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Preliminary phytochemical analysis of *Sangan Ilai Kudineer*

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Abstract

Plants have played a imperative role in the prevention and treatment of diseases from ancient to modern days. In recent years, India is more focused and encourage to scientific study of medicinal plants and their uses. The aim of the study is to find the phytochemical property of herbal formulation *Sangan Ilai Kudineer (Azima tetracantha*) mentioned in Siddha text book *Gunapadam Mooligai Vaguppu*[(2)] indicated for *Anti-vatha* property. The therapeutic potential of plant lies in the presence of secondary metabolites such as alkaloids, terpenoids and polyphenolic compounds. This phytochemical analysis is showed the presence of various phytochemicals in aqueous extract of *Azima tetracantha*. At the end of study showed aqueous extract of *Sangan Ilai kudineer* was contains the presence of Alkaloid, Saponins, Glycosides, Tannins & Quinones.

Keywords: Phytochemicals, *Sangan Ilai Kudineer, Azima tetracantha, Anti-vatha*

I. Introduction

The Siddha system of medicine is the oldest holistic management system and being practiced by large population in south India. This article is related to preliminary phytochemical analysis of single herbal Siddha formulation called *Sangan Ilai Kudineer (Azima tetracantha). Azima tetracantha* belonging to *Salvodarceae* family, dioecious, erect shrub up to 90 cm tall with (1–)2 spines 0.5–5 cm long in each leaf axil, sometimes scandent with stems up to 8 m long; branchletsterete or quadrangular, glabrous to densely hairy. Leaves decussately opposite, simple and entire; stipules absent or rudimentary; petiole short; blade elliptical-oblong to ovate-oblong or orbicular, 1.5–5.5 cm × 0.5–4.5 cm, base rounded or somewhat narrowed, apex mucronate, pinnately veined with one pair of lateral veins from near the base. Inflorescence an axillary, sometimes terminal spike or cyme up to 3 cm long or flowers solitary; bracts ovate, often with long and spinous. Flowers unisexual, regular, 4-merous, usually sessile; calyx campanulate, 2–4 mm long, with triangular lobes; petals linear-

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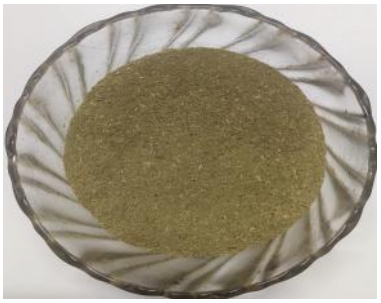
oblong to oblong, greenish to yellowish, the upper part reflexed over the calyx, 2–5 mm long; male flowers with stamens inserted at the base of the rudimentary ovary, exerted; female flowers with staminades and superior ovary, up to 4.5 mm long with a broad sessile stigma. Fruit a globose berry, 0.5–1 cm in diameter, 1–2-seeded, green turning white, with persistent stigma. Seeds disk-like, brown to black [(3)].The alkaloids azimine, azcarpine and carpaine have been isolated from all plant parts. Terpenoids are present in the roots and the leaves, while the seeds contain a complex mixture of about 25 flavonoids, predominantly as glycosides and acyl-glycosides, the most important being quercetin, isorhamnetin, rhamnetin and rhamnazin. All parts contain glucosinolates[(6)]. Freidelin, Lupeol, Glutinol and β-sitosterol were isolated from petroleum ether extract of the leaves of *Azima tetracantha*. The seeds of this plant have been found to possess novel fatty acids along with other fatty acids. The plant *Azima tetracantha* shows the wide range of biological activities such as anti-inflammatory, analgesic, anti-arthiritic, anti oxidant, antipyretic, anti microbial, antivenom, antiulcer[(4)]. The plant *Azima tetracantha* was also used in rheumatism, dyspepsia, diuretic, expectorant [(1)].

Sangan Ilai Kudineer Chooranam



II. Materials and Methods

2.1 Collection of raw drug:

The *Sangan* leaves (*Azima tetracantha*) were collected in and around the areas of Palayamkottai and Tirunelveli. The plant was identified and authenticated by the Medical botanist experts at Government Siddha Medical College and Hospital, Palayamkottai.

2.2 Preparation of formulation:

Stalks and unnecessary parts of leaves were removed. All the adulterants from the leaves were cleaned and it is dried in shade and processed to fine powder. Finally the powder was sieved using cloth and it is stored in air tight container.

III. Preliminary phytochemical analysis of *Sangan Ilai Kudineer*:

Preliminary phytochemical analysis on Siddha preparation *Sangan Ilai Kudineer* was carried out to find the presence or absence of Alkaloids, Quinones, Saponins, Tannins, Glycosides, Terpenoids, Steroids and Flavanoids and results are tabulate below(Table no:1)

The methods adopted for the estimation are as follows:

3.1. Test for Alkaloids: Dragendorff's test (D.Waldi,1965)

To 0.5ml of alcoholic extract of *Sangan ilai Kudineer* 2 ml of HCl is added. To this acidic medium 1ml of reagent was added. An orange red precipitate produced.

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3.2. Test for Flavonoids: Shinoda's test (Harborne,1984)

Sangan ilai Kudineer is treated with alcohol, to that a piece of Magnesium is added followed by an addition of conc. HCl drop wise and heated. Presence of Magenta colour.

3.3Test for Glycosides (Evans, 1997)

A small amount of alcoholic extract of *Sangan Ilai Kudineer* was dissolved in 1ml of water and the aqueous NaOH solution was added. No Yellow color found.

3.4.Test for Saponins: Frothing Test (Kokate,1999)

Sangan ilai Kudineer was diluted separately with 20ml of distilled water and it was agitated on a graduated cylinder for 15min. Presence of the foam formation

3.5. Test for Steroids: Salkowski test (Finar, 1986)

Small quantities of *Sangan ilai Kudineer* were dissolved in chloroform separately. This chloroform solution was added with few drops of concentrated sulfuric acid. The absence of bluish color occurred.

3.6. Test for Tannins: Ferric chloride test

To 2ml of aqueous extract, few drops of 5% ferric chloride solution were added. A bluish black color which disappears in addition of few ml of sulfuric acid, there is formation of yellowish brown precipitate.

3.7. Test for Terpenoids:

To 2ml of chloroform extract, 1ml of conc.H2SO4 was added carefully along the sides of the test tube. No Red color was produced in chloroform layer

3.8. Test for Quinones:

To 2ml of the *Sangan ilai kudineer* extract was treated with 5ml of HCL. Appearance of Yellow precipitate.

IV. Results and Discussion

Qualitative Phytochemical analysis of *Sangan Ilai Kudineer*

The Qualitative Phytochemical analysis of *Sangan Ilai kudineer* revealed the presence or absence of Alkaloids, Flavonoids, Glycosides, Saponins, Steroids, Tannins, Terpenoids, Quinones which were showed in Table.1

Table no 1: Phytochemical Analysis of SanganIlai Kudineer:

Test	Observation	Inference
1. Alkaloids	An orange red precipitate produced	Presence of Alkaloids (+ +)
2. Flavanoids	Presence of magenta colour	Presence of Flavonoids (+)
3. Glycosides	No yellow colour was formed	Absence of Glycosides (-)
4. Saponins	Presence of foam formation	Presence of Saponins (++)
5. Steroids	No red colour was produced	Absence of Steroids (-)
6. Tannins	Formation of yellow brown precipitate	Presence of Tannins (+ +)
7. Terpenoids	Absence of red colour	Absence of Terpenoids (-)
8. Quinones	Appearance of yellow precipitate	Presence of Quinones(+)

(+)- Mild ;(++)-Moderate; (-) Absence

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The above presence of Phytochemicals are natural bioactive compounds, its found in plants and fibres, which is act defense immune system against the pathogens and more accurately protect the human health. The *Sangan Ilai Kudineer* contains Alkaloids(++), Saponins(++), Tannins(++), Quinones(+), Flavanoids(+).

V. Conclusion

The present investigation was found, the phytochemical analysis were studied for Siddha formulation *Sangan Ilai Kudineer* was carried out and results showed the presence of Alkaloids, Flavanoids, Tannins, Quinones &Saponins and absence of terepenoid, glycosides and sterols.

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