



**PHYTOCHEMICALS AND PHARMACOLOGICAL ACTIVITIES OF KABHASURA KUDINEER, NILAVEMBU KUDINEER, ADATHODAI KUDINEER - A REVIEW**

**D.Micheal Antony Arokyaraj <sup>\*1</sup>, G. Rathiga <sup>2</sup>**

*<sup>\*1</sup> Final year BSMS, Maria Siddha Medical College and Hospital Moovattumugam, Thiruvattaru, Kanyakumari District 629177, Tamil Nadu, India.*

*<sup>2</sup> Assistant Professor, Department of Varmam, Puramaruthuvam and Sirappumaruthuvam, Maria Siddha Medical College and Hospital Moovattumugam, Thiruvattaru, Kanyakumari District 629177, Tamil Nadu, India.*

**ABSTRACT**

Our Siddha System of Medicine is one of the oldest traditional medicine. The medicines used in our siddha system contains 64 types of medications. Among this 64 type of medication 'Kudineer' is one of the important type. This Kudineer has a special character with the easily absorbing and digestible property and also it's easy to prepare. In today's modern world vector born disease is more common due to pollution. Fever, cold and cough are the common symptoms of all types of diseases from younger to elder. 'Kudineer' can treat such vector born disease easily than any other medicine. This review is about Kabhasura Kudineer, Nilavembu Kudineer and Adathoda Kudineer. Each and every drugs of these kudineer has Antipyretic and Immunomodulatory activity which is very effective for fever and other types of vector born disease like Dengue, Malaria and Chikungunya.

**KEY WORDS:** *Antipyretic, Immunomodulatory, KabhaSura Kudineer, Nilavembu Kudineer, Adathodai Kudineer*

*Corresponding Author: D.Micheal Antony Arokyaraj, Maria Siddha Medical College and Hospital Moovattumugam, Thiruvattaru, Kanyakumari District 629177, Tamil Nadu, India.*

## 1. Introduction

Even though the world's population goes on increasing, many of the people in the world has been becoming prey to vector born disease like Chikungunya, Dengue, Malaria, Swine flu and recently by Corona virus. These types of diseases attract the population without any age difference from new born baby to elderly person [1]. To treat these types of dangerous diseases, our siddha system of medicine has a Kudineer can treat Vector born disease and some types of Fever. This review is about Kapha Sura Kudineer, Nilavembu Kudineer, Adathodai Kudineer. 'Kudineer' is the simplest form of medicine which can suitable from children to elderly person.

### PYREXIA

It is an elevation of body temperature above the normal circadian variation as a result of the change in thermoregulatory centre located in the Hypothalamus [2].

### SIGNS AND SYMPTOMS [3]

- Headache
- Temperature greater than 100.4 F (38 C) in adults and children
- Shivering, shaking, and chills
- Skin flushing or hot skin
- Aching muscles and joints or other body aches
- Loss of appetite
- Weakness
- Intermittent sweats or excessive sweating
- Rapid heart rate and/or palpitations
- Feeling faint, dizziness or lightheaded
- Eye pain or sore eyes

### KUDINEER [4,5]

Other Name : Marundhu Neer , Unneer, Vaai Kudithidum Punal.

The dried raw drugs or fresh drugs are made into pieces. Add required quantity of water and boil to reduce the Kudineer to 1/4 or 1/2 or 1/6 or 1/8 or 1/16 or 1/24 based on the Kudineer.

This Review is about some Kudineer to reduce the Fever.

- Kabhasura Kudineer
- Nilavembu Kudineer
- Adathodai Kudineer

## 2. Materials and Methods

### 2.1. KABHASURA KUDINEER [6]

#### Ingredients

- Chukku (*Zingiber officinale*. Rosc) - 35g
- Thippili (*Piper longum*. Linn) - 35g
- Kirambu (*Syzygium aromaticum*. Linn) - 35g
- Sirukanchori Ver (*Tragus involucrate*. Linn) - 35g
- Akkirakaram (*Anacyclus pyrethrum*. De) - 35 g
- Neermulli Ver (*Hygrophila auriculata*. Heine) - 35g
- Kadukai (*Terminalia chebula*. Retz) - 35g
- Adathodai (*Justicia adathoda*. Linn) - 35g
- Karpuravali (*Anisochilus carnosus*. Briq) - 35g
- Kostham (*Costus speciosus*. Sm) - 35g
- Seenthil (*Tinospora cordifolia*. Miers) - 35g
- Siruthekkku (*Clerodendrum serratum*. Linn) - 35g
- Nilavembu (*Andrographis paniculata*. Nees) - 35g
- Vattathiruppi (*Sida acuta*. Burm) - 35g
- Kooraikilangu (*Cyperus rotundus*. Linn) - 35g.

#### Method of Preparation

The above ingredients are taken 35 g Make it into 15 parts. Take one part and add water 2.8 Litres and boil as kudineer. Add Chandirodhaiya Mathirai or Korosanai Mathirai into powder. Mix it with required quantity of honey and give 2 times per day.

#### Phytochemical and Pharmacological Activity of Kabhasura Kudineer

##### Zingiber officinale. Rosc

- **Phytochemical Constituents** : Zingerone, Gingerdiol, Zingibrene, Gingerols, Terpenoids, Flavonoids, Shagaol. [10]
- **Pharmacological Activity** : Antioxidant, Antiemetic, Anti inflammatory, Antidiabetic, Anti ulcer, Digestive, Cardio protective, Antibacterial, Antifungal, Anti Parasitic, Immunomodulatory. [9,11]

##### Piper longum. Linn

- **Phytochemical Constituents** : Alkaloids, Piperine, Piperlongumine, Piperine, Pipericide, Sesamine, Asarinine. [12,15]
- **Pharmacological Activity** : Immunomodulatory, Anti inflammatory, Anti amoebic, Antibacterial, Antioxidant, Hepatoprotective. [13,14]

##### Syzygium aromaticum. Linn

- **Phytochemical Constituents** : Eugenol, Eugenyl acetate, Tannin, Gallotannic acid,

- Flavonoids, Eugenin, Eugenitin, Alpha Copaene. [16]
- **Pharmacological Activity** : Antipyretic, Anti inflammatory, Antioxidant, Antibacterial, Antifungal, Anti carcinogenic, Anaesthetic, Antithrombatic. [17,18]
- Tragus involucrate. Linn**
- **Phytochemical Constituents** : Alkaloids, Flavonoids, Lipids, Protein, Saponins, Triterpenoids.[19]
  - **Pharmacological Activity** : Antipyretic, Bronchodilatory, Analgesic, Antibacterial, Anti inflammatory, Anti tumor, Anti diabetic. [20,21]
- Anacyclus pyrethrum. De**
- **Phytochemical Constituents** : Alkaloids, Flavonoids, Tannins, Inulin, Sesamin, Anacyclin, Germacrene. [23]
  - **Pharmacological Activity** : Immunostimulant, Antioxidant, Anti diabetic, Antidepressant, Anticonvulsant, Aphrodisiac, Antibacterial. [22,24]
- Hygrophila auriculata. Heine**
- **Phytochemical Constituents** : Alkaloids, Triterpenes, Sterols, Essential Oil, Asteracanthine, Luteolin, Stigmasterol. [25]
  - **Pharmacological Activity** : Antipyretic, Anti inflammatory, Antioxidant, Anti mortality, Diuretic, Antibacterial, CNS Activity, Hypoglycemic, Antitumour, Hepatoprotective, Anthelminthic. [26,27]
- Terminalia chebula. Retz**
- **Phytochemical Constituents** : Tannin, Chebulagic acid, Chebulinic acid, Saponins, Ellagic acid, Gallic acid. [28,29]
  - **Pharmacological Activity** : Immunomodulatory, Antioxidant, Antibacterial, Antifungal, Antiviral, Hepatoprotective, Cardio protective, Hypolipidemic, Anti diabetic, Radioprotective, Wound healing, Antispasmodic. [30,31]
- Justicia adathoda. Linn**
- **Phytochemical Constituents** : Alkaloids, Phenols, Tannin, Saponins, Flavonoids, Quinozolin, Adhatodine, Betaine, Vasicinone, Vasicinol, Triterpenes. [32]
  - **Pharmacological Activity** : Antimicrobial, Anti inflammatory, Cardio protective, Hypoglycemic, Hepatoprotective, Wound healing. [33,34]
- Anisochilus carnosus. Briq**
- **Phytochemical Constituents** : Carvacrol, Camphor, Cis bergamotene, Saponins, Tannin, Triterpenoid, Phytosterols, Caryophylline. [35]
  - **Pharmacological Activity** : Antipyretic, Anti ulcer, Antimicrobial, Hepatoprotective. [36,37]
- Costus speciosus**
- **Phytochemical Constituents** : Alkaloids, Glycosides, Steroids, Tannins, Polyphenol, Flavonoids, Camphene, Costunolide, Beta amyryn, Lupeol, Zerumbone.[38]
  - **Pharmacological Activity** : Antimicrobial, Antioxidant, Anticancer, Anti inflammatory, Antidiabetic, Hepatoprotective, Hypolipidemic, [39,40]
- Tinospora cordifolia. Miers**
- **Phytochemical Constituents** : Tembetarine, Choline, Berberine, Tinosporin, Beta-sitosterol, Cardioside, Tinocordifolin, Cordifol, Sterols.[41]
  - **Pharmacological Activity** : Immunomodulatory, Antioxidant, Antimicrobial, Anticancer, Antitoxin, Antidiabetic, Antitoxin, Antiosteoporotic. [42]
- Clerodendrum serratum. Linn**
- **Phytochemical Constituents** : Stigmasterol, Sitosterol, Serratin, Flavonoids, Serratagenic acid, Oleanolic acid, Cholesterol, Gamma sitosterol. [43]
  - **Pharmacological Activity** : Bronchodilatory, Antibacterial, Antioxidant, Anti inflammatory, Anti allergic, Wound healing. [44]
- Andrographis paniculata. Nees**
- **Phytochemical Constituents** : Andrographonin, Panicalin, Flavonoids, Panicolin, Sitosterol, Eugenol, Diterpenoid, Flavones, Andrographolide. [47]
  - **Pharmacological Activity** : Immunomodulatory, Antiviral, Anti inflammatory, Antimicrobial, Antimalarial, Anticancer, Antihepatotoxic. [45,46]
- Sida acuta. Burm**
- **Phytochemical Constituents** : Alkaloids, Tannins, Stigmasterol, Vasicine, Steroids, Flavonoids, Polyphenols. [48,49]
  - **Pharmacological Activity** : Antipyretic, Anti ulcer, Antibacterial, Antimicrobial, Antimalarial, Antioxidant, Anti inflammatory, Anticancer, Hepatoprotective. [49,50]
- Cyperus rotundus. Linn**
- **Phytochemical Constituents** : Terpenoids, Rotunol, Monoterpenes, Sugenol, Pectins, Rotundone, Cyperenon.[51,52]

- **Pharmacological Activity** : Antipyretic, Anti inflammatory, Antioxidant, Anti ulcers, Analgesic, Anti diarrheal, Anti amoebic Antibacterial. [53,54]

## 2.2.NILAVEMBU KUDINEER [6]

### Ingredients

- Nilavembu (*Andrographis paniculata*. Nees) – 8.75g
- Vetiver (*Vetiveria zizanioides*. Linn) - 8.75g
- Vilamichaveer (*Plectranthus vettiveroides*. Spreng) - 8.75g
- Chandanam (*Santalum album*. Linn) – 8.75g
- Peeipudal (*Trichosanthus cucumerina*.Linn) – 8.75g
- Kooraikilangu (*Cyper rotundus*. Linn) – 8.75g
- Chukku (*Zingiber officinale*. Rosc) – 8.75g
- Milagu (*Piper nigrum*. Linn) – 8.75g
- Parpadagam (*Mollungo cerviana*.Ser) – 8.75g

### Method of Preparation

The above ingredients should be taken 8.75 g and boiled by jiggling process 42 ml to 84 ml is effective dosage.

### Phytochemical and Pharmacological Activity of Nilavembu Kudineer

#### *Andrographis paniculata*. Nees

- **Phytochemical Constituents** : Andrographonin, Panicalin, Flavonoids, Panicolin, Sitosterol, Euginol, Diterpenoid, Flavones, Andrographolide. [47]
- **Pharmacological Activity** : Immunomodulatory, Antiviral, Anti inflammatory, Antimicrobial, Antimalarial, Anticancer, Antihepatotoxic. [45,46]

#### *Vetiveria zizanioides*. Linn

- **Phytochemical Constituents** : Tannins, Saponins, Flavonoids, Steroids, Alkaloid, Cardiac glycoside, Vetivone, Vetiverol, Epizizianal.[57]
- **Pharmacological Activity** : Anti inflammatory, Antioxidant, Antibacterial, Antimicrobial, Antifungal, Antimalarial, Anti hepatoprotective, Hyperglycemic.[55,56]

#### *Plectranthus vettiveroides*. Spreng

- **Phytochemical Constituents** : Steroids, Naphtalenol, Bisabolol, Flavonoids, Tannins, Alkaloid, Z-valerenyl acetate. [59]
- **Pharmacological Activity** : Antipyretic, Antioxidant, Anticancer, Antidiabetic, Hepatoprotective. [58]

#### *Santalum album*. Linn

- **Phytochemical Constituents** : Alpha and Beta Santalols, Bisapolene, Beta Santalic acids, Santene, Alpha Santalol. [60]
- **Pharmacological Activity** : Antipyretic, Antioxidant, Antibacterial, Antiviral, Anti inflammatory, Anti ulcer, Antifungal, Hepatoprotective, CNS effect. [61]

#### *Trichosanthus cucumerina*. Linn

- **Phytochemical Constituents** : Flavonoids, Ascorbic acids, Cucurbitacin, Thiamine, Niacin, Arginine, Alanine, Cucurbitacin B, Bryononic acid. [62]
- **Pharmacological Activity** : Antipyretic, Anti inflammatory, Anti fertility, Antibacterial, Cardio protective, Anti diabetic. [63,64]

#### *Cyperus rotundus*. Linn

- **Phytochemical Constituents** : Terpenoids, Rotunol, Monoterpenes, Suganol, Pectins, Rotundone, Cyperenon.[51,52]
- **Pharmacological Activity** : Antipyretic, Anti inflammatory, Antioxidant, Anti ulcers, Analgesic, Anti diarrheal, Anti amoebic Antibacterial. [53,54]

#### *Zingiber officinale*. Rosc

- **Phytochemical Constituents** : Zingerone, Gingerdiol, Zingibrene, Gingerols, Terpenoids, Flavonoids, Shagaol.[10]
- **Pharmacological Activity** : Antioxidant, Antiemetic, Anti inflammatory, Antidiabetic, Anti ulcer, Digestive, Cardio protective, Antibacterial, Antifungal, Anti Parasitic, Immunomodulatory. [9,11]

#### *Piper nigrum*. Linn

- **Phytochemical Constituents** : Piperine, Alkaloid, Piperamide, Piperamine, Piperide, Piperolin, Piperidine. [65]
- **Pharmacological Activity** : Antipyretic, Antioxidant, Anti inflammatory, Antibacterial, Antimicrobial, Anticancer, Hepatoprotective, Antidepressant, Anti diarrheal, Antifungal. [66]

#### *Mollungo cerviana*.Ser

- **Phytochemical Constituents** : Saponins, Flavonoids, Tannin, Glycosides, Anthraquinone. [68]
- **Pharmacological Activity** : Anti inflammatory, Antioxidant, Antimicrobial, Antidiabetic, Hepatoprotective. [67]

## 2.3.ADATHODAI KUDINEER [6]

### Ingredients

- Adathodai (*Justicia adathoda*. Linn) - 2.8 g
- Athimathuram (*Glycyrrhiza glabra*. Linn) – 2.8 g

- *Thallessapathiri* (*Ables spectabilis*. Mirb) – 2.8 g
- *Arisi Thippili* (*Piper longum*. Linn) – 2.8 g

#### Method of Preparation

The leaves of *Adathodai* should be chopped into pieces and fry with honey. Take the rest of the ingredients and make a *kudineer* process 42 ml to 84 ml as per effective dose.

#### Phytochemical and Pharmacological Activity of *Adathodai Kudineer*

##### *Justicia adathoda*. Linn

- **Phytochemical Constituents** : Alkaloids, Phenols, Tannin, Saponins, Flavonoids, Quinazolin, Adhatodine, Betaine, Vasicinone, Vasicinol, Triterpenes. [32]
- **Pharmacological Activity** : Antimicrobial, Anti inflammatory, Cardio protective, Hypoglycemic, Hepatoprotective, Wound healing. [33,34]

##### *Glycyrrhiza glabra*. Linn

- **Phytochemical Constituents** : Glycyrrhetic acids, Glycyrrhizic acid, Glycyrrhizin, Glabrolide, Gallic acid. [69]
- **Pharmacological Activity** : Immunomodulatory, Antimicrobial, Anti inflammatory, Antibacterial, Anticancer, Antioxidant, Anti allergic, Hepatoprotective, Antidepressant. [70,71]

##### *Abes spectabilis*. Mirb

- **Phytochemical Constituents** : Alkaloids, Favonoids, Saponins, Tannin, Resins, Lignin, Glycosides, Terpenoids. [72,73]
- **Pharmacological Activity** : Antioxidant, Anticancer, Antibacterial. [74,75]

##### *Piper longum*. Linn

- **Phytochemical Constituents** : Alkaloids, Piperine, Piperlongumine, Piperine, Piperide, Sesamine, Asarinine. [12,15]
- **Pharmacological Activity** : Immunomodulatory, Anti inflammatory, Anti amoebic, Antibacterial, Antioxidant, Hepatoprotective. [13,14]

### 3. Conclusion

As all the drugs of these *Kudineer* has Immunomodulatory, Antipyretic, Antimicrobial and Antiviral action it can be given for vector born disease like Dengue, Chikungunya, COVID - 19 and so on. It is proud to say that our Siddhars has the medicine formulation of vector born disease of today's modern world.

### 4. References

1. Barie PS, Hydo LJ, Eachempati SR. Causes and consequences of fever Complicating critical surgical illness. *Surg Infect*. 2004;5:145–59.
2. Alagapan.R, Manual of Practical Medicine, Sixth Edition. Pg. No. 26.
3. Krishna Das. K. V, Clinical Medicine, Fourth Edition. Pg. No. 22
4. Uthamarayan. K. S, Siddha Maruthuvanga Surukkam. Pg. No. 740.
5. Thiagarajan. R, Gunapadam Thathu Jeevan vaguppu 2006.
6. Kuppusamy. K. N, Uthamarayan. K. S, Siddha Vaidhiya Thiratu, 2009, pg. No. 293,294.
7. Murugesu Mudhaliyar. K. S, Siddha Materia Medica Medicinal Plants 2006
8. Dr..Somasundriam. S, Taxonomy of Angiosperms(Maruthuva Thavaraviyal-part.1, 2) Oct 2015.
9. Ali, B. H., Blunden, G., Tanira, M. O. and Nemmar, A. (2008). Some phytochemical, pharmacological and toxicological properties of ginger (*Zingiber officinale* Roscoe): a review of recent research. *Food Chem Toxicol.*, 46: 409-420.
10. Zick, S. M., Djuric, Z., Ruffin, M. T., Litzinger, A. J., Normolle, D.P., Alrawi, S., Feng, M. R. and Brenner, D. E. (2008). Pharmacokinetics of 6-gingerol, 8-gingerol, 10-gingerol, and 6-shogaol and conjugate metabolites in healthy human subjects. *Cancer Epidemiol Biomarkers Prev.*, 17: 1930-1936.
11. Gupta, S. K. and Sharma, A. (2014). Medicinal properties of *Zingiber officinale* Roscoe-A Review. *Journal of Pharmacy and Biological Sciences*, 9(5): 124-129.
12. Mananvalan G and Singh J. Chemical and some pharmacological studies on leaves of *P.longum* Linn., *Indian J. Pharm.Sci* 1979; 41:190.
13. Chatterjee A and Dutta C. The structure of Piper longumine, a new alkaloid isolated from the roots Rao C and Nigam S. Antimicrobial activity of essential oils, *Indian J.Pharm* 1968; 30:150 24.
14. Bhargava A and Chauhan C. Antibacterial activity of essential oils, *Indian J.Pharm* 1968; 30:150 of Piper longum Linn. (Piperaceae), *Sci. Cult* 1963; 29: 568.

15. Dasgupta A and Datta P. Medicinal species of Piper. Pharmacognostic delimitation. Q. J. Crude Drug Res., 1980; 18(1):17.
16. Pino JA, Marbot R, Aguero J, Fuentes V. Essential oil from buds and leaves of clove (*Syzygium aromaticum* (L.) Merr. Et Perry) grown in Cuba. J Essen Oil Res 2001;13(4):278-9.
17. Chaieb K, Zmantar T, Ksouri R, Hajlaoui H, Mahdouani K, Abdelly C, Bakhruf A. Antioxidant properties of essential oil of *Eugenia caryophyllata* and its antifungal activity against a large number of clinical *Candida* species. J Mycosis 2007b;50(5):403-6.
18. Gopala Krishnan M, Narayanan CS, Mathew AG. Sesquiterpene hydrocarbons from clove oil. J Lebensmittel-Wissenschaft Und-Technologie B 1984;17:42-49.
19. Venkat Rao N, Benoy K, Hemamalini K, Shanta Kumar SM, Satyanarayana S. Pharmacological Evaluation of Root Extracts of *Tragia Involucrata*. Pharmacologyonline.2007; 2: 236-244.
20. Alimuzzaman M, Muniruddin A. Analgesic Activity of *Tragia Involucrata*. Dhaka University Journal of Pharmaceutical Sciences 2005; 4(1).
21. Joshi CG, Gopal M, Kumari NS. Antitumor activity of hexane And ethyl acetate extracts of *Tragia involucrata*. International Journal of Cancer Research. 2011; 7: 267-277.
22. Selles, Ch., 2012. Valorisation d'une plante medicinale a Activite antidiabetique de la region de Tlemcen : *Anacyclus pyrethrum* L. Application de extrait aqueux a inhibition de corrosion dun acier doux Dans H<sub>2</sub>SO<sub>4</sub> 0.5M, Universite Abou Bekr Belkaid. Algeria, 2012; 175.
23. Harald, G., 1978. Comparative phytochemistry and systematics of *Anacyclus*. Biochemical Systematics and Ecology, 1978; 6: 11-17.
24. Kishor K and Lalitha KG. Pharmacognostical studies on the Root of *Anacyclus pyrethrum* DC. Indian Journal of Natural Products and Resoures, 2012; 3(4): 518-526.
25. Hussain MS, Sheeba F, Ali M. Preliminary phytochemical and pharmacognostical screening of the *Hygrophila auriculata* (K.Schum) Heine. Recor of nat prod (Communicated manuscript no-RNP-0011.
26. Patra A, Jha S, Murthy N, Roy D, Vaibhav A, Chattopadhyay P, Panigrahi G. Anti-Inflammatory and Antipyretic Activities of *Hygrophila spinosa* T. Anders Leaves (Acanthaceae) Tropical J of Pharm Research, 2009, 8(2): 133-137.
27. Vijayakumar M, Govindarajan R, Rao GMM, Rao ChV, Shirwaikar A, Mehrotra S, Pushpangadan P. Action of *Hygrophila auriculata* against streptozotocin-induced oxidative stress. J Ethanopharmacol, 2006, 104(3): 356-361.
28. Bhaumik T, Chemical investigation of *Tenninalia chebula* Retz. Bull,Medico Ethnobot, 10 (3-4), 1989, 190-192.
29. Reddy BM, Chemical investigation of the fruits of *Terminalia chebula*,Int. 1. Pharmacognosy, 32 (4), 1994, 352-356.
30. Lee HS, Won NH, Kim KH, Antioxidant effects of aqueous extract of *Terminalia chebula* in vivo and in vitro, Biol. Pharm. Bull, 28(9),2005, 1639-1644.
31. Gaind KN, Saini TS, Identification of purgative principle of *Terminaliachebula* Retz., Indian J. Pharrn., 30 (10), 1968, 233-234.
32. Ahmad S, Garg M, Ali M, Singh M, Athar MT, Ansari SH (2009). A Phyto-pharmacological overview on *Adhatoda zeylanica*. Medic. Syn. A. Vasica (Linn.) Nees. Nat. Prod. Rad., 8: 549-554.
33. Bruneton J (1995). Pharmacognosy, Phytochemistry, medicinal plants. Hatton CK, translator: Paris: Lavoisier Publishers. Pharmacognosie, pp. 607-608.
34. Patel VK, Venkata-Krishna- Bhatt H (1984). In vitro study of anti-Microbial activity of *Adhatoda vasica* (L) (Leaf extract) on gingival Inflammation- A preliminary report. Ind. J. Med. Sci., 38: 70-72.
35. Bhagat J, Lobo R, Kumar N, Mathew JE, Pai A. Cytotoxic potential of *Anisochilus carnosus* (L.f.) Wall and estimation of luteolin content by HPLC. BMC Complement Altern Med 2014 28;14:421.
36. Senatore F, Lentini F, Venza F, Bruno M, Napolitano F. Composition and antibacterial activity of the essential oil of *Anisochilus carnosus* (Linn. Fil.) Benth., a Tamil plant acclimatized in Sicily. Flavour Fragr J 2003;18(3):202-4.14.

37. Raj T, Kumar P, Rathee R, Dubey KK. Screening of some medicinal plants for their antimicrobial activities. *Int J Pharm Pharm Sci* 2016;8(5):202-6.
38. Bhattacharya SK, Parikh AK, Debnath PK, Pandey VB, Neogy N. Pharmacological studies with the alkaloids of *Costus speciosus*(kemuka). *JRes Indian Med* 1973;8:10-9.
39. Srivastava S, Singh P, Mishra G, Jha KK, Khosa RL. *Costus speciosus* (Keukand): A review. *Der Pharm Sin* 2011;2:118-28
40. Lai PK, Roy J. Antimicrobial and chemopreventive properties of herbs and spices. *Curr Med Chem* 2004;11:1451-60.
41. Khosa RL, Prasad S. Pharmacognostical studies on Guduchi (*Tinospora cordifolia* Miers). *J Res Ind Med*. 1971;6:261-9.
42. Devprakash SK, Subburaju T, Gurav S, Singh S. *Tinospora cordifolia*: A review on its ethnobotany, phytochemical and pharmacological profile. *Asian J Biomed Pharmaceut Sci*. 2011;4(1):291-302.
43. Singh Mukesh Kr, Khare Gaurav, Iyer Shiv Kr., Sharwan Gotmi and Tripathi DK. *Clerodendrum serratum*: A clinical approach; *Journal of Applied Pharmaceutical Science*; 2012;2(2); 11-15.
44. Ali Jimale Mohamed et; Antioxidant, antiangiogenic and vasorelaxant activities of methanolic extract of *Clerodendrum serratum* (Spreng.) leaves; *Journal of Medicinal Plants Research* 2012;6(3):348–360.
45. Parixit.B.,et.al. The genus *andrographis* . A review *Journal of pharmaceutical sciences* 2012; 4(2) 1835-56.
46. Radha R, Sermakkani M, Thangapandian V. Evaluation of phytochemical and antimicrobial activity of *Andrographis paniculata* nees (Acanthaceae) aerial parts. *IJPLS* 2011; 2: 562-567.
47. S. Akbar, “*Andrographis paniculata*: a review of pharmacological activities and clinical effects,” *Alternative Medicine Review*, vol. 16, no. 1, pp. 66–77, 2011.
48. Saraswathy A, Susan T, Gnana RR, Govindarajan S, Kundu AB. Chemical investigation of *Sida acuta* Burm. *Bull Med Eth Bot Res*. 1998; 19:176-180.
49. Khare M, Srivastava SK, Singh AK. Chemistry and pharmacology of genus *Sida* (Malvaceae) - review. *J Medicinal and Aromatic Plant Science*. 2002; 24:430-440.
50. Adebayo JO, Krettli AU. Potential antimalarials from Nigerian plants: A review. *J Ethnopharmacol*. 2011; 133(2):289-302.
51. Singh N and Pandey BR. Phyto-pharmatherapeutics of *Cyperus rotundus* L., *Indian Journal of Natural Products and Recourses*. 2012; 3(4):467-476.
52. Lydia J, Sundarsanam D. Phytoconstituents of *Cyperus rotundus*. L that Attribute to its Medicinal Value and Antioxidant Properties, *IJPSR*. 2012; 3(9):3304-3308.
53. Singh N. A pharmacological study of *Cyperus rotundus*. *IJM*.1970; 5(8): 103-109.
54. Sharma A, Singh N, Bharadwaj R. Ethno-Pharmaco-therapeutic activities of *Cyperus rotundus*. *IJMAS*. 2016; 3(2):186-194.
55. G. Gopalakrishnan, and C. K. Dhanapal, Evaluation of in-vivo antioxidant activity of methanolic extract of *Coleus vettiveroides* K. C. Jacob in streptozotocin-induced oxidative stress in rats, *International Journal of Pharmacy and Pharmaceutical Sciences*, 6, 2014, 590-592.
56. K. Anbarasu, K. T. Manisenthil Kumar, and S. Ramachandran, Antipyretic, anti-inflammatory and analgesic properties of Nilavembu Kudineer Chooram: A classical preparation used in the treatment of Chikungunya fever, *Asian Pacific Journal of Tropical Medicine*,4(10), 2011,819-823.
57. K. Beesha, and V. Padmaja, Phytochemical evaluation of *Coleus vettiveroides* K. C. Jacob, *International Journal of Pharmacognosy and Phytochemical Research*, 5, 2013, 227-231.
58. K.Vasudevan Nair, Indira Balachandran, S. N. Yoganarasimhan, and K.Gopakumar, Studies on some South Indian market samples of ayurvedic drugs, *Ancient Science of Life*, 6(1), 1986, 30-33.
59. K. Beesha, and V. Padmaja, Phytochemical evaluation of *Coleus vettiveroides* K. C. Jacob, *International Journal of Pharmacognosy and Phytochemical Research*, 5, 2013, 227-231.

60. Desai VB, Hirenath RD, Pharmacological Screening of HESP and Sandalwood oil. Indian Perfumer, 1991; 35: 69-70.
61. Benencia F, Courreges MC, Antiviral Activity of Sandalwood oil against Herpes Simplex Viruses 1 & 2, Phytomedicine, 1999; 6(2): 119-123.
62. Sandhya S. An updated review on Tricosanthes Cucumerina L. International Journal of Pharmaceutical Sciences Review and Research. 2010; 1(2):56-60.
63. Jiratchariyakul W, Frahm AW, Cucurbitacin B and Dihydrocucurbitacin B from Trichosanthes cucumerina, J. Pharm. Sci., 19 (5), 1992, 12.
64. Sathesh KS, Ravi KB, Krishna MG. Hepatoprotective effect of Tricosanthes cucumerina L on carbon tetra chloride induced liver damage in rats. J Ethnopharmacol. 2009; 123(2):347-50.31.
65. Parmar VS, Jain SC, Bisht KS, Jain R, Taneja P, Jha A, et al.(1997) Phytochemistry of the genus Piper. Phytochemistry 46:597-673.
66. Ahmad N, Fazal H, Abbasi BH, Farooq S, Ali M, et al. (2012) Biological role of the Piper nigrum L. (Black pepper): A review. Asian Pacific J Trop Biomed: S1945-S1953.
67. R. Valarmathi, A. Rajendran, S. Akilandeswari, "Preliminary Phytochemical Screening and Antimicrobial Activity Studies on Mollugo cerviana", International Journal of Pharmaceutical and Chemical Science, Vol.1.No.1, pp.404-406, 2012.
68. P. Padmapriya, S. Maneemegalai, "Phytochemical screening and GC-MS analysis of Mollugo cerviana (L.)", International Journal of Green and Herbal Chemistry. Vol.4.No.5, pp.319-330, 2016.
69. Shaina kalsi, A review on glycyrrhiza glabra(Liquirice) and its pharmacological activities, International journal of pharmaceutics & drug analysis 4: 234-239.
70. Rohit katoria, pharmacological activity on glyzyrrhiza glabra-a review, Asian journal of Pharmaceutical and clinical research, 2013; 6(1).
71. Monica Damle, Glycyrrhiza glabra (Liquirice)-A potent medicinal herb, International Journal of herbal medicine, 2014; 2(2): 132-136.
72. Bryan BT (1932). The pharmacological actions of taxine. Quaterly Journal of Pharmacy and Pharmacology, 5: 205-219.
73. Thomas PA and Polwart A (2003). Taxusbaccata L. Ecol., 91: 489-524.
74. Willaert W, Claessens P B, Vankelecom B, Vanderheyden M: Intoxication with Taxus Baccata: Caridac arrythmias following yew leaves ingestion. J Pacing Clin Electrophysiol 2002, 24, (4(I)), 511-512.
75. Malik S, Cusidó RM, Mirjalili MH, Moyano E, Palazón J, Bonfill M. Production of the anticancer drug taxol in Taxus baccata suspension cultures: A review. Process Biochem. 2011;46:23-34.

**Table 1: Action and Indication of Kabhasura Kudineer [7,8]**

S. NO	NAME OF THE INGREDIENTS	PARTS USED	ACTION	INDICATION
1.	Chukku (Zingiber officinale. Rosc) Fam:Zingiberaceae	Rhizome	Stimulant, Stomachic, Carminative	Cough, Diarrhoea, Fever, Asthma, Ulcer, Anaemia, Sinusitis,Headache, Digestive problem.
2.	Thippili (Piper longum. Linn) Fam: Piperaceae	Fruit	Stimulant, Stomachic, Carminative	Cough, Asthma, Anaemia, Headache, Sinusitis, Tonsillitis, Cold, Chronic Bronchitis.
3.	Kirambu (Syzygium aromaticum. Linn) Fam:Myrtaceae	Fruit	Carminative, Antispasmodic, Stomachic	Fever, Headache, Diarrhoea, Ear problem, Sinusitis, Dyspepsia, Tooth ache, Vomiting, Nausea, Stomach Disorders.
4.	Sirukanchori Ver (Tragus involucrate. Linn) Fam:Euphorbiaceae	Root	Antipyretic, Diaphoretic	Fever, Thirst, Asthma, Cough, Itching, Skin Disease, Diabetic ulcer.
5.	Akkirakaram (Anacyclus pyrethrum. De) Fam:Asteraceae	Root	Rubefacient, Sialogogue, Stimulant.	Tonsillitis, Dental Problems, Fever, Arthritis, Epilepsy, Dryness of Tongue, Numbness.
6.	Neermulli Ver ( Hygrophila auriculata. Heine) Fam:Acanthaceae	Root	Refrigerant, Diuretic, Tonic, Demulcent.	Cough, Drowsiness, Constipation, Vomiting, Menorrhagia, Anaemia, Jaundice, Urinary infection, Edema.
7.	Kadukai (Terminalia chebula. Retz) Fam:Combretaceae	Fruit	Anti ageing, Stimulant, Stomachic, Laxative, Tonic.	Jaundice, Liver disease, Dental Caries, Bledding Gums, Ageing, Vatha Disease.
8.	Adathodai (Justicia adathoda. Linn) Fam: Acanthaceae	Leaf	Expectorant, Diuretic, Germicide, Antispasmodic.	Fever, Cough, Cold, Asthma, Thorat infection, Joint pain, Swelling, Veneral Disease, Bledding Dysentery.
9.	Karpuravali (Anisochilus carnosus. Briq) Fam:Lamiaceae	Leaf	Diaphoretic, Expectorant, Stimulant.	Sinusitis, Rhinitis, Ulcer, Stomach ache, Cough, Eczema.
10.	Kostham (Costus speciosus. Sm) Fam:Costaceae	Root	Tonic, Expectorant, Diaphoretic.	Fever, Asthma, Piles, Pharyngitis, Tonsillitis, Snake Venom, Wounds, Abscess.
11.	Seenthil (Tinospora cordifolia. Miers) Fam:Menispermaceae	Root	Stimulant, Demulcent, Anti Periodic, Alterative.	Fever, Diabetes, Skin Disease, Leprosy, Gout, Liver disorder, Hypertension, Immune Support.
12.	Siruthekkku (Clerodendrum serratum. Linn) Fam:Verbanaceae	Root	Sedative, Stimulant.	Fever, Asthma, Sinusitis, Cough, Breathlessness, Swelling, Myalgia.
13.	Nilavembu (Andrographis paniculata. Nees) Fam:Acanthaceae	Leaf	Tonic, Stomachic, Alterative, Stimulant.	All types of Fever, Sinusitis, Leprosy, Scabies, Skin Eruption, Arthritis.
14.	Vattathiruppi (Sida acuta. Burm) Fam:Malvaceae	Root	Diaphoretic, Expectorant, Demulcent, Tonic.	Fever, Cough, Scabies, Itching, Diarrhoea, Urinary Disease, Ulcer, Skin Disease, Malaria,Arthritis.

15.	Kooraikilangu ( <i>Cyperus rotundus</i> . Linn) Fam:Cyperaceae	Root	Tonic, Astringent, Demulcent, Diaphoretic, Vermifuge, Stimulant.	All types of Fever, Cough, Thirst, Bronchitis, Food Poison, Dysuria, Hypertension, Mensural Problem.
-----	---	------	---	--

**Table 2: Action and Indication of Nilavembu Kudineer [7,8]**

S. NO	NAME OF THE INGREDIENTS	PARTS USED	ACTION	INDICATION
1.	Nilavembu ( <i>Andrographis paniculata</i> . Nees) Fam:Acanthaceae	Leaf	Tonic, Stomachic, Alterative, Stimulant.	All types of Fever, Asthma, Sinusitis, Leprosy, Scabies, Arthritis, Gonorrhoea.
2.	Vetiver ( <i>Vetiveria zizanioides</i> . Linn) Fam:Poaceae	Root	Stimulant, Tonic, Diuretic, Antispasmodic, Diaphoretic, Emmenagogue, Febrifuge.	Fever, Thirst, Cough, Swelling, Eye Disease, Burns, Neurological Disorder.
3.	Vilamichaveer ( <i>Plectranthus vettiveroides</i> . Spreng) Fam:Lamiaceae	Root	Refrigerant, Anti Pitha.	Fever, Migrain, Eye burning, Ulcer, Vomiting, Nausea, Skin Disease, Thirst
4.	Chandanam ( <i>Santalum album</i> . Linn) Fam:Santhalaceae	Wood	Stimulant, Astringent, Cooling, Diaphoretic, Alterative, Diuretic.	Fever, Thirst, Delirium, Liver disease, Jaundice, Good odour.
5.	Peeipudal ( <i>Trichosanthus cucumerina</i> .Linn) Fam:Cucurbitaceae	Fruit	Aphrodisiac, Refrigerant.	Headache, Fever, Cold, Alopecia, Skin allergy, Emetic, Diarrhoea.
6.	Kooraikilangu ( <i>Cyper rotundus</i> . Linn) Fam:Cyperaceae	Rhizome	Tonic, Astringent, Stimulant, Diuretic, Diaphoretic, Vermifuge, Emmenagogue.	Fever, Thirst, Cold, Delirium, Food Poison, Bronchitis, Dysuria.
7.	Chukku ( <i>Zingiber officinale</i> . Rosc) Fam:Zingiberaceae	Rhizome	Stimulant, Stomachic, Carminative.	Indigestion, Asthma, Cough, Diarrhoea, Sinusitis, Ascites, Anaemia.
8.	Milagu ( <i>Piper nigrum</i> . Linn) Fam:Piperaceae	Fruit	Carminative, Stimulant, Resolvent, Acrid, Antivatha, Antidote.	Cough, Cold, Diarrhoea, Piles, Indigestion, Gastritis, Anaemia, Peptic Ulcer.
9.	Parpadagam ( <i>Mollungo cerviana</i> .Ser) Fam:Molluginaceae	Whole Plant	Laxative, Antiseptic, Stomachic, Febrifuge, Diaphoretic.	Fever, Cough, Thirst, Stomach ache, Eye Sight, Reduced Body odour.

**Table 3: Action and Indication of Adathodai Kudineer [7,8]**

S. NO	NAME OF THE INGREDIENTS	PARTS USED	ACTION	INDICATION
1.	Adathodai (Justicia adathoda. Linn) Fam:Acanthaceae	Leaf	Expectorant, Diuretic, Antispasmodic, Germicide.	Fever, Cough, Asthma, Thorat infection, Bledding Dysentery, Joint pain, Venereal Disease.
2.	Athimathuram (Glycyrrhiza glabra. Linn) Fam:Fabaceae	Root	Demulcent, Laxative, Tonic, Emollient, Mild Expectorant.	Thirst, Hiccups, Fever, Jaundice, Eye Disease, Leucoderma.
3.	Thallesapathiri (Ables spectabilis. Mirb) Fam:Taxaceae	Leaf	Carminative, Tonic, Stomachic, Expectorant.	Fever, Diarrhoea, Cough, Asthma, Vomiting, Indigestion.
4.	Arisi Thippili (Piper longum. Linn) Fam:Piperaceae	Fruit	Stimulant, Carminative.	Cough, Ulcer, Asthma, TB, Headache, Thorat infection, ENT Disease, Anaemia.