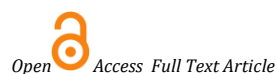


Available online on 15.10.2023 at <http://jddtonline.info>

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

Copyright © 2023 The Author(s): This is an open-access article distributed under the terms of the CC BY-NC 4.0 which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited



Review Article

An overview on *Saussurea obvallata*: A spirituo-scientific plant of India

Jyothi R* and Srinivas Murthy K M**

*Asso.Prof., Department of Biotechnology, RJSFGC, Bengaluru-34, India

** Asso. prof. Dept. of Microbiology and Biotechnology, B.U, Bengaluru, India

Article Info:



Article History:

Received 19 July 2023
Reviewed 04 Sep 2023
Accepted 24 Sep 2023
Published 15 Oct 2023

Cite this article as:

Jyothi R, Srinivas Murthy KM, An overview on *Saussurea obvallata*: A spirituo-scientific plant of India, Journal of Drug Delivery and Therapeutics. 2023; 13(10):145-146

DOI: <http://dx.doi.org/10.22270/jddt.v13i10.5973>

*Address for Correspondence:

Jyothi R, Asso.Prof., Department of Biotechnology, RJSFGC, Bengaluru-34, India

Abstract

Saussurea obvallata (*S. Obvallata*) is one of the beneficial plant which has been used in various countries as traditional medicines. Some of the species have been identified as endangered ones. Realizing the importance of one of *S. Obvallata* in ornamental, spiritual and traditional purposes, a review studies was undertaken to understand the scientific investigations carried out on the plant and spiritual practices in India have been focused as a part of germplasm conservation in India.

Keywords: *S. obvallata*, Brahma kamal, medicinal, spiritual plant

Introduction

Saussurea obvallata is a plant belonging to Asteraceae family, which is native to Himalayas of India, Nepal, Bhutan etc. Commonly known as 'Brahma kamal' in Hindi and 'Brahma kamala' in Kannada as it is named after the creator of the Universe-Lord Brahma and it resembles that of lotus on which Lord Brahma sits, according to Indian ancient literature. Also it is called by names such as 'Queen of night', Lady of night and 'night blooming cereus' as the flower blooms only during night time and it takes nearly two hours to bloom completely and measures around eight inches. Also, it is regarded as 'King of Himalayan Flowers', because of its abundance in that region. *S. obvallata* plant bears attractive white flowers as a result of plant pollination through insects. The purple heads of flower are concealed from sight in coatings of yellow-green thin bracts and it blooms in the mid-monsoon along the hills side grasses and rocks. *S. obvallata* is also regarded as 'State flower of Uttarakhand' and is very often offered to hill temples such as Badrinath and Kedarnath^{1,2,9,11}.

Kingdom: Plantae

Phylum: Tracheophytan

Class: Magnoliopsida

Family: Asteraceae

Genus: *Saussurea*

Species: *S. obvallata*

The genus '*Saussurea*' is named after an alpine scientist, Horace Benedict de Saussure, while the specific appellation, *obvallata* is consequential of the word '*obvallatus*' meaning "surrounded by wall". There are nearly four hundred and ninety species in the genus *Saussurea* and *S. obvallata* has been well known for its various medicinal and religious practices^{2,12}.

S. obvallata thrives widely amidst of Indian Himalayan regions and attracts with its special features such as tussocks (cushion forms) acaulescence, involucre bracts, stout stems, requiring low temperature to bloom etc., making the plant and especially the flower the most beautiful.

One of the mythological stories reveals that the *S. obvallata* is regarded as 'life giving flower' as once Lord shiva when beheaded his own son Lord Ganesha, Lord brahma created this plant using water from the petals of the flower to revive Lord Ganesha.

The studies have also revealed that the extract of *S. obvallata* flower can reduce liver inflammation by controlling the free radicals that damage liver, can act as antipyretic, possess antimicrobial action, reduces cold and cough, boosts the nervous system, heals the wound etc.

It is also believed the flower with its bright colour attracts people around along with its unique odour and creates a positive vibration around and hence some people believe that flowers of *S. obvallata* brings prosperity in the place where it blooms.

The leaves possess antimicrobial activity and flowers have

antioxidant action², whole plant has radioprotective and anti-hypoxic and bract contains radioprotective activity³.

Also the studies have indicated that *S. obvallata* extract consists of various constituents such as Alpha-terpineol, Androstan-17-One,3-ethyl-3-hydroxy, (5 alpha)-, Bupleuronol, 1- Docosanol, Doconexent, Dehydrocostus lactone, Dibutylsebacate, Eltanolone Gamma- curcumene Gondoic acid, Henicosanoic acid, Linalyl acetate, Litsomentol, Linoleic acid, Methyl palmitate, Methyl oleate Methyl asterrate, Palmitic acid, Pentacosanoic acid, Piperine, and Stearic acid⁴.

The investigations have revealed that the inflorescence, leaves and stem consists of maximum amount of protein (26.25%), iron (0.042%) and crude fibres (20.00%) respectively. Also some of the aminoacids such as alanine, aspartic acid, alpha alanine, beta alanine, glycine, iso leucine, histidine, lysine, methionine, serine, phenylalanine, threonine and tryptophan have been recognized in the species^{5,13}.

Because of its manifold uses, the *S. obvallata* has been recognized as endangered species and fore most preference has been provided for the species by CAMP (Conservation Assessment Management Plan)^{6,7}.

Methods

The literature explorations were conducted on *S. obvallata* using various scientific search engines such as Google scholar, Science direct, Web of science, PubMed and published literatures.

Conclusion

The current literature survey studies focused on understanding the medicinal and religious importance of *S. obvallata*. From the earlier investigations carried out¹⁰, it is clear that the species possess various medicinal properties and upon which advanced research can be done, however our studies conclude that *S. obvallata* plant is very useful medicinal plant which could be cultivated on small areas as a micro initiative towards germplasm conservation and religious practices of worshipping the plant and its products in India shall be very beneficial method to preserve and conserve them for future so that research findings can be carried out to screen the important metabolites that can be used for therapeutics and thus the plant can be regarded as spirituo-scientific plant of India.

Acknowledgement:

Help received from RJSFGC, Bengaluru (Bengaluru City University) and Dr. Ramarao, Central Ayurveda Research Institute has to be duly acknowledged.

Conflict of interest: Authors have no conflict of interest

References

1. Kamal B, Brahma Kamal-the spiritually revered, scientifically ignored medicinal plant. *Current Science*, 2013; 104(6):685
2. Semwal P, Verma S, Thapliyal A, Brahma Kamal: A source of livelihood in the life of locals of Kedarnath shrine. *Science and Culture*, 2019a; 85(3-4):113-114
3. Semwal P, Painuli S, Tewari, D, Bussmann, RW, Palni, L M S, & Thapliyal A Brahma Kamal (*Saussurea obvallata* (DC.) Edgew.): Ethnomedicinal, phytochemical and pharmacological overview of an important Himalayan medicinal plant. *Ethnobotany Research and Applications*, 2020; 19:1-15
<https://doi.org/10.32859/era.19.40.1-15>
4. Liang-Wen BI, Wen-Hui LI, Wei Duan, Ying GU, Protective effects of *Saussurea obvallata* extracts on ionic radiation in mice. *Journal of Modern Oncology*, 2009b; 7:1218-1221
5. Semwal P, Painuli S, Antioxidant, antimicrobial, and GC-MS profiling of *Saussurea obvallata* (Brahma Kamal) from Uttarakhand Himalaya. *Clinical Phytoscience*, 2019;51-11
<https://doi.org/10.1186/s40816-019-0105-3>
6. Tiwari V K, Rajwar, G S, & Rawat, GS Chemical composition of *Saussurea obvallata* Wall. ex Clarke, I. *Indian journal of forestry*, 1986
7. Bisht MK, Bhatt KC, Gaur RD, Folk medicines of Arakot valley in district Uttarkashi: an ethnological study. In: Purshottam Kaushik (ed.) *Indigenous Medicinal Plants*, 1988; Today Tomorrow Printers and Publishers, New Delhi, India
8. Budha-Magar S, Sher H, Kunwar R.M, Bussmann, RW, & Ur Rahman I, *Saussurea albescens* (DC.) Sch. *Saussurea lappa* (Decne.) Sch. Bip. *Saussurea obvallata* (DC.) Sch. Bip. A steraceae. *Ethnobotany of the Himalayas*, 2020; 1-9
https://doi.org/10.1007/978-3-030-45597-2_217-1
9. Trilock Chand Saini Brahma Kamal Plant - Flowering Time, Mythological Stories, Medicinal Benefits; February 9th, 2022.- A blog
10. Vijayalakshmi M, Umamaheswari A, Agalya B, Jegasubramaniam S N, & Prabu S L, Foresight on phytoconstituents and associated pharmacological activities of traditional medicinal plant: *Saussurea costus* (Falc.) Lipschitz. *Current Pharmacology Reports*, 8(4):281-289
<https://doi.org/10.1007/s40495-022-00287-8>
11. Meenakshi B, Chauhan NS, Pareek, SK, Rekha, N, & Rajesh C, *Saussurea obvallata* (sacred species): a contemporary context of biodiversity conservation. *Indian Forester*, 137(6):718-721
12. Pandey M M, Rastogi, S, Rawat AK, *Saussurea costus*, Botanical, chemical and pharmacological review of an ayurvedic medicinal plant: *Journal of ethnopharmacology*, 2007 ;110(3):379-390
<https://doi.org/10.1016/j.jep.2006.12.033> PMID:17306480
13. Kumar J, & Pundir M, Phytochemistry and pharmacology of *Saussurea* genus (*Saussurea lappa*, *Saussurea costus*, *Saussurea obvallata*, *Saussurea involucreata*), *Materials Today: Proceedings*, 2022 ; 56:1173-1181
<https://doi.org/10.1016/j.matpr.2021.11.145>