



TULSI: OCCIMUM SANCTUM-A HERB FOR ALL REASONS

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Abstract

Native to the Indian subcontinent, Tulsi (*Ocimum santum* L.) is highly valued for its therapeutic uses in both Ayurvedic and Siddha medicine. Numerous in vitro and human studies have shown that tulsi has multiple functions, including antibacterial and cardioprotective functions. The clinical safety of tulsi has not yet been accurately evaluated in human studies. We conducted a comprehensive literature review of human studies describing clinical outcomes after consuming tulsi. We searched PubMed, Science Direct and Indian Medical Institution databases for studies, theories and printed information. All studies reported optimal clinical results with no significant side effects demonstrated by testing. Further studies are needed to investigate the activity, to clarify the dosage and to clarify the dose. Research shows that Tulsi is a potential lifestyle therapy alternative and more powerful than traditional methods.

Keywords

Tulsi, *Ocimum sanctum*, Ayurveda, Antiinflammatory, Analgesic, Anticoagulant

Introduction

Ocimum Sanctum L. (Labiatae), commonly known as "Tulsi" in Hindi and "Holy Basil" in English, is a sacred Hindu herb worshiped both in homes and temples. The plant is found throughout India up to 1,800 meters in the Himalayas and the Andaman and Nicobar Islands. Various parts of the plant have been claimed to be valuable in many diseases. The Indian Materia Medica describes the use of the plant in the treatment of several diseases, including bronchitis, rheumatism and fever^{1,2}. Most of the studies on *O. sanctum* have been done with the leaves, aqueous and anhydrous extracts of the leaves, or the volatile oil distilled from the leaves. However, many studies on fatty oils extracted from *O. sanctum* seeds have been reported recently.

Tulsi has also been shown to combat metabolic stress by normalizing blood sugar, blood pressure and lipid levels, as well as psychological stress due to its positive effects on memory and cognitive function, as well as anxiolytic and antidepressant properties. Tulsi's broad-spectrum antimicrobial activity, which includes activity against many human and animal pathogens, suggests that it can be used as a hand sanitizer, mouthwash, and water purifier, as well as in animal husbandry, wound healing, and food preservation. . and herbal raw materials and the health of travelers. Cultivating tulsi plants has both spiritual and practical meaning, connecting the farmer to the creative forces of nature, and organic farming offers solutions to food security, rural poverty, hunger, environmental pollution and climate change.

Tulsi-

Tulsi plant has many medicinal benefits. Its leaves tone the nerves, improve memory and help remove phlegm and catarrh from the bronchi. The leaves promote sweating and strengthen the stomach. Colds and mucus are the seeds of the plant. Many fevers can be treated with just basil leaves. The tender leaves boiled with tea can be used as a preventive measure against diseases such as malaria and dengue during the rainy season. A decoction of leaves cooked in half water with cardamom powder along with sugar and milk reduces the temperature in sweet fever.

(a) Image of Tulsi

Medicinal properties Heart diseases can be treated with tulsi

- Tulsi lowers blood pressure.
- Diabetics can benefit from tulsi.
- Tulsi lowers total cholesterol.
- Tulsi lowers blood sugar and contains antioxidant activity.
- It was sometimes used as an anticonvulsant for whooping cough. It helps with stomach cramps. vomiting, diarrhea, constipation and enteritis are symptoms of gastrointestinal catarrh.
- Basil has digestive, carminative, galactagogue, spasmolytic and appetizing properties

Geographical distribution of tulsi



Species Name	Area of Distribution
Rama tulsi (<i>Ocimum sanctum</i>)	Gir national park and sasangir national park
Aamrita tulsi (<i>Ocimum tenuiflorum</i>)	Estran Nepal
Vanatulsi (<i>Ocimum gratissum</i>)	Brazil , china
Sweet Basil(<i>Ocimum basilicum</i>)	Asea, Africa
Thia Basil (<i>Ocimum thrysiflora</i>)	Asea, Africa
PurpleBasil (<i>Ocimum basilicum</i>)	Africa , America and asea
Lemon Basil (<i>Ocimum citriodorum</i>)	Central Africa and south east asea

Anti-inflammatory activity of tulsi

It has been reported that the anti-inflammatory effects of several drugs depend in part on the pituitary-adrenal axis. Evaluation of the anti-inflammatory effect of *O. sanctum* fixed oil in adrenalectomized and adrenalectomized rats showed similar results, suggesting that the anti-inflammatory effect of the oil is independent of the pituitary-adrenal axis. The development of carrageenan-induced foot edema involves three distinct phases of mediator release. The early phase is due to the release of histamine and serotonin, the middle phase is due to the release of kinin-like substances and the later phase is due to the release of prostaglandin-like substances. To confirm the inhibitory effect of *O. sanctum* fixed oil on various inflammatory mediators, the anti-inflammatory effects of the oil on histamine, serotonin, bradykinin and PGE₂-induced paw edema were evaluated in rats. The oil at a dose of 3 ml/kg (ip) significantly inhibited swelling induced by inflammatory mediators. Castor-induced diarrhea in rats has been reported to be mediated by prostaglandin. *O. sanctum* fatty oil prevented diarrhea caused by castor oil. The inhibition of carrageenan-induced foot edema by *O. sanctum* oil and castor-induced diarrhea suggests a possible inhibitory effect of the oil on prostaglandins (or the cyclooxygenase pathway of arachidonic acid metabolism). However, lipoxygenase inhibitors can also prevent carrageenan-induced foot edema. Thus, inhibition of carrageenan-induced foot edema by *O. sanctum* fixed oil may also be due to its inhibitory effect.

Analgesic Activity of tulsi

Pain is one of the most important signs of inflammation. Therefore, it is necessary to evaluate whether a new drug modifies inflammatory pain, which seems to be the most important test, since this type of pain is common in most diseases for which NSAIDs are prescribed. The analgesic effect of fixed oil of *O. sanctum* was evaluated by tail tapping, tail clamp and tail immersion methods. In the tail flight or tail immersion method, the reaction time of the rat or mouse is measured when the tail is pulled by a hot wire or hot water (55 °C), while in the tail clamp method, the reaction time to remove the clamps is measured. A longer reaction time indicates a positive analgesic response. By ip administration, the oil showed negligible analgesic effect compared to morphine. Analgesics that affect the central nervous system can increase the pain threshold of animals to heat and pressure. The results showed that the fixed oil of *O. sanctum* could not raise the pain threshold, which suggested that the oil does not act centrally. The acetic acid-induced writhing response in mice was used to distinguish between central and peripheral analgesic effects of *O. sanctum* fixed oil. Ip or orally administered fatty oil significantly inhibited acetic acid-induced writhing. Due to the nociceptive property of acetic acid, the oil effectively reduced the contraction wave and tail extension of the abdominal wall in mice with trunk flexion and back extension.

Anticoagulant activity of tulsi

O. sanctum fixed oil (3 ml/kg, ip) increased blood clotting time and the response was comparable to that obtained with aspirin (100 mg/kg). The effect appears to be due to the anti-platelet aggregation effect of the oil. The linolenic acid in the oil can be metabolized to EPA, which can inhibit the formation of TXA₂ by cyclooxygenase and produce PGI₃ and TXA₃. Like PGI₂, PGI₃ also has an anti-aggregatory property and although TXA₃ has a much less pro-aggregatory effect on platelets than TXA₂. Thus, the combined anti-aggregation effects of PGI₂ and PGI₃, supplemented by TXA₂ inhibition, may contribute to the anticoagulation of *O. Anointing solid oil*. Therefore, the oil can be used as an anticoagulant, like aspirin

Conclusion

Tulsi is undeniably necessary for a happier and more fulfilling existence for all its restorative properties. This little plant is definitely a great source of healing power. It has been proven and confirmed top down and through research that consumption of tulsi in any structure is safe. Today's science respects and recognizes all these healing properties. Tulsi is a medicinal plant that protects a person from all risks, including those that characterize today's superficiality

World Journal of Biology Pharmacy and Health Sciences, 2023, 13(01), 450–456 456 and unsatisfactory lifestyle. It is considered the king of Indian plants. They play an important role in several Ayurvedic treatments. It has both restorative and restorative properties. *O. Sanctum* fixed oil has significant anti-inflammatory, antipyretic, analgesic, antiarthritic, anticoagulant, antihypertensive, chemopreventive and antibacterial effects. The oil also has an anti-ulcer effect due to the double inhibition of arachidonic acid metabolism. Most disorders, e.g. inflammation or fever is caused by oxidative stress. The α -linolenic acid (ω -3 fatty acid) present in the oil can act as a reducing agent/antioxidant and thus cause the biological effects of the oil. However, further research is needed to further comment on this topic. The presence of anti-inflammatory, anti-ulcer and antibacterial properties in a single entity, ie. solid oil, also seems to be unique.

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