



Brahma Kamal – A Specific Exploration

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ABSTRACT

Brahma kamal is Scientifically known as *Saussurea obvallata*. There are various historical milestones which enlightens the existence of *Saussurea obvallata* in Ramayana and Mahabharatha. The most prominent flowering species of Uttarkhand is *Saussurea obvallata* (DC.) Edgew (Brahma Kamal) it is established as the state symbol and it is distributed in several regions which encloses Kedarnath, the Valley of Flowers, Tungnath and Hemkund Sahib. The Himalayan flower which is exclaimed as an endemic herb of the Uttarkhand. There are various forelore claims indicating its use such as antibacterial and antioxidant. The plant is claimed to contain Phenol; Proteins; Saponins and Steroids. It is used in the treatment of Burns and Bruises. It has great impact on the Wound healing process. The present review work is aimed to explore the previous works done on the mentioned plant.

Keywords: Brahma kamal, God's own lotus, Anti oxidant, *Saussurea obvallata*.

INTRODUCTION

Medicinal plants are indeed a wealthiest bioresource of drugs which plays a pivotal role in traditional systems of medicine, modern medicines, nutraceuticals, food supplements, vedic medicines, folk medicines, pharmaceutical intermediates and chemical entities for synthetic drugs. On considering Asteraceae family, *Saussurea obvallata* is one of the largest genera in it. This species can be encountered around the entire Himalayan province, and it grows at an altitude of 3000-4800 m. *S. obvallata* was also found amongst other Asian countries like China, Nepal and Pakistan. *Saussurea obvallata* grows up to 5-10 cm height, its flowers bloom in July-August and are easily identified by its purple colour, which is slightly hidden from light green bracts tend to be papery that are crucial for their survival during the coldest days in the mountain areas. The flowers bloom at the height of the monsoons and abundant in high-altitude places like The Valley of Flowers. Brahma Kamal (*Saussurea obvallata*) popularly known as God's own lotus. Himalayan Lotus, Sah-du Gohghoo (Tibetan), Brahmakamal (Sanskrit) are the commonly referred names of *Saussurea obvallata*. The forelore claim has been obtained in our ancient literatures like Ramayana and Mahabharata for the respective holy flower.¹

Etymology

Horace Benedict de Saussure, plant Taxonomist is the ideal reason for the arrival of generic name, '*Saussurea*' and '*obvallata*' is derived from 'obvallatus', which depicts that it is surrounded by wall it refers to involucriform bracts (Table 1).²

Geographical Distribution

Saussurea obvallata places its existence in high mountain habitats which includes Himachal Pradesh, Hemkund,

Kashmir and Sikkim. It is also distributed in various countries like China, Tibet, Bhutan and Pakistan.

Table 1: Taxonomical classification

Kingdom	Plantae
Phylum	Tracheophytan
Class	Magnoliopsida
Order	Asterales
Family	Asteraceae
Tribe	Cynareae
Genus	<i>Saussurea</i>
Species	<i>Saussurea obvallata</i>
Binomial name	<i>Saussurea obvallata</i> (DC.) Edgew
Synonyms	<i>Aplotaxis obvallata</i> DC. <i>Theodorea obvallata</i> (DC.)Kuntze



Figure 1: *Saussurea obvallata* flower

Organoleptic Description

On organoleptic Investigation of the plant it revealed that the whole plant of *Saussurea obvallata* is odourless. The exceptional part is found to be the flower which is highly fragrant. The Bracts tends to be sweet, astringent; rhizome & leaf taste bitter astringent; stem taste astringent. Naturally the whole plant is coarse Fig:1.³



Botanical Description

Saussurea obvallata being a Small Perennial herb it grows 60cm long. The presence of purplish to reddish brown hollow erect stem and existence of cauline and basal leaves which are either rosulate or petiolate. The broad basal leaves encompasses scarious margins.

Distinguishing Features

(*Saussera obllavata*) The plant has large, glossy, translucent, pale yellow, papery and boat-shaped bracts surrounding by dense the cluster of dark purple flower heads.

Propagation

Naturally the species propagates through seeds and vegetative perennial rootstock. There is no proper evidence on the propagation protocols for the species. The enrichment of the plant can be done by imparting adequate growth regulators.⁴⁻⁵

Chemical Components

Alkaloids; Calcium; Chromium; Copper; ; Glycosides; Iron; Lead; Magnesium; Manganese; Minerals; Nickel; Phenol; Proteins; Saponins; Steroids; Strontium; Tannins; Terpenoids; Zinc phenolics, flavonoids, lignans, sesquiterpenes and lactones.⁶

Medicinal Uses

Saussurea obvallata is traditionally used for the treatment of paralysis, cerebral ischemia, wounds, cuts, bruises, liver disorders, bone-ache, cough, intestinal and urinal problems. The ground roots acts as a curative agent in wounds, pain, inflammation, boils, skin diseases. Also used as medicine for animals.

Saussurea obvallata is used to decrease body temperature and also to increase hunger. The reduction in the liver inflammation can be done by the consumption of Soup made from this plant. Used in STDs, arthritis, paralysis etc.⁷

Gas Chromatography-Mass Spectroscopy Analysis

The plant material of *Saussurea obvallata* was shade dried and subjected to solvent extraction with the aid of petroleum ether. The chemical compounds present in the petroleum ether fraction is determined by a Thermo Scientific 1310 GC interfaced with a TSQ-8000 Triple Quadrapol-MS detector. The structural elucidation were based on the fragmentation pattern of mass spectra. The dried samples of petroleum ether fractions of *the plant* were separately diluted with respective solvents, then filtered with the aid of 0.2 µm sterile syringe filters, and 1 µL of each fraction solution injected into gas chromatograph and analysed with triple quadruple mass spectrometric detector.⁸

Wound Healing Activity

Wound healing is generally depicted into three various phases. They are Inflammation, Proliferation and remodelling. It comprises of complex reactions and interactions between cells and mediators. Wounds are described as physical injuries that result in the breaking of the skin. The plant extract of *Saussurea obvallata* is used for wound healing. The processes involved in wound healing of *Saussurea obvallata* includes inhibition of Inflammation, Stimulation of Fibroblasts. The invitro testing of the processes is the integral part in the determination of the wound healing activity of the plant. The most frequently used invitro wound healing assays are *in vitro* scratch assay; Electric Cell-substrate Impedance Sensing; microfluidic chambers; and Boyden chamber based transmembrane assays.

The mechanism that plays a pivotal role in wound healing is Cell migration and proliferation.⁹

CONCLUSION

As mentioned in the review, the plant (Brahmakamal) is a plant variety with many medicinal uses but is not scientifically explored much. So the present work was aimed to review the plant. Our future study is focused to explore the uses of the plant scientifically and validate the same.

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