



**A Drug Review on Karisalai Ennai – A Herbo Mineral Siddha Drug in the Management of Karappan (Eczema) in Children**

**A.Senthamizhvani\*<sup>1</sup>, K. Suresh <sup>2</sup>, M.Meenakshi Sundaram<sup>3</sup>, R.Meenakumari<sup>4</sup>**

*\*<sup>1</sup>PG Scholar, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai 600047, Tamil Nadu, India*

*<sup>2</sup> Lecturer, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai 600047, Tamil Nadu, India*

*<sup>3</sup> Professor & HOD, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai 600047, Tamil Nadu, India*

*<sup>4</sup> Director, National Institute of Siddha, Chennai 600047, Tamil Nadu, India*

**ABSTRACT**

Skin diseases are one of the most common health problems in worldwide, one among them eczema. Eczema is a major skin disease and has a significant impact on quality of life. It often affects young children and develops during their first year of life. Approximately 5-20% of children were suffered from eczema; it affects upto 1 in 5 children and is associates with high morbidity and act on the children's quality of life. Eczema is a non-contagious inflammation of the skin characterized by intense itching, erythema, oedema, scaling, vesiculation and oozing. Hereditary and allergy may cause Eczema in children. It affects both physical and mental health. Numerous medicines for Karappan (eczema) are explained in Siddha classics; Karisalai Ennai is one of them a herbo mineral formulation indicated for Karappan. This review article reflects history, properties, chemical constituents, pharmacological activities and several medicinal uses of the drug Karisalai Ennai on eczema. The drug nourishes the skin, reduces the IgE level and itching and acts as a good emollient. This medicine is not only for the treatment and also balances the three humors (Vatham, Pitham and Kapam) mentioned by Siddhars. This review further focuses to improve the research on Siddha herbal medicines.

**KEY WORDS:** *Karisalai Ennai, Siddha, Herbo-mineral, Karappan, Eczema, Children.*

*Corresponding Author: A.Senthamizhvani, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai 600047, Tamil Nadu, India*

## 1. Introduction

Eczema is a common problem all over the world. Their incidence is 2-3% of all medical problems. It is a kind of dermatitis characterized as non-infectious, inflammatory, pruritic skin disease. Eczema is a specific type of allergic cutaneous manifestation of antigen-antibody reaction. It is characterized by superficial inflammation of the epidermis associated with vesicle formation. Itching varies from mild to severe. [1]

In worldwide, eczema affects 15-20% of children and 1-3% of adults. 50% of patients with eczema develop other allergic conditions. International Study of Asthma and Allergies in Childhood (ISAAC) is the biggest and only allergic study that revealed UK and New Zealand have the highest prevalence of eczema. [2]

In India, approximately 0.42% of people were affected in northern and 0.55% of people were affected in eastern part of the country. Current statistics suggest that almost 28.46% children were suffered from AD; among 0.01% is South Indian. [3]

Siddha medicine is ancient healing science of South India. Siddha medicine point out three cardinal energies named Vatha, Pitha and Kapha. These principles related to fundamentals of the body. As per Siddha literature, skin diseases are mainly provoked due to Vatha that is evident from the state "Vathamalaathu meni kedathu". The principles of Siddha about the production of diseases are very important in the diagnosis of Skin diseases as well.[4]

According to Siddha literature Balavagadam, Eczema (Karappan) is classified into eighteen types. The cardinal signs and symptoms of Karappan, almost correlated with 'Eczema' in the modern scientific system of medicine.

In Karappan, the symptoms like erythema, itching, oedema, vesiculation, oozing and lichenification are developed. According to Siddha literature "Yugi Vaithiya Sindhamani", etiology of Karappan described by eating millets, tubers and meat can cause Karappan.[5]

In Siddha literature Balavagadam described a herbo mineral formulation "Karisalai ennai" indicated for Karappan (Eczema). Majority of

ingredients in this formulation hold anti-inflammatory, anti-bacterial, anti-microbial and wound healing activity and beneficial in skin diseases.

## 2. Materials and Methods

### 2.1. Ingredients and Purification of Karisalai Ennai

S. No	Name of the plant / mineral	Parts used	Action	purification
1	<i>Eclipta prostrata</i> L.	Whole plant	Uzhalkidu (325 ml)	It is purified by cleaning it with clean cloth then removes the petiole and veins of leaves.
2	<i>Melissa parviflora</i> Sw	Root	Uzhalkidu (325 ml)	Clean with water and cut it small pieces and dry it.
3	<i>Ceralliscarpus epigaeus</i>	Root	Uzhalkidu (325 ml)	Clean with water and cut it small pieces and dry it.
4	<i>Sterculia foetida</i> L.	Bark	Uzhalkidu (325 ml)	The drug is purified by cleaning it with clean cloth then peel off the outer skin.
5	<i>Azoreus salomonu</i> L.	Root	¼ Palam (10gm)	Burn with light flame and make it in a charcoal form.
6	<i>Allium cepa</i> L.	Bulb	¼ Palam (10gm)	Clean it with water and washed of then peel of outer skin and remove the central vein of the Allium cepa and dry it and it get purified.
7	Borax		¼ Palam (10gm)	Fry it gently and it get purified.[6]

Aamanakku Ennai (*Ricinus communis* L.) - 1 PADI (1.3lit)

### 2.2. Method of preparation

1.Take 325ml extract (juice) of Karisalankanni, Kambanthirai ver, Boothakarappan pattai and Karudakkodi ver and mix with Aamanakku ennai (Castor oil).

2.Other drugs are grained with above mentioned extracts.

3.Add all the mixture and boil it well.

4.Prepared medicine will be stored in clean and dry glass container.

Dosage: ½ -1 Uchi karandi (8-16ml), Morning only  
Duration:21 days. [7]

### 2.3. Karisalankanni

Latin name: *Eclipta prostrata*

Family: Asteraceae

English name: Trailing eclipta

Parts used: Whole plant

Habitat: This species grows commonly in moist places in warm temperature to tropical areas. It is widely distributed in India, China, Nepal and Thailand

Organoleptic characters:

Taste: Bitter

Character: Hot

Division: Pungent

Actions: Cholagogue, Alterative, Purgative, Deobstruent, Hepictonic

Phytochemical constituents:

There are seven bioactive phytochemical compounds present in *eclipta prostrata*. Leaves contain glycine, oleic acid, ethanol, octadeconic acid, pentadeconic acid, methyl ester, c-Sitosterol and eicosyl ester.

Pharmacological activity:

*Eclipta* possess anti-inflammatory, dermatitogenic, analgesic, Hepato protective activity and anti-bacterial activity against *E. coli*, *Klebsiella pneumonia*, *Bacillus subtilis*, *salmonella typhi* and *staphylococcal aureus*. [8]

Therapeutic uses:

*Eclipta* is primarily used to treat dropsy, liver diseases and anemia. Leaves are used in the treatment of scorpion stings.



Black color hair dye is obtained from leaves.

#### 2.4. Kambanthirai

Latin name: *Mollugo oppositifolia*

Family: Molluginaceae

English name: Common fumitory

Parts used: Leaves, root

Habitat: It is a diffuse, prostrate annual herb found to be growing in India especially in Kerala, Maharastra, Bihar and Uttarpradesh.

Organoleptic characters:

Taste: Bitter, Astringent

Character: Hot

Division: Pungent

Actions:

Diaphoretic, Diuretic, Anthelmintic, Aperient

Phytochemical constituents:

Leaves contain spergulagenic acid, spergulagenin and tri-hydroxy ketone. Aerial parts of *Mollugo oppositifolia* contain triterpenoid saponins, glinoside A, B and C, flavanoidal glycosides vitexin-

7-glucoside and 2-P-Coumaroylvitexin-7-glucoside. Roots possess mollugo glycoside oleanolic acid and Spergulatriol.

Pharmacological activity:

Compounds present in mollugo contain anti-inflammatory

activity, anti-allergic, anti-microbial, antioxidant, anti-sickling activity and good binding activity, anti-alopecic, anti-hypoglycemic, cardioprotective and thyroid inhibiting activities.[9]

Therapeutic uses:

This plant is used as aperients and anti-septic, and also used for the suppression of lochia.



#### 2.5. Karudakkodi (Aagasakarudan)

Latin name: *Corollocarpus epigaeus*

Family: Cucurbitaceae

English name: Bryoms

Parts used: Rhizome

Habitat: This species found in dry deciduous forests and distributed in India, Tropical Africa and West Asia.

Organoleptic characters:

Taste: Bitter

Character: Hot

Division: Pungent

Actions:

Alterative, Tonic

Phytochemical constituents:

Rhizome of *Corollocarpus epigaeus* is a good source of phytochemicals, vitamins and minerals. This plant contains flavanoids, polyphenol, steroids, tannin, saponin, glycosides, anthroquinones, alkaloids, carbohydrates, protein, and vitamin E 'and' C'and inorganic compounds like calcium, magnesium, potassium, sulphate, phosphate, chloride and nitrate.[10]



Pharmacological activity:

Leaves, rhizome and various parts of *Corollocarpus epigaeus* possess anti-bacterial activity against *E.coli*, *staphylococcus aureus* and *klebsiella pneumonia*. Rhizomes exhibits anti-inflammatory and antioxidant activity. [11]

Therapeutic uses:

Rhizome is mainly used to treat snake bite, anaemia, eczema and Herpes.

### 2.6. Boothakarappan

Latin name: *Sterculia foetida*

Family: Sterculiaceae

English name: Poon tree

Parts used: Leaves, Seeds, Flower and Bark.

Habitat: It grows best in river banks, sandstone rocks along the coasts, primary and secondary forests. It has been found in many areas including India, Taiwan, Indochina, Phillipines, Indonesia and Australia.

Organoleptic characters:

Taste: Bitter

Character: Hot

Division: Pungent

Actions:

Laxative, Diuretic, Nutrient

Phytochemical constituents:

Fatty acids isolated from seeds and seed oil are tetradecanoic acid (1.65%), hexadecanoic acid (11.87%), Octanoic acid (Sterculic acid) (6.76%), malvalic acid, linolenic acid (12.86%) and oleic acid (20.50%). Leaves contain flavonoids such as 5,7,8-tetrahydroxy-4-methoxyflavone-8-O-beta-D-glucoside, puerarin and 5,7,8-tetrahydroxy-4-methoxyflavone.

Pharmacological activity:

*S.foetida* possesses anti-dermatophytic activity against *C. albicans*, *T. rubrum*, *M. gypseum*, and *T. tonsurans*. It exhibited anti-bacterial activity against *E.coli* and *B.subtilis*. Leaf extract and other parts contain anti-inflammatory, anti-diabetic, antioxidant and anti-convulsant activity. [12]



Therapeutic uses:

Seed oil is used as internally and externally for various skin diseases. Fever is significantly reduced by the usage of bark decoction, bark is used to treat GIT disorders, diarrhoea and vadhya diseases.

### 2.7. Vasambu

Latin name: *Acorus calamus*

Family: Acoraceae

English name: Sweet-flag

Parts used: Rhizome

Habitat: It is distributed throughout the tropical and subtropical areas, mainly in India and Srilanka, especially cultivated in Himalayas. It is found in moist soils and shallow water in ditches, marshes, river banks and ponds.

Organoleptic characters:

Taste: Bitter

Character: Hot

Division: Pungent

Actions:

Stimulant, Stomachic, Antiperiodic, Carminative, Nauseant, Emetic, Disinfectant and Germicide

Phytochemical constituents:

Essential oil from this plant contains Calamen, calamenol, calameon, asarone and sesquiterpenes, and various part of this plant possess bitterglycoside, eugenol, pinene,



camphene, flavanoids, saponins, tannins, polyphenolic compounds and mucilage. Leaves and rhizome holds 27.4 to 45.5% of beta-asarone, 20.86% of acorenone respectively. Acorafuran is a sesquiterpenoid found in calamus oil. Asarylaldehyde and asarone are aromatic constituents present in leaves and roots. A flavone named galanjin and a steroid named Beta-sitosterol isolated from this plant. [13]

Pharmacological activity:



The ethanolic extract of *Acorus calamus* stimulates wound healing activity. The aqueous and ethanolic extracts promote anti-bacterial activity against *Bacillus subtilis*, *E.coli*, *Staphylococcus aureus*, *proteus mirabilis* and *pseudomonas aeruginosa*. And also contain anti-inflammatory activity which induces cytokines, IL (Interleukin)-8 and 6. The other pharmacological actions are anti-diabetic, anti-convulsant, anti-pyretic, anti-fungal, anti-spasmodic, broncho dilator, nootropic, neuromodulatory, cytotoxic effect and anti-hypertensive activity.

Therapeutic uses:

Rhizomes are used to cure several diseases like cold, cough, wounds, liver disease, peptic ulcer and gastritis in children. Chewing small piece of rhizome gives instant relief from sore throat and cough. [14]

### 2.8. Vengayam

Latin name: *Allium cepa*

Family: Liliaceae

English name: Onion

Parts used: Bulb

Habitat: *Allium cepa* originates from central Asia. It is cultivated in all over India. Onions are growing most in any soil, chiefly in the temperate zones.

Organoleptic characters:

Taste: Bitter

Character: Hot

Division: Pungent

Actions: Stimulant, Diuretic, Expectorant, Emmenagogue

Demulcent, Aphrodisiac.

Phytochemical constituents:

*Allium cepa* possess high levels of phenolic compounds, flavonoids are the major phenolic in onion. Onion bulbs contain inulin, kestose, nystose and fructofuranosylxylose. Flavonols are rich in onions, present as glycosides, named quercetin and



kaempferol. Anthocyanins (250mg/kg) mostly present in red onions. Sulfur compounds are responsible for odor and flavor; these are main volatile compounds in onion. Other compounds like, aldehyde and ketones are present in minor amount, that is (17-21%) and (3-7%) respectively. [15] Onions are also hold vitamin C, B6, potassium and chromium.

Pharmacological activity:

Extract of *Allium cepa* has anti-bacterial activity against *E.coli*, *Staphylococcus aureus* and *Streptococcus pyogens*. Quercetin is a flavonoid in onion has anti-inflammatory activity which regulates the local inflammatory response. [16] This plant possesses anti-melanogenesis property. Onion skin extract acts as skin whitening agent by inhibiting the melanin formation in B16 melanoma cells. Skin and edible part of red onion hold anti-oxidant and radical scavenging activities. [17]

Therapeutic uses:

It is mainly used to treat amenorrhoea and common cold. It is a good diuretic, appetizer and regular consumption of onion normalizes the blood pressure. It reduces the risk of heart attack and stroke. Onions are used in the treatment of tooth decay and oral infections. Decoction helps to prevent burning micturation and anuria. It also helps to cure jaundice and other liver diseases. [18]

### 2.8. Vengaram

Chemical name: Sodium pyroborate

Natural occurrence:

Borax is mostly extracted from natural source. Crude borax is found in masses by evaporation of water, on the shores of dried up lakes in India, Tibet and Nepal. It can be found in dry lake deposits in California, USA, and Turkey. Furthermore lakes also provide other borate minerals that can be treat to obtain borax.

Physical properties:

Molecular formula:  $\text{Na}_2 [\text{B}_4\text{O}_5 (\text{OH})_4] \cdot 8\text{H}_2\text{O}$

Molar mass: 381.37 g/mol

Color: White, consisting of soft colorless crystals

Odor: Odorless

Density: 1.73g/mL-1

Melting point: 741°C

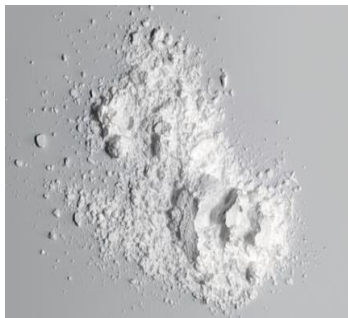
Boiling point: 320°C

This journal is © IJTRIM

This article can be downloaded from [www.ijtrim.com](http://www.ijtrim.com)

Specific gravity: 1.715  
Hardness: 2-2 ½  
Refractive index: n1=1.447, n2=1.469, n3=1.472 (decahydrate)  
Organoleptic character:  
Taste: Sweet, astringent  
Character: Hot  
Action: Tonic, Emmenagogue,  
Refrigerant, Astringent

Activities:  
Borax has anti-bacterial activity against staphylococcus aureus, Pseudomonas aeruginosa, E.coli and Acinetobacter septicus. [19]



Therapeutic uses:  
Some commercial vitamin supplement found in borax. It has anti-fungal effect. Borax with honey is used to cure tonsillitis.

## 2.9 Aamanakku ennai

Latin name: Ricinus communis  
Family: Euphorbiaceae  
English name: Castor oil  
Parts used: Seeds  
Habitat:

A weed of River beds, waterways, roadsides, railways and other waste areas in tropical, sub-tropical and temperature environments.

Organoleptic characters:

Taste: Bitter  
Character: Hot  
Division: Pungent  
Action: Laxative, Emollient

Phytochemical constituents:

Steroids, saponins, alkaloids, flavanoids and glycosides are present in it. 0.55% of ricinine and 0.016% of N-demethylricinine are 2 main alkaloids present in leaves. Seeds and fruits possess 45% of fixed oil. Seed oil contain 12% of palmitic acid, 0.7% of stearic acid, 0.3% of arachidic acid, 0.2% of hexadecenoic acid, 3.2% oleic acid, 3.4% linoleic acid and 89.4% of ricinoleic acid.

Pharmacological activity

Seed oil holds anti-ulcer activity at a dose of 500mg/kg body weight. Plant extract of *R. Communis* contain anti-microbial activity against various micro-organisms such as, *Staphylococcus aureus*, *Bacillus subtilis*, *proteus vulgaris*, *candida albicans* and *aspergillus niger*. Due to the presence of flavanoids, extract of this plant has anti-inflammatory activity. Tannins, flavanoids, triterpenoids and sesquiterpenes are responsible for wound healing activity in castor oil, which enhances the epithelialization and reducing the scar area. [20]

Therapeutical uses:

Castor oil acts as laxative and externally applied for ulcerated and fissured nipple. This oil also useful to treat dry skin conditions such as Eczema and Psoriasis. It is also included in the treatment of piles.

## 3. Discussion

Eczema occurs due to improper diet and allergens. Fish, brinjal, millets, curd, wheat and bottle gourd worsen eczema. Ingredients in Karisalai ennai have potent pharmacological activities. They are steroids, triterpenoids and saponins. Steroids are reducing inflammation in the skin; in modern medicine they commonly treat eczema with topical corticosteroids. Triterpenoids are widely exists in plants that have variety of pharmacological activities, one among them anti-inflammatory activity.

On the other hand, eczema is an inflammatory skin disorder, so the trial drug may have reduced the inflammation and papulation. Saponins are present in plants; possess anti-microbial and cleansing property which may have lowered the secondary skin infections in chronic eczema.

In modern science there is no specific medication for eczema, some drugs give only symptomatic relief. Modern dermatologists generally advise local applications containing steroids for the management of eczema. Most of eczema patients are turn coming towards Siddha system with great hope for cure, since conventional medicine is not providing adequate relief.

## 4. Conclusion

In the present review reveals, that the medicinal plants in this drug 'Karisalai ennai' are very effective and safer for medicinal uses. These plants

were found to possess anti-inflammatory, anti-bacterial, wound healing, anti-microbial and anti-dermatophytic activities. The phytochemicals which are present in these plants are mostly steroids and alkaloids which are responsible for the actions. So from the current article concludes that these medicinal plants are having high medicinal values. The 'Karisalai ennai' contain a higher proportion of phytochemicals and pharmacological activities which would be responsible for its significant effect on Eczema (Karappan). So Karisalai ennai may be considered as a extensive medicine for the management of Karappan.

## 5. References

1. P.N.Behl, A.Agarwal, Govind Srivatsava, Practice of Dermatology, 10th Edition, 2005.
2. Shopie Nutten, Atopic Dermatitis: Global Epidemiology and Risk factors, Ann Nutr Metab 2015; 66(1):8-16.
3. Amrinder J Kanwar and Dipankar De, Epidemiology and clinical features of Atopic dermatitis in India, Indian journal of dermatology, 2011; 56(5):471-475.
4. Ma.Shanmugavelu, Noi nadal noi muthal nadal Part-1, Department of Indian Medicine and Homeopathy, Chennai-106, 363-364.
5. Ra. Thiyagarajan, Siddha Maruthuvam - Sirappu, Commissionerate of Indian Medicine and Homeopathy, Chennai-106, 245-248.
6. Kannusami Pillai, Sigicha rathnadeepam-Purification of raw drugs, Part-1, 2007, Department of Indian Medicine and Homeopathy, Chennai - 106.
7. Ka.Sa.Murugesu Muthaliyar, Pon.Guru.Sironmani, Kuzhnadhai Maruthuvam - Balavagadam, 2010, Department of Indian Medicine and Homeopathy, Chennai-106, 355-413.
8. John wyson W, M. Deventhiran, P. Saravanan, D. Anand and S. Rajarajan, Phytochemical analysis of leaf extract of Eclipta prostrata.L by GC-MS method, International Journal of Pharmaceutical and sciences and research, 2016; 7(1):272-78.
9. Anju G. Nagannawar and M. Jayaraj, Gc-MS Analysis of Bioactive compounds from Ethanolic extract of whole plant of Mollugo oppositifolia L. and their pharmacological activities, International Journal of Pharmaceutical and sciences and research, 2020; 11(5): 2504-09.
10. V.Nalini and T.S.Dhanaraj, Analysis of bioactive compounds and elements in Corallocarpus epigaeus rhizomes, World journal of research and science, 1(2):92-97(2015).
11. Priyavardhini, Vasantha, Tresina Soris, Mohan, V.R., Efficacy of Phytochemical and Antibacterial activity of Corallocarpus epigaeus Hook.f, International Journal of PharmTech Research, 4(1), 35-43; 2012.
12. Kavitha. M, Vadivu. R, Radha. R, A Review on Sterculia foetida Linn, Research Journal of Pharmacognosy and Phytochemistry 7(4):239.
13. Deepak Chandra and Kundan Prasad, Phytochemicals of Acorus calamus (Sweet flag), Journal of Medicinal Plants Studies 2017; 5(5): 277-281.
14. Hashmat Imam, Zarnigar Riaz, Mohd Azhar, Ghulamuddin Sofi, Azad Hussain, Sweet flag (Acorus calamus Linn.): An incredible medicinal herb, <http://www.greenpharmacy.info>
15. Loredana Liguori, Rosa Califano, Donatella Albanese, Francesco Raimo, Alessio Crescitelli, and Marisa Di Matteo, Chemical Composition and Antioxidant Properties of Five White Onion (Allium cepa L.) Landraces, Journal of Food Quality Volume 2017.
16. Sonia Jose and K. Krishnakumar, A review on phytochemical and pharmacological studies on allium cepa, Asian Journal of Pharmaceutical Analysis and Medicinal Chemistry. 5(1), 2017, 32 - 36.
17. Mariangela Marrelli, Valentina Amodeo, Giancarlo Statti, and Filomena Conforti, Biological Properties and Bioactive Components of Allium cepa L.: Focus on Potential Benefits in the Treatment of Obesity and Related Comorbidities, Molecules. 24(1): 119.
18. K. P. Sampath Kumar, Debjit Bhowmik, Chiranjib, Biswajit and Pankaj Tiwari, Allium cepa: A traditional medicinal herb and its

- health benefits, Journal of Chemical and Pharmaceutical Research, 2010, 2(1): 283-291.
19. Murat Tolga, Minimum inhibitory and minimum bactericidal concentrations of boron compounds against several bacterial strains, Turk J Med Sci, 2012; 42 (Sup.2): 1423-1429.
  20. Manoj Kumar, A Review on Phytochemical Constituents and Pharmacological Activities of Ricinus communis L. Plant, International Journal of Pharmacognosy and Phytochemical Research 2017; 9(4); 466-472.