago and leucorrhoea.
<i>Azadirachta indica</i> A. Juss	Paste of leaf mixed with turmeric powder and applied externally to treat skin infection, small pox and chicken pox.
	Oil extracted from seeds is externally applied to treat eczema.
<i>Boerhavia diffusa</i> L.	Leaves boiled in coconut oil and extract is applied topically twice a day to treat scabies and the ringworm infection.
<i>Calotropis gigantea</i> (L.) R.Br.	Latex along with turmeric powder is gently heated up in coconut oil and the extract is applied topically to treat eczema. Stem/leaf latex applied externally on foot heals cracks.
<i>Cassia alata</i> L.	Fresh leaves are ground to paste; leaf paste is applied twice a day to treat the ringworm infection.
<i>Cassia fistula</i> L.	Fresh leaves are ground to paste; Paste of leaves in water is applied externally three times a day for three days to treat injuries/ wounds on the skin.
<i>Clerodendrum inerme</i> (L.) Gaertn	Fresh leaves are ground to paste; paste is applied topically to treat skin inflammation, scabies and ringworm infection.
<i>Cynodon dactylon</i> (L.) Pers.	Juice prepared from of fresh leaves in cow's milk is taken orally twice a day for three days to treat leucorrhoea.
<i>Datura metel</i> L.	Leaves are gently heated on flame and applied on the face once in a day for a week to treat pimples and other infections.
<i>Eclipta prostrata</i> (L.)	Fresh leaves are ground to paste; Leaf paste is used to treat the ringworm infection. Leaves gently heated up in coconut oil and the extract is applied on head for a week to treat dandruff.

<i>Erythrina variegata</i> L.	Fresh leaves are ground to paste; leaf paste is externally applied to treat leprosy.
<i>Evolvulus alsinoides</i> (L.)	Juice obtained from grinding of whole plant is mixed with goat's milk is taken orally three times a day for three days to reduce body heat and cures lumbago.
<i>Ficus religiosa</i> L.	Stem latex applied externally on the foot twice a day heals cracks and fissures.
<i>Hemidesmus indicus</i> (L.) R.Br.	Handful of the dried roots are pounded and boiled in 100 ml of coconut oil. Few drops of the oil extract are externally applied twice a day to treat eczema, scabies and the ringworm infection.
<i>Indigofera tinctoria</i> L.	Juice prepared from whole plant is mixed with Goat's milk and taken orally three times a day for three days to treat leucorrhoea.
<i>Ixora coccinea</i> L.	Dried flowers gently heated up coconut oil and the extract is applied externally to treat eczema.
<i>Jatropha curcas</i> L.	Leaf paste is applied externally to treat eczema, scabies and ringworm infection.
<i>Justicia adhatoda</i> L.	Paste made from fresh leaves is applied externally to treat scabies and ringworm infection.
<i>Leucas aspera</i> (Willd) Link	Fresh leaves are ground to paste; Leaf paste is applied externally to treat ringworm infection.
<i>Mimosa pudica</i> L.	Fresh leaves are ground to paste; Leaf paste is applied externally to treat eczema. A handful of entire plant is made to paste and applied on cuts and wounds promote healing.
<i>Mirabilis jalapa</i> L.	Dried root tuber ground to paste with water; the paste applied externally to treat the sebaceous cysts and polyps.
<i>Mollugo pentaphylla</i> L.	Fresh plant ground to paste with equal quantity of turmeric and Poolan kilangu; the paste is applied externally on body prior to bathing for 10 ó 14 days to get relief from eczema and reduce bad body odor.
<i>Mukia maderaspatana</i> (L.) M. Roem	Fresh leaves are ground to paste; Leaf paste is applied externally to treat scabies and ringworm infection.
<i>Ocimum tenuiflorum</i> L.	Fresh leaves are ground to paste; fine paste is applied on wound to promote healing.
<i>Phyllanthus emblica</i> L.	Dried cotyledons are gently heated up in luke warm coconut oil; the extract is applied externally to treat scabies.
<i>Piper nigrum</i> L.	Fresh leaves are ground to paste; Leaf paste is externally applied twice a day to treat the ringworm infection.
<i>Plumbago zeylanica</i> L.	Fresh leaves are ground to paste; the mix is applied externally to treat eczema, scabies and ringworm infection.
<i>Pongamia pinnata</i> (L) Pierre.	Dried bark powder is gently fried in coconut oil and the extract is applied externally to treat eczema, psoriasis, rashes, scabies and ringworm infection.
<i>Rubia cordifolia</i> L.	Fresh roots or fresh tender shoot is made into paste; paste is applied externally on iron weapon injured part of the body



	during warfare/ fight to promote wound healing; the paste has antiseptic effect.
<i>Saraca asoca</i> (Roxb)Wild	Dried flowers boiled in coconut oil and the extract is applied externally to treat eczema and scabies.
<i>Tephrosia purpurea</i> (L.) Pers.	Paste whole plant is externally applied to treat injuries.
<i>Trichopus zeylanicus</i> Gaertn	Fresh leaves are ground to paste; the paste is applied externally to treat scabies and ringworm infection.
<i>Tridax procumbens</i> L.	Fresh leaves are ground to paste along with a pinch of calcium hydroxide; the paste is applied externally on the eczema affected area/ injury made by weapon to promote healing.
<i>Vernonia cinerea</i> (L.) Less	Handful of leaves is pound and gently heated up in coconut oil; the extract is applied externally to treat leprosy and scabies.
<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Handful of leaves is pound and gently heated up in coconut oil and made to paste; the paste is externally applied to treat eczema and scabies.

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