



BAKUCHI – A REVIEW

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Abstract: Bakuchi (*Psoralea corylifolia*) is a medicinal herb which has lots of bioactive properties. It is the most conventional herb that has been used from past hundreds of years. Each part of Bakuchi has its own therapeutic importance. It is mainly used for treating skin problems like psoriasis, eczema, vitiligo etc. The organic compounds obtained from the various parts of the Bakuchi plant are being used as remedies for many diseases because of its properties like anti-diabetic, anti-helminthic, anti-inflammatory, anti-oxidant etc.

Introduction: Plants are being used as source of drugs since ages. Many medicinal plants are nature's gift to us to form disease free sound life. India is one among the various countries in the world where the medicinal plant sector may be a part of time honored tradition that's respected even today. India has good sort of plants having medicinal value. These plants are widely employed by all sections of the society whether directly as folk medicine or indirectly as pharmaceutical preparation of recent medicine. Bakuchi is the most ancient known herbal resource which has been used from past many years. It has a very prominent role in therapeutics and has been used as a conventional medicine as well as modern medicine. The most amazing aspect of this plant is that all parts of it's are useful. Roots, stems, leaves, seeds, and whatever blooms it's ,all are used to treat a spread of skin problems, such as leukoderma, skin rashes, infections, and others.

Taxonomy of Bakuchi:

Kingdom: Plantae

Division: Angiospermea

Class: Dicotyledoneae

Order: Rosales

Family: Leguminosae



Subfamily: Papilionaceae

Genus: *Psoralia*

Species: *Psoralia corylifolia*

Vernacular Name		
1	Hindi	Babachi, Bavanchi, Bhavanj, Bukchi
2	English	Babchi Seeds
3	Sanskrit	Bavanchalu, Bhavanchi-vittulu, Bogi-vittulu, Karu-bogi
4	Urdu	Bebechi
5	Marathi	Babachi, Bavachya
6	Gujrati	Babchi
7	Bengali	Bavachi
8	Kannada	Bavanchigida, Karbekhiga
9	Malayalam	Kapokkari, Kaurkoalari
10	Oriya	Kapokkari, Kaurkoalari
11	Tamil	Bakuchi
12	Telgu	Karpokarishi
13	Punjabi	Babchi
14	Nepalese	Aindavi, Sashilekha, Shulotkha, Sitavari, Soma, Vejani, Avalguja, Bakuchi, Chanderlekha, Chanderprabha, Kushthahantri
15	German	Bawchan
16	Bangladesh	Buckidana
17	Arabic	Loelab el abid, Mahalep
18	Srilanka	Ravoli
19	Chinese	Ku Tzu, Pu Ku Chih, Bu Ku Zhi, Cot Chu
20	Persian	Waghchi, Vabkuchi

Morphology:

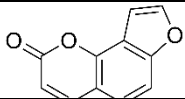
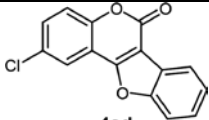
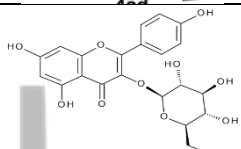
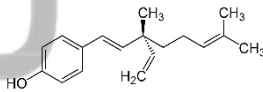
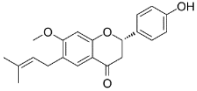
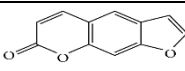
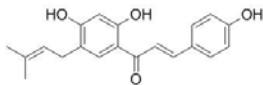
Bakuchi is an erect and annual herb, 60-120 cm height whose stem and branches are grooved and gland-dotted. Leaves are simple, broadly elliptic, round in shape and mucronate at apex, covered with white hair on both surfaces, having infinite black dots, originating from base. Flowers are blue and dense, axillary, 10-30 flowered racemes. Pods 5 mm long, sub globose, slightly compressed, closely pitted, black, beaked without hairs. Seeds are oblong, flattened kidney shaped with very foul odor and bitter taste and are brownish in color.

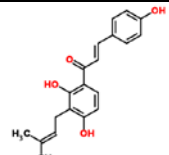
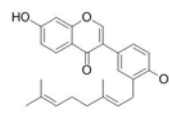
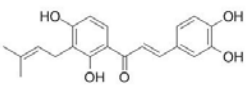
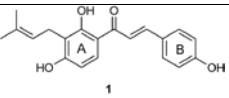
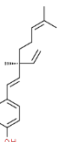
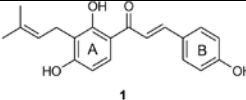
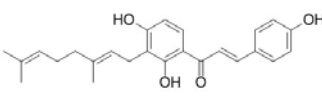
Distribution:

- It is a native plant of India and Shi-Lanka
- It is primarily found in plains of Central India and Eastern part of Rajasthan, Punjab, and some areas of Uttar Pradesh, also found in Tamil Nadu.

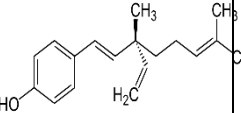
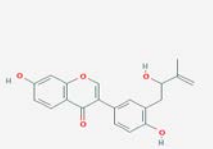
Phytochemicals present in the different parts of Bakuchi:

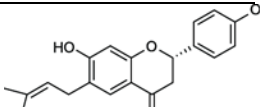
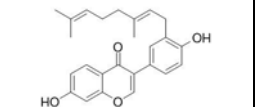
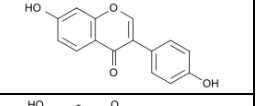
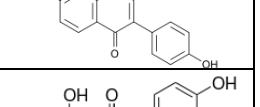
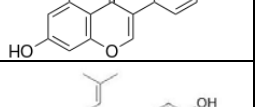
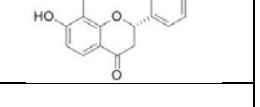
- 1. Seeds:** Number of chemicals are present in the seeds of Bakuchi which are listed below:

Compound	Chemical nature	Property	Chemical structure
1. Angelicin	Furanocoumarin	Antibacterial	
2. Aryl coumarin	Coumarin	Anticancer	
3. Astragalin	Flavonoid	Antioxidant	
4. Bakuchiol	Meroterpene	Antibacterial, Antifungal, Retinal regeneration, Anti-aging, Estrogen receptor agonist, Postmenopausal symptoms, Anti-diabetic, Lymphangiogenesis inhibition, Anticancer	
5. Bavachinin	Flavone	Antibacterial, osteoporosis, Anti-alzheimer, Estrogen receptor agonist, Lymphangiogenesis inhibition.	
6. Bakuchicin	Coumarin	Topoisomerase inhibitor	
7. Bavachalcone	Chalcone	Anticancer, CVS protective effect	

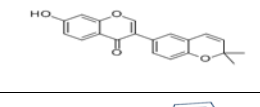
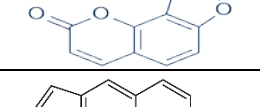
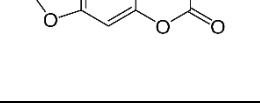
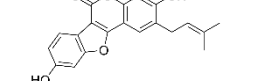
8. Corylifolinin	Chalcone	Antibacterial Carboxylesterase inhibitors	
9. Corylifols	Prenyl flavonoid	Antibacterial	
10. Corylifol B	Flavonoid	Carboxylesterase inhibitors	
11. Isobavachalcone	Chalcone	Estrogen receptor agonist ,Neuroprotective	
12. Hydroxy bukuchiol	Meroterpene	Lymphangiogenesis inhibition	
13. Isobavachalcone	Chalcone	Estrogen receptor agonist, Neuroprotective	
14. Xanthoangelol	Chalcone	Anticancer	
15. Psoracorylifol D	Flavonoid	Lymphangiogenesis inhibition	

2. Fruit: There are many phytochemicals which are present in the Bakuchi fruit. Few of them are listed below:

Compound	Chemical Nature	Property	Chemical Structure
1. Bakuchiol	Meroterpene	Antibacterial, Antifungal, Retinal regeneration, Anti-aging, Estrogen receptor agonist, Postmenopausal symptoms, Anti-diabetic, Lymphangiogenesis inhibition, Anticancer	
2. Bakuisoflavone	Flavone	Antibacterial	

3. Bavachin	Flavonoid	Osteoblast	
4. Corylifol A	Flavonoid	Carboxylesterase inhibitors	
5. Dadzin	Isoflavonoid	Antioxidant	
6. Dadzein	Isoflavonoid	Antioxidant, Antidiabetic, Topoisomerase inhibitor	
7. Genistein	Isoflavone	Ani-diabetic, anti-obesity, antioxidant	
8. Isobavachin	Flavonoid	Osteoblast	
9. Bavachinone A	Flavonoid	Antibacterial	
10. Bavachinone B	Flavonoid	Antibacterial	
11. Bavacoumestan C	Flavonoid	Antibacterial	
12. Coryaurone A	Flavonoid	Antibacterial	
13. Hydroxypsoralenol A	Flavonoid	Antibacterial	
14. Hydroxypsoralenol A	Flavonoid	Antibacterial	

3. Whole plant: There are some phytochemicals which are extracted from the whole plant.

Compound	Chemical nature	Property	Chemical structure
1. Corylin	Flavonoid	Osteoblast Anticancer, Carboxylesterase inhibitors	
2. Isopsoralen	Furanocoumarin	Antiprotozoal	
3. Psoralen	Furanocoumarin	Leucoderma, psoriasis Anticancer antioxidant, anti-Alzheimer Collagengenes	
4. Psoralidin	Coumarin	Estrogen receptor modulator	

Conventional use of Bakuchi:

Bakuchi is a very ancient remedy for many disorders and being used traditionally by folks for several disorders. Its use is also described in Traditional Chinese Medicine system. The seed oil is amazingly helpful, remotely in various skin diseases. In hypo pigmented injuries if the skin likes leucoderma furthermore, psoriasis react well, to nearby application alongside oral treatment. In leucoderma, the seed powder of Bakuchi blended in with Haratala Bhasma (Yellow arsenic), in 4:1 extent and pounded with the cow's pee. This glue is applied on the injuries of leucoderma. In scabies and ringworm pervasions, the bakuchi seed powder blended in with buttermilk is applied externally. In sickness, the seed oil is suggested orally, with beatlenut leaf. Amalaki and Khadira are important adjuvants, with bakuchi, in dermatoses. In persistent skin infection, a combination of bakuchi and karanja oil is usually utilized with Vaseline, Scabies, Psoriasis ringworm and fungus versicular are dealt with effectively with bakuchi.

Bakuchi in Ayurveda:

Ayurveda is the characteristics arrangement of medication. Ayurveda has great significance in blocking and inspiring the maintenance of health through close attention to balance in one's life, right thinking, diet, lifestyle and the use of herbs. The most known content on Ayurveda are the CHARAKA SAMHITA, SUSHRUTA SAMHITA and ASHTANGA HRUDAYA. These contents detail the affect that the five elements found in the global system Earth, Water, Air, Fire and Space. These constitutions are sorted into 3 Dosha:

1. VATA (the energy of movement); where air and space rules
2. PITTA (the energy of metabolism and digestion); where fire rules
3. KAPHA (the energy of lubrication); where earth and water rules

RASA PANCHAK OF Bakuchi:

Hindi/ Sanskrit	
Veerya	Ushana
Vipak	Kattu
Guna	Laghu , Ruksha
Rasa	Tilak , Kattu

English	
Potency	Hot
Metabolic Property	Pungent
Physical Property	Light and Dry
Taste	Pungent , Better

One of the amazing fact about this herb is that whole plant is employed in medicine system for its medicinal properties Bakuchi is helpful in balancing vata and kapha. It is used in phlegmatic disorder and also used in treating leprosy and

skin disorder. Common name of this herb is Kusthghan, it is a best ancient remedy used for kushthoga and leukoderma. The plant is natural blood purifier. It is used to boost immune system and process of detoxification of blood. It has anti- cancer, anti- inflammatory, anti-depressant and anti-glycemic properties. Seeds of this plant is diuretic, asthma, bronchitis and various disorder associated with respiratory disorder and for curing poisoning from scorpion and snake biting. The fruit of the plant bakuchi help in stopping vomiting. It also acts as an anti-ageing agent because it helps to rejuvenate skin. It is used to improve quality and luster of hair.

Effects on Doshas:

Charak Samhita	Sushrut samhita	Chakradutta	Bhavprakash
Tiktasaknda-Herbs with bitter taste	Katu varga- Herbs with pungent taste	Shwitr-Herbs used for shwitr roga	Haritkayadi- Herbs of haritaki group

It balances Kapha (**Shleshmahra**) and increases Pitta (**Pittala**), it balances the movement of body fluids (**Sara**). It also provides relief against constipation (**Vishtambhahrut**) bleeding disorders (**Asrapittanut**), anemia (**Pandunut**), fever (**Jwarahara**), worm infestation (**Krumipranut**), inflammation (**Shothahara**) and skin diseases (**Kushtaghna**) such as psoriasis, vitiligo leukoderma and leprosy in the form of internal as well as external applications. It has been utilized in the treatment of eczema and leaves are good for the treatment of diarrhea. The plant has been utilized in Ayurvedic medicinal system as a cardiac tonic (**Hrudya**), vasodilator and pigmentor and effective for heart problems, asthma, respiratory disorder, bronchitis (**Shwasahara**) and urinary disorder (**Mehahara**). It is also good for the hair as it improves quality and lusture and provide relief in cough and cold (**kasahara**). It also has anti-ageing properties (**Ayushkama**). It is also used in the treatment of anti-fertility.




Bakuchi in Modern medication system:





From last two decades we have seen the mixing of ethnobotanical (use of plants by humans as medicines), phytochemical (chemical occurring in plants) and pharmacological (drug action) studies. From the modern techniques (separation, structure determination and screening) humans have developed latest drugs from the natural resources like medicinal herbs etc. Until 1930, around 90 per cent of the medicines were of plant origin. Then began the period of chemotherapy with the synthesis of sulphonamides and the era of antibiotics

began in the following decade. In modern era people are very much concerned regarding their skin care and they look for the products which are really beneficial and harmless as well as reliable. Bakuchi oil is one such herb which posses all the goodness which people are looking for but when it used in cosmetic products its quality gets alter either due to other inorganic/organic ingredients or due to modern manufacturing processes. Bakuchi (*P. corylifolia*) is a widely used herb and have many diverse ethnopharmacological and medicinal applications.

Examples of modern products having Bakuchi as an ingredient:

- Paula's choice
- Phytoretinol Bakuchiol – Beauty oil
- Herbivore-Bakuchiol
- Snaana-cold pressed oil
- Jubbascom-Bakuchi Gold
- Sattvik- Anti marks serum
- Lovinah- Royal C
- Noili- Light Beauty Oil
- Jrk siddha Psorolin Ointment 75gm
- Khelicare tablet
- Qurez- facial oil
- Chicolle- moisturizing cream

Use of Bakuchi in various Skin Disorders		
1. Leprosy	The bakuchiol extracts from the seeds is effective against bacterial infections or disorders. It acts an anti-bacterial agent and has been used in the treatment of leprosy	
2. Leukoderma	Anti-leukodermic activity is also observed. Psoralen extract is used for leukoderma .	
3. Psoriasis	The bakuchi seed extract mainly in powder form or other form is effectively used as anti-psoriatic agent.	

4. Scabies	Bakuchi plant extracts are useful in treatment of skin infection like scabies.	
5. Vitiligo	Psoralen extract from whole plant bakuchi is used in the treatment of vitiligo. Bakuchi is the most preferred treatment in almost all medication system like Ayurveda, conventional , modern system for vitiligo.	
6. Eczema	The antifungal activity of Bakuchi is very helpful in eczema. Seed extract of bakuchi methanolic extract mainly is used in the treatment of such skin disorders.	
7. Ringworm	The anti-fungal constituents from the fruit and seed of the Bakuchi plant are helpful in ringworm infection which is also known as dermatophytosis.	

Conclusion:

Bakuchi is one of the important drug in the all medication systems that is being in practice since ancient times. Its therapeutical properties and actions have been well described in all Granthas and medical books. Bakuchi contain many phytochemicals which possess different properties like anti-bacterial, anti-fungal, anti-inflammatory, anti-cancer, anti-diabetic and anti-ageing etc. which provide bakuchi a very significant role in the health and cosmetic industry.

In modern era bakuchi is mainly used in the cosmetic products in different formulations with many other ingredients which may not be herbal so there are chances to induce some side effects too.

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