

A REVIEW ON MEDICINAL BENEFITS OF PIPER LONGUM

G.Kiran¹, S.Umera², K.Balagurusamy³

¹ FINAL YEAR BSMS, VELUMAILU SIDDHA MEDICAL COLLEGE, SRIPERUMBUDUR.

² ASSISTANT PROFESSOR, VELUMAILU SIDDHA MEDICAL COLLEGE, SRIPERUMBUDUR.

³ VELUMAILU SIDDHA MEDICAL COLLEGE, SRIPERUMBUDUR.

ABSTRACT

Piper longum (thippili) is an important plant used in treating respiratory ailments such as cough (irumal), asthma (iraippu), tuberculosis (illaippu). It is also potential in curing organ related disease such as throat disease, ear and eye disease. As it possess carminative property, it is a best one in treating abdominal related disorder such as indigestion, peptic ulcer (kunmam) and abdominal discomfort (porumal). It has a powerful aphrodisiac action for men which increases sexual desire. As it possess anti-diabetic activity, it is used in controlling diabetes. It also acts as anti-asthmatic, anti-carcinogenic, anti-amoebic, anti-bacterial, anti-snake venom, cardio protective, hepatic protective which will be discussed in this article.

KEYWORDS

Thippili, aadhi marunthu, respiratory ailments, hepato protective, aphrodisiac action, anti-diabetic activity.

INTRODUCTION

Piper longum is majorly cultivated in southern India and some lower parts of Bengal⁽¹⁾. It is called as Indian long pepper, well known for its fruit which is dried and traditionally used as spice⁽²⁾. The fruit of piper longum in fresh form (without drying) has a greenish brown colour, after drying it attains brown colour⁽³⁾. Piper longum can be used as a rejuvenator in treating white patches (themal) a type of skin disease⁽¹⁾. Thippili rasayanam which has a thippili has a major constituent has a powerful therapeutic action in curing respiratory ailments⁽⁴⁾. In combination with other herbs piper longum helps in curing vaginal discharge (vellai) and menorrhagia (paerumpadu)⁽¹⁾. It is also used in treating neurological disease such as hemiplegia and sciatica⁽⁵⁾.

BOTONICAL DESCRIBTION

Botanical name⁽²⁾: *piper longum*

Family⁽²⁾: piperaceae

Common names⁽²⁾: long pepper, Indian long pepper.

Tamil names⁽¹⁾: aadhi marunthu, ambu, vaithaegi, kaaman, aargathi.

Sanskrit name⁽¹⁾: pippali.

PLANT DESCRIPTION⁽⁵⁾

Piper longum is a small shrub. It has large woody root and the leaves are alternate, spreading, without stipules and blades varies largely in size. The lowest leaves size about 5-7 cm long and the upper most size about 2-3 cm long. The flowers are in solitary spikes. The fruits are berries, arranged in fleshy spikes which is thick, oblong and blunt.

VARIETIES OF THIPPILI

According to siddha literature there are two types of thippili, they are arisi thippili and yaanai thippil⁽¹⁾. *Scindapsus officinalis*⁽⁶⁾ which belongs to araceae family⁽⁶⁾ is called as yaanai

thippili. In present the arisi thippili is called as dried fruit of piper longum and kanda thippili is called as the root of the same plant⁽⁷⁾.The fruit of *Helicteres isora* is called and sold as murukku thippili⁽⁸⁾ which belongs to malvaceae family⁽⁹⁾.



Fig1 Piper longum plant



Fig2- Piper longum fruits

Parts used⁽⁵⁾

Fruit and root.

Siddha pharmacodynamics⁽¹⁾:

The fruit (fresh) without drying has following pharmacodynamics,

Taste (suvai): sweet (inippu) i.e less pungent

Sub-taste (pirivu): sweet (inippu)

Natural property (thanmai): coolant (thatpam), so it induces kapha which pacifies pitha.

The fruit (dried) after drying has following pharmacodynamics,

Taste (suvai): strong pungent (kaarppu)

Sub-taste (pirivu): sweet (inippu)

Natural property (thanmai): heat stimulator (veppam), so it induces pitha which pacifies kapha.

Action⁽¹⁾

It has following therapeutic action (seigai),

-Stimulant (veppam undaki)

-Carminative (agatuvayu agatri)

Chemical constituents⁽⁵⁾

The fruit contains major chemical constituents such as piperine, piperanine, pipermonaline, piperundecalidine, guineensine, piellitorine, brachyamide A and brachyamide B. The root contains piperlongumine, piperlingumine and sesamin.

Medicinal uses

Piper longum in combination with *Strychnos potatorum* is used in treating vaginal discharge (vellai) and menorrhagia (perumpadu)⁽¹⁾. The powdered fruit of piper longum and *terminalia chebula* (kadukai) with honey is helpful in treating tuberculosis⁽¹⁾. The leaf extract of *piper betle* and powdered fruit of piper longum with honey eliminates cough with sputum and fever⁽¹⁾. The powdered fruit of piper longum with sugar and ghee act as an aphrodisiac for males which increases sexual desire (libido)⁽¹⁾. The powdered fruit of *scindapsus officinalis* is also used in treating respiratory ailments, abdominal discomfort and dysphonia (kural kammal)⁽¹⁰⁾. The decoction of root of piper longum used in treating sciatica,

hemiplegia and it also given for eliminating snake poison⁽⁵⁾. The fruit decoction is used as a remedy for gonorrhoea and menstrual pain⁽⁵⁾. *Helicteres isora* is used in treating diarrhoea and eliminating intestinal parasites⁽¹¹⁾. The paste of the fruit of *scindapsus officinalis* is applied for curing rheumatism and also possess aphrodisiac action⁽¹²⁾. The dried fruits of piper nigrum, piper longum and dried rhizome of zingiber officinale in powdered form is called as thirikaduku chooranam which promotes a better digestion and prevents stomach ailments⁽¹⁾⁽⁵⁾. Thippili rasayanam which has a piper longum as a major constituent is used in treating respiratory disease such as asthma and tuberculosis⁽⁴⁾.

PHARMACOLOGICAL ACTION

-Hepatic protective⁽¹³⁾

The ethanol extract and butanol fraction of fruits of piper longum has proved to have a stabilizing effect on hepatic cells in wistar rats of carbon tetrachloride induced liver injury in which they decreased the levels of serum glutamic oxaloacetic transaminase and serum glutamic pyruvic transaminase.

-Cardio protective⁽¹⁴⁾

The methanolic extract of fruit of piper longum has proved to have a effective cardio potential against myocardial oxidative stress induced in male wistar rats by preventing isoproterenol-induced cellular damage in heart tissue.

-Anti-diabetic activity⁽¹⁵⁾

The aqueous extract of fruit of piper longum has a anti-hyperglycaemic effect on streptozotocin induced diabetes in wistar albino rats as it reduced the blood glucose level to minor point.

-Anti-asthmatic activity⁽¹⁶⁾

The petroleum ether extract, alcoholic extract and decoction of fruit of piper longum has a inhibitory effect on histamine induced bronchoconstriction in guinea pigs.

-Anti-carcinogenic activity⁽¹⁷⁾

The alcoholic extract of piper longum has a growth inhibitory effect on solid tumour which is induced by Dalton's lymphoma ascites (DLA cells) in male swiss albino mice.

-Anti-amoebic activity⁽¹⁸⁾

The methanol extract of piper longum has proved to act as anti-amoebic activity against caecal amoebiasis induced by entamoeba histolytica in mice.

-Anti-bacterial activity⁽¹⁹⁾

The ethyl acetate extract of fruit of piper longum has a sensitive effect on staphylococcus aureus, vibrio cholera and pseudomonas aeruginosa which is done by using disk diffusion method.

-Anti-snake venom activity⁽²⁰⁾

The ethanolic extract of fruits of piper longum has a anti-snake venom action as it inhibited haemorrhage, defibrinogenation and inflammatory paw edema in mice and mast cell degranulation in rats.

Some sashtric preparations – Thippili as main ingredient

S .no	Name of the preparation	Indications
1.	Thippili leghiyam ⁽²¹⁾	Respiratory ailments
2.	Thippili rasayanam ⁽⁴⁾	Cough , Tuberculosis, Asthma
3.	Thippili urundai ⁽²²⁾	Thimiram(it is an eye disease causing darkness of vision due to prevailing of vayu in the layers of membrane) ⁽²¹⁾
4.	Kankasa mathirai ⁽⁴⁾	Pterygium
5.	Yemadhanda kulligai ⁽⁴⁾	Pneumonia (kabavatha suram)
6.	Korosanai thugal ⁽⁴⁾	Anemia (pandu), Ascites (peruvairu) Sinusitis (peenisam) Fever (suram)
7.	Sivanar amirtham ⁽⁴⁾	Haemorrhoids(moolam) Ascites (peruvairu) Scorpion sting (theal kadi) Fits (sannu)

8.	Kunma kudori melugu ⁽⁴⁾	Dysmenorrhoea (soothaga vayu) Peptic ulcer (kunmam) Indigestion (ageeranam)
----	------------------------------------	---

CONCLUSION:

Thus piper longum is traditionally important plant in curing respiratory ailments because of its natural heat stimulating action (veppam viryam) which pacifies kapha kutra, the main cause of respiratory problems. Because of its strong carminative property, it is the best one in treating abdominal related disorder such as indigestion, dysentery and abdominal discomfort. As it possess anti-hyperglycaemic and anti-hyperlipidaemic activity, it can be given for diabetes in the name of venthamarai chooranam which contains piper longum as one of the constituent in it. Piper longum in combination with other herb will be best one in treating vaginal discharge and menorrhagia. Further research should be made to bring out aphrodisiac action of piper longum which can be given as a promoter of fertility for patients who suffer from sex related disorder.

REFERENCES

1. K.S.Murugaesa mudhaliyar; siddha material medica (gunapadam-muligai vakuppu),Dept of Indian Medicine and homeopathy, 1st edition; 2013,(pg.no:514-517).
2. https://en.m.wikipedia.org/wiki/Long_pepper ; (last edited on 15 feb 2017).
3. Sharma vinay et al., pharmacognostical and phytochemical study of piper longum l. and piper retrofractum vahl; journal of pharmaceutical and science innovation; 25th jan 2012.
4. K.N.Kupuswamy muthaliyar, K.S.Uithamarayan; siddha vaithiya thirattu,Dept of indian Medicine and homeopathy, 5th edition; 2014, (pg.no:235-236, 234, 9, 7, 161, 162, 201).
5. S.Sankaranarayanan; medical taxonomy of angiosperms, 1st edition; 2009, (pg.no:719-720).
6. <https://en.m.wikipedia.org/wiki/Scindapsus> ; (last edited on 6 dec 2015).
7. www.rasakitchen.com/kanda-thippili-arisi-thippili-rasam-remedy-cold-tiredness/ ; (nov 21, 2016).

8. <http://www.zaapr.com/impex/data/search/murukku-thippili>
[helicteres/hscod/all/country/all/india-port/all/unit/all/time-period/all/date/all/exports/page/1](http://www.zaapr.com/impex/data/search/murukku-thippili)
9. https://en.m.wikipedia.org/wiki/Helicteres_isora ; (last edited on 26 jan 2017).
10. K.S.Murugaesa mudhaliyar; siddha material medica (gunapadam-muligai vakuppu), Dept of indian Medicine and homeopathy, 1st edition; 2013, (pg.no:518).
11. <http://easyayurveda.com/2015/06/03/helicteres-isora-avartani-uses-dose-research-side-effects/>
12. Kaushik pawan et al., *Scindapsus officinalis*: A Comprehensive review; international journal of pharmaceutical erudition; aug 2012, 2(2), 18-27.
13. S.S.Jalalpure et al., hepatoprotective activity of the fruit of piper longum linn; indian journal of pharmaceutical sciences; 2003, 65(4):363-366.
14. Archana r.juvekar et al., protective effect of piper longum fruits against experimental myocardial oxidative stress induced injury in rats; journal of natural remedies; vol.9/1 (2009) 43-50
15. md.Suban ali et al., antidiabetic and antioxidant activities of piper longum root aqueous extract in STZ induced diabetic rats; journal of pharmacy and chemistry; vol 6; issue 3; sep 2012; pg.no:30-35.
16. Dhirender kaushik et al., in vivo and in vitro antiasthmatic studies of plant piper longum linn.; international journal of pharmacology, 2012.
17. E.S.Sunila 'anticancer, antimetastatic and immunomodulatory activity of medicinal plants- piper longum and thuja occidentalis', amala cancer research centre, university of Calicut, 2006.
18. Nongyao sawangjaroen et al., effects of piper longum fruit, piper sarmentosum root and quercus infectoria nut gall on caecal amoebiasis in mice; journal of ethnopharmacology 91 (2004) 357-360.
19. Chandan singh et al., in vitro antibacterial activity of piper longum l. fruit; international journal of pharmaceutical sciences; 2013, 89-91.
20. P.A.Shenoy et al., anti-snake venom activities of ethanolic extract of fruits of piper longum l. (piperaceae) against russell's viper venom: characterization of piperine as active principle; journal of ethnopharmacology, 20 may 2013, vol.147(2) :373-382.

21.T.V. Sambasivam pillai; siddha encyclopedic dictionary; Dept of indian Medicine and homeopathy; vol 4(II); 2nd edition; (pg.no:1041, 1045).

22. Dr. K.S. Uthamarayan; siddhar aruvai maruthuvam; Dept of indian Medicine and homeopathy;6th edition; 2013; (pg.no:221).

