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Review Article

A REVIEW ON OCIMUM SANCTUM LINN**K.Rajeswari*¹, C.Mohana², G.Yuktharani³, D.Thanusha⁴, M.Kishore Babu⁵**^{1,3,4} B.pharmacy Students, Krishna Teja Pharmacy College, Tirupati, Andhra Pradesh.² Assistant Professor, Department of Pharmacy Practice, Krishna Teja Pharmacy College, Andhra Pradesh⁵ Professor, Department of Pharmaceutics, Krishna Teja Pharmacy college, Tirupati, Andhra Pradesh.**Article Received:** September 2022 **Accepted:** October 2022 **Published:** November 2022**Abstract:**

Tulsi popularly known as Holy basil Botanically it is ocimum sanctum linn. Tulsi is the aromatic plant in our mother India it is considered as holiest plant and home remedy for various illness. It belongs to the family Lamiaceae. Traditionally, the fresh fruits and leaf's of tulsi juice were commonly used in the treatment of cough and demulcent. It is widely used in the Ayurveda and Siddha system of medicine.

Tulsi is the legendary incomparable one of india. tulsi is taken as many forms as herbal tea, dried powder, fresh leaf, or mixed with honey or ghee. For centuries, the dried leaves of tulsi have been mixed stored grains to repel insects and also this plant known to possess anti-inflammatory, antimicrobial and immunomodulatory.

The dried powder of tulsi [100g] was placed in the thimble of Soxhlet apparatus. 500ml of distilled water was used as a solvent. The extract was concentrated using rotavapor. Then the extract was dried using digital water bath till the green residue was obtained. The percentage yield was 8%, 7% and 5% w/w respectively. The test sample was subjected to phytochemical analysis order to find out the presence of phytochemical constituents. So the present review summarizes the comprehensive information concerning the traditional use, properties and phytoconstituents of tulsi.

Key words: Tulsi, Anti-inflammatory, Anti-microbial, and Immunomodulatory.

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INTRODUCTION:

The Ayurvedic system of medicine traditional healers and folklores contain volumes of materials on the healing potential of tulsi [Ocimum Sanctum]. The Ayurvedic system is considered as complementary and alternative form of medication in the modern world ,it is the only medicine and therapeutic therapy in many rural areas.

In this,we are going to study one Ayurvedic herb i.e Tulsi.Scientifically it is also known as ocimum sanctum L or Ocimum tenuiflorum has been used for thousands of years in Ayurveda for its diverse healing properties.It is queen of herbs,and also the legendary "Incompatible one of India.

Tulsi is the herbaceous perennial,belongs to the family Lamiaceae.which is 60 to 90 cm high with short stems ,long leaves,flowers are yellow and white in color,sterile and not produce viable seeds.The fresh fruits and leaves have been used in Indian system of medicine to cure various ailments.It is mentioned by charaka in the charaka Samhita,an Ayurvedic text.

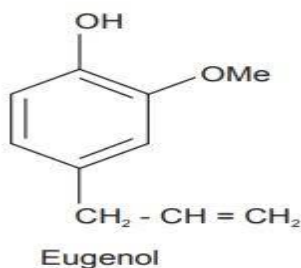
Tulsi is cultivated for religious and medicinal purposes and for its essential oil.It is important symbol in many Hindu religious traditions, which link the plant with goddess figure. Approximately there are 35000 medicinal plants which are used for the therapeutic purpose according to Indian systems [Ayurveda, Siddha, Unani, and other traditional systems].

Tulsi is known to possess anti-inflammatory, antimicrobial and immunomodulatory properties. In view of this background we performed the extraction and preliminary phytochemical analysis of the aqueous extract of Ocimum sanctum.

SCIENTIFIC CLASSIFICATION

KINGDOM : Plantae

SUBKINGDOM : Tracheobionta



CLASS : Magnoliophyta
 ORDER : Lamiales
 DIVISION : Magnoliophyta
 SUPERDIVISION : Spermatophyte seed plants
 GENUS : Ocimum
 FAMILY : Lamiaceae
 SYNONYMS : Sacrd basil,holy basil,tulasi[telugu]

BIOLOGICAL SOURCE:

Tulsi consists of the fresh and dried leaves of ocimum species like ocimum sanctumL.and ocimum basilicum L.etc .

GEOGRAPHICAL SOURCE:

Tulsi is the native throught the world tropics and wide spread has cultivated plant and an escaped weed in India especially in Hindu houses and temples for worship. It also grown in phillipines.

CHEMICAL COMPOSITION OF OCIMUM SANCTUM:

Some chemical composition of tulsi is highly complex containing many nutrients and other biological active components the proportion of which may vary considerable between strains and even among plants with the same feild.

The composition of various extract of ocimum sanctum[tulsi]are fixed oils, essential oils[volatile oils],mineral contents, etc. The detail is as follows.

FIXED OILS:

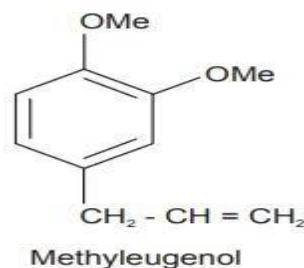
The plant contains fixed oils like linoleic acid, stearic acid,etc present in seeds [tulsi]

ESSENTIAL OILS:

Essential oils such as eugenol, carvacol, caryophylleni and methyl eugenol present in leaves[tulsi].

MINEAL CONTENTS:

It also contain micro minerals like phosphorous, calcium, iron, vitamin, vitamin A etc in whole plant



TYPES OF TULSI :

There are different types of Tulsi. The flowers of all types of Tulsi are purplish and grow in elongated in close whorls. The following are the variuos types of Tusli (Holy Basil):

1.The green leafed variety Sri Rama or Lakshmi tulsi (called *O. Gratissimum*) is the most common and grown in India and Nepal.

2.The second type, Krishna tulsi bears dark-green to purple leaves; this variety has a stronger taste and smell.

3.The third type Vana Tulsi, *O. tenuiflorum* is a green-leafed forest variety that often grows wild. Generally grows in lowland areas.



Raam Tulsi



**Shyam
(Krishna) Tulsi**



Vana Tulsi

MATERIALS AND METHODS:**Collection and preparation of plant material:**

The leaves of *ocimum sanctum* were collected from tropics and subtropics, both wild and cultivated.

Take 557g of fresh and green tulsi leaves were cleaned by distilled water and then leaves were separated from the branches manually. The separated leaves are weighed again and net weight was 349.64g and allowed for drying under the room temperature to avoid destruction of active group in the leaves. The dried leaves are crushed by using hand into small pieces.

Soxhlet extraction :

The dried powder of tulsi [100g] was placed in the thimble of Soxhlet apparatus already fixed with chromatographic paper. Ethanol 350ml was added for the extraction and poured into the round bottom flask of Soxhlet apparatus. Distilled water was used as a solvent. The extraction was continued till clear

solvent was seen in the thimble. The temperature should be maintain at 70C throught the process. The whole process took about 30 hours.

The extract was concentrated using Rotavapor. Then the extract was dried in a digital water bath till a green residue was obtained. The extract was kept in refrigerator till further use.

MEDICINAL USES :

Basil is antispasmodic, appetizer, carminative, galactagogue, and stomachic. It is used for stomach cramps, gastric catarrh, vomiting, intestinal catarrh, constipation, and enteritis. It had been sometimes used for whooping cough as an antispasmodic.

1.Tulsi has antioxidant properties and reduces blood glucose levels. Thus it is useful for diabetics.

2. Tulsi reduces total cholesterol levels. Thus it is useful for heart disease patients.

3.Tulsi reduces blood pressure



1. Treatment of asthma, cough and cold

The holy basil helps in treating asthma and relieves symptoms of respiratory disorders. Tea made using 5 to 7 leaves of holy basil together with ginger, black pepper, cloves and cardamom is effective in providing relief.

2. Prevents bad breath

Lack of oral hygiene can lead to bacterial growth in the mouth which can induce bad breath or halitosis. Leaves of holy basil have disinfectant properties and act as a mouth freshener. So, chewing them helps in destroying germs and bacteria present in the mouth. They also promote the healing of oral ulcers.

3. Promotes dental health

Due to their germicidal and astringent properties, consuming holy basil leaves helps in killing bacteria that cause dental cavities, plaque and tartar. Furthermore, the astringent action helps in tightening the gums around the teeth, thus preventing premature teeth loss.

4. Boosts immunity

A study by Mondal et al titled 'Double-blinded randomized controlled trial for immunomodulatory effects of Tulsi (*Ocimum sanctum* Linn.) leaf extract on healthy volunteers', published in the Journal of Ethnopharmacology in 2011 showed that consumption of tulsi leaves extract leads to a significant increase in the levels of immune cells.

5. Protects internal organs

Our body is not immune to the adverse effects of pollution. Marc Maurice Cohen's study, 'Tulsi - *Ocimum sanctum*: A herb for all reasons', published in The Journal of Ayurveda and Integrative Medicine (2014), shows that holy basil protects our body from damage-causing effects of pesticides, industrial chemicals and heavy metals. It also helps

our body eliminate harmful compounds by increasing the activity of liver detoxification enzymes.

6. Prevents cancer

Cohen also states in her study that the holy basil helps prevent cancers caused by toxic compounds. It also reduces the growth of tumours and induces the death of precancerous and cancerous cells.

7. Reduces risk of kidney stones

In Ayurveda, a mixture of honey and the juice of holy basil leaves is prescribed to get rid of kidney stones. Also, tulsi helps reduce uric acid levels in the body, thereby preventing the formation of kidney stones.

8. Skincare and healthy hair

One of the important holy basil uses is to prevent and treat a number of skin and hair conditions. Tulsi extract has antibacterial properties. When mixed with beauty preparations and applied to the skin and scalp, it helps fight infections and keeps our skin healthy and hair shiny.

9. Reduces stress

During times of stress, our body secretes cortisol, which is also called the stress hormone. However, prolonged elevated cortisol levels are harmful to the body. Consuming holy basil leaves is known to reduce cortisol levels.

10. Prevents premature ageing

Tulsi has essential oils and vitamins A and C. These help ward off the damaging effect of free radicals, which cause ageing, by eliminating them.

GENERAL USES:

Different parts of Tulsi plant eg: leaves, stem, roots, seeds and flower can be used traditionally as an

expectorant, analgesic, anticancer, anti-diabetic, hepato-protective, hypotensive, etc in their action.

1. Gastrointestinal Disorder: One of Tulsi's traditional uses have been, the treatment of digestive disorders ranging from heartburn to bloating. Studies have suggested that there is a scientific basis to these long-standing claims. Holy basil has been shown to have significant anti-ulcer activity. It reduces the effect of peptic acid or irritating drugs on the stomach lining and increases the production of protective stomach mucous coating.

2. Anti-oxidant: A water extract of holy basil has known to protect against radiation damage to the liver and chromosome of the cells. It prevented this damage by reducing hepatic lipid peroxidation and increasing the presence of two powerful cellular antioxidants: superoxide dimutase and superoxide catalase.

3. Anti-Diabetogenic: Studies have shown that patients with Type II diabetes had significant reductions in blood sugar levels (upto 17.6 %) while fasting and smaller decreases in blood sugar levels and cholesterol levels after eating.

4. Skin Diseases: Applied locally, basil juice is beneficial in the treatment of ringworm and other skin diseases. It has also been tried successfully by some naturopaths in the treatment of leucoderma. Oil extracted from Karpoora Tulsi is used in these preparations.

DENTAL USES:

Most of the uses of Tulsi are still at the experimental stages due to its inherent properties. The dental uses of Tulsi are as under.

1. Maintenance of Oral Hygiene: Tulsi leaves are quite effective in treating oral conditions and also maintaining oral hygiene. Carracol and Tetpene are the anti-bacterial agents present in this plant.

2. Treatment of Toothaches: The leaves of Tulsi contain 0.7% volatile oil and 20% methyl eugenol that render analgesic properties to Tulsi. It contains 1-hydroxyl 2-methoxy 4-allyl benzene type of eugenol.

3. Periodontal Disorders: Tulsi is supposed to have a huge role in maintenance of oral and periodontal health. The anti-oxidant produced by Tulsi reduces the periodontal tissue break down.

4. Precancerous Lesion (Oral Submucous Fibrosis): Tulsi is rich in anti-oxidants like Polyphenol, Rosmarinic acid and therefore can be utilised in treatment of such conditions.

5. Aphthous Ulcers: The anti ulceration effect is due to the cytoprotective effect of ocimum sanctum. A dosage of 100 mg/kg was found to be a potent anti ulcerogenic. Its decoction is known to be effective in treating peptic ulcers.

6. Anti-cariogenic: 4% extract of Tulsi is supposed to be the most effective against the streptococcus mutans. It produces the widest zone of inhibition of 22mm around the specimen.

CONCLUSION:

Tulsi has been used from many decades in Ayurveda because of its therapeutic applications. Basil or Holy basil is an integral ingredient in many Ayurvedic preparations. Many bioactive molecules have been found in Tulsi. The number of substances produced depends on native of the soil, harvesting and process. It is an elixir for cough: the leaves when chewed after meals act as a digestive agent. The phytochemicals present in the plants like fixed oils, essential oils, and mineral oils etc can be extracted by the Soxhlet extraction .It has established its use in the field of medicine as an alternate to allopathy ,now it is gaining gradual popularity ,in density .Tulsi is truly the "Queen of Herbs".

REFERENCES:

- <https://www.yourarticlelibrary.com/biology/plants/tulsi-sources-macroscopical-characters-and-uses/49961>
- <https://www.parentcircle.com/holy-basil-tulsi-leaves-uses-health-benefits/article>
- <http://www.fitnessgenie.in/health-benefits-tulsi-holy-basil-herb/amp/>
- https://www.researchgate.net/publication/290170414_A_review_on_Krishna_tulsi_Ocimum_tenuiflorum_Linn
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4296439/>
- https://www.researchgate.net/figure/Tulsi-plants-in-India-References-1-Kress-WJ-et-al-Use-of-DNA-barcodes-to-identify_fig1_284750483
- [https://pubmed.ncbi.nlm.nih.gov/16170979/#:~:text=Eugenol%20\(1%2Dhydroxy%2D2,the%20therapeutic%20potentials%20of%20Tulsi.](https://pubmed.ncbi.nlm.nih.gov/16170979/#:~:text=Eugenol%20(1%2Dhydroxy%2D2,the%20therapeutic%20potentials%20of%20Tulsi.)
- https://www.researchgate.net/publication/240614205_A_Review_on_Phytoconstituents_of_Ocimum_Tulasi
https://www.researchgate.net/publication/271824469_Chemical_composition_of_the_essential_oil_of_Ocimum_tenuiflorum_L_Krishna_Tulsi_from_North_West_Karnataka_India
- https://www.researchgate.net/publication/316452521_Pharmacological_and_physico-chemical_properties_of_Tulsi_Ocimum_gratissimum_L_An_updated_review
- https://www.researchgate.net/publication/316452521_Pharmacological_and_physico-chemical_properties_of_Tulsi_Ocimum_gratissimum_L_An_updated_review

11. <https://gomedii.com/blogs/english/health-a2z/medicinal-benefits-tulsi/>
12. <https://www.guident.net/articles/general/TULSI:-THE-HOLY-HEALING-HERB...!!>
13. <https://slideplayer.com/slide/15124086/>