



तुष्टिः पुष्टिर्बलं मेधा सर्वमन्त्रे प्रतिष्ठितम् WSR to Kushmanda -Review Article

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ABSTRACT: Kushmanda or Benincasa hispida Thunb Cogn is a medicinal climber used in Ayurveda and it belongs to family Cucurbitaceae. It is a large climbing and trailing herb cultivated for vegetable throughout India up to an altitude of 1200m. Flowering and fruiting times are during month of June to October. It is described in Samhitas and Nighantus under Shaka Varga (Group of leafy vegetables) and also known in name Brihat Phala, Valli Phala , Pushpa Phala in Sanskrit and Ash gourd , White gourd , Wax gourd and Winter melon in English. Kushmanda is well known for its medicinal and nutritional properties. It is used in Ayurveda from ancient time for medicinal purpose for the treatment of various health problems. Juice of Kushmanda is use by Ayurvedic physicians in various diseases like Shwasa, Kasa, Apasmara, Unmada. Mutrakricchra, Mutraghata and in treatment of Visha. It is having Madhura in rasa which acts Rasayana, Brimhana, Balya and Dhatu Pushtikara(Nourishes tissues). It also have properties like Madhura Vipaka, Sheeta Virya, Laghu and Snigdha . Properties of Kushmanda is depending on the stage of its growth i.e. Bala(Immature) Kushmanda is Pitta Shamaka and Sheeta in nature, Madhyama Kushmanda (Not fully mature)fruit increases kapha, Pakwa or Briddha(Fully Mature) Kushmanda is described as Laghu, Swadu, Deepana, Tridosha Hara and alkaline nature. It having Pharmacological properties like Anti fungal, Anti oxidant, Antibacterial and beneficial in hypertention, cataract, glaucoma, cancer, headache, migraine and reduces the chances of strokes etc. This article is a review on drug Kushmanda mentioned in Ayurvedic classics.

KEYWORDS: Kushmanda, Ash gourd, Benincasa hispida, Nighantu, Pharmacological activities.

INTRODUCTION

In Ayurveda various Acharyas described the properties and medicinal uses of herbs for various diseases. The medicinal plants are considered as rich source of ingredient that are useful for drug manufacturing and also these plants had an important role for development of human culture around the world. Moreover, the nutritional values and results in treatment for various ailments, some medicinal plants are considered important in Brihatrayi. Kusmanda is one of them described under Phala Varga. Several Sanskrit names are given like Pushpa Phala, Petha Pushpam, Brihat Phalam, Kushmandika and Kumbha Phala etc in classics and popularly known as Ash gourd in English. It is an annual climber, botanically known as Benincasa hispida and belongs

to family Cucurbitaceae. It having Rasa – Madhura, kshara, Guna in ama Avastha- guru, pakwaavastha- Laghu, Veerya in Ama Avastha – Sheeta, Pakwavastha – Alpa Sheeta, Vipaka in Ama Avastha – Katu, Pakwavastha - Madhura, Doshaghata-Vata Pitta Shamaka, Prabhava- Medhya, Sarva Dosha Hara.

Dhanvantari Nighantu mention. It as best among Valli Phala. Kayodeva Nighantu described the properties of unripe fruits, ripe fruits, juice, pulp and leaves separately.

It is medicinally useful in Mutra Vikaras and Apasmara, Raktapitta, Kshaya, Jwara, Aruchi, Grahani, Pandu, Kamla, Shosha, Trishna, Bhrama, Kasa, Urakshata and it is also useful in hiccup, dyspnoea, bleeding disorders, injury to chest and consumption, improves intelligence, memory and strengthen the heart.

It having potential sources for valuable nutrients functional foods, rich in protein, minerals, Vit-A, C, B₁₂, Zinc, Phosphorus, Iron, Alkaloids, Terpenoids, Phenolic compound, tocopherols etc. So it having beneficial effects on hypertension by mentioning blood pressure, helps in kidney disorders, Cancer, Cardiovascular disease, cataract, glaucoma etc. Due to presence of potent chemicals it shows pharmacologically Antioxidant, Antifungal, Antibacterial and diuretic activities etc.

VERNACULAR NAMES

Sanskrit: Kushmanda	Kannada: Budhikumbala
English: Ash gourd	Malayalam: Kumbalam
Hindi: Petha	Tamil: Pusanikkai
Bengali.: ChalKumra	Marathi.: Kohala

TAXONOMICAL CLASSIFICATION:

Kingdom	Plantae clade
Clade	Anfiosperms
Clade	Eudicots
Clade	Rosids
Order	Cucurbitales
Family	Cucurbitaceae
Subfamily	Cucurbitodeae
Tribe	Benincaseae
Genus	Benincasavi
Species	Benincasahispida

SYNONYMS IN AYURVEDA

SL.No	Synonyms	B.P	D.Ni	K.Ni	R.Ni	Ni.A	So.Ni
1	Kushmanda	+				+	
2	Pushpaphala	+		+			
3	Peethapushpam	+				+	
4	Brihatphalam	+			+	+	
5	Kushmandika		+				
6	Kumbhaphala		+		+		+
7	Sthirphala		+	+			
8	Kushmandi		+		+		
9	Somashrishta		+				

10	Peethika		+				
11	Somamritha			+			
12	Mahaphala			+			
13	Karkotika				+		
14	Kumbhari			+			
15	Somashrishtika			+			
16	Karkaru					+	
17	Suphala				+		
18	Nagapuspaphala				+		
19	Kushmandini						+
20	Supushpaka						+
21	Karkarika						+
22	Phala						+
23	Kushmandaki			+			
24	Peethaka			+			

CLASSIFICATION IN AYURVEDA

- Bhavparkash Nighantu – Shaka Varga
- Dhanvantari Nighantu – Guduchyadi Varga
- Saligram Nighantu – Saka Varga
- Raja Nighantu – Mulakadivarga
- Nighantu Adarsha – Kushmandadi Varga
- Kayodeva Nighantu – Saka Varga
- Priya Nighantu – Pippalyadi Varga
- Sodhala Nighantu – Guduchyadi Varga

MORPHOLOGY OF PLANT¹

- A large trailing gourd climbing by means of tendrils; hispid beneath.
- Flowers yellow, unisexual, male peduncle 7.5- 10cm long, female peduncle shorter.
- Fruits broadly cylindrical, 30-45cm long, hairy throughout, ultimately covered with a waxy bloom.

CHEMICAL CONSTITUENTS²

The major constituents of Benincasa hispida fruits were volatile oils, flavonoids, glycosides, saccharide's, proteins, carotenes, vitamins, minerals, β -sitosterin and uronic acid.

GEOGRAPHICAL DISTRIBUTION AND CULTIVATION

Plant grows in plains and hills to an altitude of 1,204 meters. It is commonly cultivated for producing fruits used as vegetable and edible fruits. It is generally cultivated over warm countries. It is in Europe and America since roman era. It is found in India, Ceylon and Burma. Though it grows all over India but most commonly found in Punjab and Uttar Pradesh. Seeds do propagation and cultivation of Kushmand. In the plains cultivated plant, seeds are sown during the month of February. The fruits are ready in 3–6-month period.

PHARMACODYNAMICS IN AYURVEDA

- Rasa – Madhura³, Kshara (Vridha)⁴
- Guna⁵-Ama Avastha Guru, Pakwaavastha- Laghu

Veerya⁶ – Ama Avastha – Sheeta, Pakwaavastha – Alpa Sheeta

Vipaka⁷ – Ama Avastha – Katu, Pakwawastha - Madhura

Doshaghnata-Vata Pitta Shamaka

Prabhava- Medhya

Sarva Dosha Hara- (Pakva Phala)

Acharya Sushruta details the properties of Bala and Pakwa Kushmanda and also delineates the properties of Kushmand Beeja Tailam⁸. It is a potential source for valuable nutrients functional foods.

Seeds oil – rich in protein, minerals, Vit-A, C, B₁₂, Zinc, Phosphorus, Iron, Alkaloids, Terpenoids, Phenolic compound, tocopherols (B. hixpids). γ -tocopherol reduces the risk of Cancer and Cardiovascular disease whereas A tocopherol is noted to be effective in cellular signal in, preventing lipid & poly saturated fatty acids peroxidation. It is a potential source of nutrients and functional foods. Ash ground seeds are discarded as waste by industries like Petha industries in north India.

Seed – Kushmand seeds are Anti-bacterial and Antifungal in properties. Seeds are also very valuable for their Antioxidant activity; Seeds are also use in Pharmaceutical and Cosmetic Industries.

It is also use in swelling for its diuretic effect, by adding it as a vegetable it has a great result for obese patents for weight loss.

Kushmanda seeds are rich in potassium so they are very effective for maintain the blood pressure in hypertension patients and kidney disorders. It is Kashtha Varga Aushadhi so it also used for mercury poisoning. If mercury prepared drugs consumed by the patient in wrong dose Kushmanda reduces the efficacy of that drug.

Kushmanda also knows as a source of Vit C (19.11%) that reduces the chance of stroke. Tocopherol is also found in Kushmanda that helps to prevent cold & flu and also lower the risk of cancer & cardiovascular diseases. Vit b₁₂ and Vit b₂ are also find in it and they responsible for decrease the headache due to migraine and reduce eye disorder like Cataract and Glaucoma etc, it also maintains Congestive Heart failure.

A study of American Institute of clinic nutrition shows people who intake adequate amount of Vit. C, their chances of stroke are reduced by 42%, eliminates face radicals: tobacco, smoke radiation, prevent cardiac diseases, Cancer & Arthritis. Study also shows that it reduce the eye related problems like keratoconus, Cataract, Glaucoma and very beneficial in deficiency of riboflavin deficiency of Vit B₂. It also maintains energy level of body and also balances the digestive system.

Indication & uses in ayurveda

At “Annapana Vidhi Adhyaya” in Charaka Samhita Kushmanda is mentioned by Acharya Charaka, Acharya mentioned that Kushmanda is heavy, unctuous, sweet, cold in potency and purgative. They produce draught during the process of digestion. They become wholesome for intake when boiled and drained of the juice and added with fatty substances in plenty.⁹

Acharya Charaka specially mentioned properties of ripe Kushmanda that it is sweet and sour in taste, slightly alkaline and light. It helps to alleviates all three vitiated Doshas and also helps in elimination of urine and faces¹⁰.

Kushmanda (Valli Phala) is mentioned in Chardi Chikitsa Adhyaya 20 in Chikitsa Sthana for Vamana Prayoga with other Vamana Karaka drugs¹¹.

In Sushruta Samhita Sutra Sthana “Rasvishesha Vijnaniya” Acharya mentioned Kushmanda in Madhura Varga¹².

Ripe and unripe Kushmanda properties are also mentioned by Acharya Sushruta. Young fruit of Kushmanda pacifies Pitta while middle aged one increases Kapha, the white (ripe) fruit is light, hot, alkaline, appetiser, diuretic, alleviates all doshas, is beneficial for heart and wholesome for those having mental disorders¹³.

Maharshi Sushruta described Anupana that is beneficial to take Aasava of Darvi and Karira after eating Kushmunda Shaka¹⁴.

Acharya Sushruta compared the shape of Vikrita Garbha with Kushmunda fruit in Sharira Sthana Adhyaya“Shukra Shonita Shudhi Sharira”¹⁵.

In Sushruta Samhita, Valli Phala (Kushmunda) is mentioned as unwholesome (poison) combination mixed together with milk¹⁶.

Valli Phala is mentioned in Dushyodara Chikitsa in Sushruta Samhita Chikitsa Sthana 14/8¹⁷.

Pushpa Phala (Kushmunda) is mentioned as Yogya for Pratyaksha Karmabhyasa for demonstration of different ways of excision on various fruits¹⁸.

Acharya Sushruta also mentioned Kushmunda Swarasa Prayoga in Madataya in Panatyayapratishedham Adhyaya Uttarthana¹⁹.

Acharya Vagbhata mentioned the properties of Kushmunda along with other vegetables. Kushmunda increases Kapha and Vata, breaks the hard faeces, Abhishyandi -causes more secretions in the tissues, sweet in taste and not easily digestible In Annaswarupa Vijnaniya Adhyaya²⁰.

Acharya described the Kushmunda as the best among the creepers, mitigates vaat and pitta, cleanses the urinary bladder, and aphrodisiac²¹.

In “Arsha Chikitsa” Adhyaya, Acharya Vagbhata mentioned Kushmunda along with Gunja and Surana for rectal suppository in Piles²².

Kushmunda Ghrita is mentioned in Apasmaradhikara which can cure Apasmara very well²³.

Kushmunda Vati is mentioned in Mishraprakaran in Krutanna Varga. It controls the diseases of Pitta and Rakta and are light to digest²⁴.

In Yogratnakara, Kushmunda properties are described in Purvardha Dhanyadi Phalaka and Shaka Guna²⁵..

In Apasmara Chikitsa, Kushmandadi Yoga and Kushmandadi Ghrutam is described and specified that Mature Kushmunda is Pathyakara in Apasmara²⁶.

Vangasen described Khand Kushmunda in Amlapitta Rogadhikara Adhayaya²⁷.

Kushmand Ghritam is described in Apasmaradhikara Adhayaya²⁸.

In Harita Samhita Pratham Sthana, Kushmunda is described under Shakavarga and Kushmunda Gunas are described²⁹.

In Apasmar Chikitsa Prakrana, Kushmunda Ghrita is described³⁰.

In Hikka Shwas Chikitsa Prakrana, Kushmunda Churna with Koshnajala is stated to cure Shwasa and Kasa³¹.

FORMULATIONS

Preparation	Indication
Kushmunda oil	Diuretic and lower Agni ³²
Kushmunda oil	Diuertic ³³
Juice of Kushmunda with paste of Yashti	Epilepsy and gives good intelligence, speech and voice ³⁴ .
Kushmunda Rasayana Yoga	Cough, hiccup, fever, dyspnoea, bleeding disease, injury to chest and consumption, heals the ulcer in the chest, improves intelligence, memory and strength and a tonic to the heart ³⁵
Kushmandavleha	Raktapitta, Kshyaya, Jwara, Aruchi, Grahani, Pandu, Kamla, Shosha, Trishna, Bhrama, Kasa, Urakshata and also it is Balya and Brimhanakaraka ³⁶ .

Kushmanda Kalyana Guda	Grahani diseases, skin diseases, haemorrhoids, fevers, anaemia, chest diseases, distension, jaundice, diseases of urinary system, arthritis, etc. It brings balance among Vata, Pitta and Kapha Doshas ³⁷ .
Kushmanda Kshara	Relief from severe colic in Shooladhikara chapter ³⁸ .
Khanda Kushmandaka Rasayana and Vasakhanda Kushmandaka	Raktapitta Chikitsa ³⁹ .
Guda Kushmandaka Yoga	Increase appetite, destroys Kasa, Shwasa, Jwara, Hikka, Chardi and Aruchi and Vajikarana ⁴⁰ .
Khanda Kushmanda	Amla Pitta Chikitsa ⁴¹ .
Kushmanda Rasa with Laksha	Rajyakshmadhikara- Raktakshaya ⁴² .
Kushmandaka Beeja Prayoga	Unmada Chikitsa Prakarana ⁴³ .
Kushmanda Khanda and Vasakhanda Kushmanda	Raktapitta Chikitsa.
Kushmanda Kalyanaka Yoga	Grahani Roga Chikitsa Prakrana.
Kushmanda Rasa Prayoga with Yavakshara and Sugar	Mutra Krichhra Chikitsa.

DOSAGE

Fruit- it is used as vegetable.

Seed powder- 3-6 gram.

Seed oil- 5 ml.

SIDE-EFFECTS AND CONTRADICTIONS

There are no known side effects with this herb.

In obese people, it should be used for a limited period, in minimal dose. It increases Kapha, hence it is not ideal to use this in winter and whenever someone has cold, asthma or bronchitis. However, it is very useful in post tuberculosis recuperation period. It improves weight. If it is sweet, it is not ideal during indigestion. It is considered generally safe to consume during pregnancy, lactation period.

CONCLUSION

Kushmanda is a medicinal plant which is well known for its medicinal as well as nutritional values useful in Ayurvedic formulations. It is one of the most naturally energizing foods consumed by Indians. References about its use in Sthavara, Jangama Vishas and Madya Visha are necessary to explore for clinical application. It is proven as anti-inflammatory, analgesic, antimicrobial and antipyretic also. These efficacies might help in many cases of Dushi Visha affected people, generally treated under the diagnosis of skin issues or other metabolic disorder. More and more observational study or case study presentations are needed to do for different value addition and for its multi fold clinical applications.

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