



OSCIMUM SANCTUM: TULSI (HOLY BASIL)

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Abstract :-

It is an aromatic plant. Plants have served human kind as sources of medicinal agents since its earliest beginnings. In fact natural product once served as the source of all drugs. The main chemical constituents of Tulsi are: Oleanolic acid, Ursolic acid, Rosmarinic acid, Eugenol, Carvacrol, Linalool, and β -caryophyllene, have been used extensively for many years in food products, perfumery, and dental and oral products and plant extract continues the numerous searches for more effective drugs of plant origin which are less toxic and available for low socio-economic population in the treatment of diseases caused by pathogenic bacteria. Recent studies suggest that Tulsi may be a COX-2 inhibitor, like many modern painkillers, due to its high concentration of eugenol. The present study was to evaluate the phytochemical screening of aqueous extracts of leaves of Ocimum. Study has been shown that this medicinal herbs can be used as pharmaceutical adjuvants in the formulation of various dosage form. {2 }

Keywords- Oleanolic acid, ursolic, Rosmarinic acid, Eugenol, Carvacrol, Linalool, β -caryophyllene, Ocimum

Introduction :

Ocimum sanctum also known as Tulsi family of the Ocimum sanctum is Lamiaceae. Ocimum sanctum are produced in India and Southeast Asia, India is the largest source of medicinal plant in the whole world. Herbs have been provided therapeutic potential to the health of individual. The demand of this plant is increasing day by day for medicinal purpose [1]. There are approximately 35,000 medicinal plants which are used for the therapeutic effect according to Ayurveda and Siddha and Unani and other traditional systems. In which Ocimum sanctum is one of the most important for medicinal purpose. It is employed in the treatment of various diseases such as antimicrobial infection, antifungal, anticancer, arthritis, chronic fever, antifertility, eye disease, hepatoprotective, antispasmodic, and analgesic, antiemetic. Cardio-protective [2]. This medicinal herb has also been shown to reduce blood glucose levels, making it an effective treatment of diabetes [3]. There are many chemical constituents present in Ocimum sanctum such as, oleanolic acid, rosmarinic acid, ursolic acid, eugenol, linalool, carvacrol, β -elemene, β -caryophyllene, germacrene. Ocimum sanctum is considered to have diuretic, stimulant property [4]. Volatile oil, fixed oil also obtained from the leaves of medicinal herbs [5]. Monoterpenes are obtained from the volatile oils such as, camphene, myrcene, sabinene, in which some monoterpenes produce oxygen such as linalool, borneol [6]. Phytochemical analysis of this medicinal herb can identify the nature of compounds present in the extract of Ocimum sanctum. It is also for identifying the bioactive compound and their effect. They are commonly helpful as a model for the synthesis of new medicine.

Material and Methods

Chemicals- Mayer reagent, Wagner's reagent, Lead ethanoate, Alkaline reagent, Ferric chloride, Molisch's reagent, Alkaline reagent, Barford's reagent, Iodine solution, Ninhydrin solution, sodium hydroxide, all chemicals were used to find out the presence of phytochemical constituents which were obtained from the research lab of Galgotias university. {2}

Plant Material-

Fresh Leaves of selected medicinal herb *ocimum sanctum* (Tulsi) was harvested from the herbal garden of Galgotias university, Greater Noida in the month of December, 2018. The collected leaves were thoroughly washed with tap water to avoid dusts and other unwanted materials accumulated on the leaves from their natural environment. The dust free leaves were shade, dried at room temperature. After 4-5 days for obtaining aqueous extract, the properly dried leaves were then grinding into the fine powder by using the grinding machine than the powder material of tulsi leaves were weighed properly. The fine powder of tulsi leaves was stored in a clean and tightly closed container for extraction. {2}

BOTANICAL DESCRIPTION :-

Tulsi is an upright bushy shrub that grows up to 18 inches .it's hairy stem sprouted oval leaves with serrated edges and depending the variety ,range in colour from light to dark purple .The tulsi plant bloom's erect purple or reddish flower and produce tiny rust coloured fruit .It has strong pungent aroma and taste that is similar to other varieties of basil . {14,1}



TUSLI PLANT

CULTIVATION:-

The tulsi is a hardy annual but can grow perennial .if the flower's are cut before blooming .sow tulsi seeds after the last frost in well drained ,fertile ,light weight soil and cover with a thin layer of soil .Allow tulsi to receive atleast four hour of sun light and protect from harsh afternoon sun and high heat water . the holy basil throughly and allow to dry out between watering ,use a balanced water soluble fertilizer during the active growing period and discontinue during cooler month when the tulsi plant goes dormant. { 14}

TAXONOMY OF TULSI:-

Kingdom :- Planta
 Divison :- Magnoliophyta
 Class :- Magnoliopsida
 Order :- Lamiales
 Family :- Lamiaceae
 Genus :- Ocimum
 Species :- Sanctum{ 15 }

OTHER NAME's:-

English name - Holy basil/sacred basil
 Hindi name - Tulsi
 Sanskrit name - Tulasi Gujarati name – Tulsi{16}

CHEMICAL CONSTITUENTS OF TULSI

Essentialoil	Aromadendrene oxide,D-Limonene, Benzaldehyde, Eicosane, Borneol ,Cubenol ,Bornyl acetate ,Eucalyptol,Camphor,Caryophyllineoxide,ci s-alpha Terpinol, Cardinene, Eugenol, Farnesene ,Farnesol, Furaldehyde, Germacrene ,Heptanol, Humulene ,Selinene, Limonene ,alpha-Thujene,bera- Guaiene n-butyl benzoate Oleic acid ,sabinene, phytol,Camphene ,alpha-Pinene, beta-Pinene.,Linalool	Leaves
AlcoholicExtract	Aesculin, Vitexin, Caffeic acid,Circineol,Galliic Acid ,Galuteolin,Isorientin,Isovitexin,Luteoline, Orientin,Apgenin,Stigmsterol,Cjlorgenic acid,Urosolic acid,Vallinine,Viceni,Molludistin,Aesculeti n,Procatechuic acid.	Leaves/Areal parts
Mineral Contents	Vitamin C ,Zinc ,Vitamin A,Phosphorous,Calcium,Coppe ronChromium	Whole plant

PHARMACOLOGICAL IMPLEMENTATION OF OCIMUM SANCTUM(TULSI):-

ANALGESIC ACTIVITY:- Singh et al. From the website www.allayurveda.com in a dose dependent manner suggesting that the writhing inhibiting activity of the oil is peripherally mediated due to combined inhibitory effects of prostaglandins, histamine and acetylcholine.

ANTI -ASTHMETIC ACTIVITY:- 50% aqueous ethanol extract of dried and fresh leaves and the volatile and fixed oils of OS was evaluated against histamine and acetylcholine induced pre- convulsive dyspnea (PCD) in guinea pigs. The 50% ethanol extract and volatile oil extracted from fresh leaves and fixed oil from the seeds significantly protected the guinea pigs against histamine and acetylcholine induced preconvulsive dyspnea. However, the 50% ethanol extract of dried leaves did not protect the guinea pigs against histamine induced preconvulsive dyspnea {21}

HEALING ACTIVITY:- The tulsi plant has many medicinal properties. The leaves are a nerve tonic and also sharpen memory. They promote the removal of the catarrhal matter and phlegm from the bronchial tube. The leaves strengthen the stomach and induce copious perspiration. The seed of the plant are mucilaginous

FEVER AND COMMON COLD:- The leaves of basil are specific for many fevers. During the rainy season when malaria and dengue fever are widely prevalent, tender leaves, boiled with tea, act as preventive against these diseases. In case of acute fevers, a decoction of the leaves boiled with powdered cardamom in half a liter of water and mixed with sugar and milk brings down the temperature. The juice of tulsi leaves can be used to bring down fever. Extract of tulsi leaves in fresh water should be given every 2 to 3 hours. In between one can keep giving sips of cold water. In children, it is very effective in bringing down the temperature

COUGH:- Tulsi is an important constituent of many Ayurvedic cough syrups and expectorants. It helps to mobilize mucus in bronchitis and asthma. Chewing tulsi leaves relieves cold and flu

SORE THROAT:- Water boiled with basil leaves can be taken as drink in case of sore throat. This water can also be used as a gargle {23}

ANTI -ALLERGIC AND IMMUNOMODULATOR:- Essential oil of Tulsi was found to have anti-allergic properties. When administered to laboratory animals, the compound was found to inhibit mast cell degranulation and histamine release in the presence of allergen. These studies reveal the potential role of Ocimum sanctum extracts in the management of immunological disorder including allergies and asthma

ANTI -MICROBIAL ACTIVITY:- Essential oil of Tulsi has antibacterial, antifungal and antiviral properties. It inhibits the growth of E. coli, B. anthracis, M. tuberculosis etc. Its antitubercular activity is one-tenth the potency of streptomycin and one-fourth that of isoniazid. Preparations containing Tulsi extracts significantly shorten the course of illness, clinical symptoms and the biochemical parameters in patients with viral hepatitis and viral encephalitis {24}

USES:-

1. Used against respiratory ailments including bronchitis and tuberculosis.
2. Used for rhinitis (inflammation of nasal mucus membrane).
3. Can serve as a cure and prophylactic as well for the severe acute respiratory syndrome (SARS) – The root of the tulsi plant should be crushed and boiled with turmeric powder for a few minutes, after which it should be filtered. Consuming two spoonfuls of this potion twice daily will cure SARS and prevent contracting of the disease.
4. Tulsi tea with honey is a good expectorant especially in cases where fever is involved. 6 The juice of the leaves is given in catarrh and bronchitis in children.

- Chewing the leaves relieves cold and flu. A decoction of the leaves, cloves and common salt also gives immediate relief in case of influenza.

CONCLUSION:-

Tulsi is a popular home remedy for many ailments such as wound, bronchitis, liver diseases, catarrhal fever, otalgia, lumbago, hiccough, ophthalmia, gastric disorders, genitourinary disorders, skin diseases, various forms of poisoning and psychosomatic stress disorders¹⁻². It has also aromatic, stomachic, carminative, demulcent, diaphoretic, diuretic, expectorant, alexiteric, vermifuge and febrifuge properties. Tulsi is also known as "the elixir of life" since it promotes longevity. Different parts of plant are used in Ayurveda and Siddha Systems of Medicine for prevention and cure of many illnesses and everyday ailments like common cold, headache, cough, flu, earache, fever, colic pain, sore throat, bronchitis, asthma, hepatic diseases, malaria fever, as an antidote for snake bite and scorpion sting, flatulence, migraine headaches, fatigue, skin diseases, wound, insomnia, arthritis, digestive disorders, night blindness, diarrhea and influenza.

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