



Nutritional values and Therapeutical Benefits of *Kushmanda* (Winter - Melon)-A Review.

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Abstract-

Ahara is considered as *Mahabheshaja* in Ayurveda. *Shaka Varga* is one among the *ahara varga* explained by all *Acharyas*. Ayurveda has given more importance to the intake of variety of food articles like vegetables, fruits, grains on the basis of *Rasapachakas* with its Nutritional and Therapeutic Benefits in promotion of health in healthy person, prevention and treatment of diseases. The aim and objective of this following article is to compile all the information about *Kushmanda* with taken all references of all Ancients of Ayurveda and modern Authors. This article provides all essential information about *Kushmanda* with classical references as well as modern view.

Keywords- *Kushmanda*, Nutritional value, Therapeutical benefits. *Ahara*, *Rasapachaka*,

Introduction-

The fruit of *Benincasa hispida* is comes under *Cucurbitaceae* family, commonly known as Winter melon and “*Kushmanda*” according to Ayurveda. It is relevant as nutritive source as well as medicine for *manasaroga*, digestive disorder, urinary disorder, reproductive disorder.

Winter melon is cultivated throughout India and has a high market demand. It is creeper like plant grows annually. Its leaves 10-15 c.m in diameter, hard white coloured covered with Stiff bristly hairs. The flower stalk of male flower is 10 c.m, while female is 30 c.m. The size of fruit is a large egg bearing white bristly hairs. Its seeds are flat, white, flowering in winter and fruits ripen in summer.

The chemical composition of *Kushmanda* is Cucurbitine, bitter resin, myosine, viteline, starch and salts, seed contains stable oil, fruit contains 96% of Water.

The sweet delicacy that is known as “Agra Petha” is prepared from Winter melon. The winter melon is also known as ash gourd, wax gourd, white pumpkin.

AIM:

To compile all Ayurvedic and modern Nutritional and therapeutical benefits about *Kushmanda* in a single page.

OBJECTIVE-

- 1.To review all *Bruhatrayis*
- 2.To review all ancient *Nighantus*
- 3.To review all authors of Modern text.
- 4.To review all related journals, e-References.

MATERIALS AND METHODS-

Review of related Ancient and modern text, journals, e-References.

Synonyms¹-

- *Karkotika, Kushmandi,*
- *Kumbhandi,*
- *Bruhatphala,*
- *Suphala,*
- *Kumbhaphala,*
- *kshiraphala,*
- *Nagapushpaphala,*
- *Pittika,*
- *Sthiraphala,*
- *Amruta,*
- *Mahatphala*
- *Karkati,*
- *Mahaphala,*
- *Kushmanda.*

**Name of different Language:**

- Hindi- Petha
- Panjabi – Petha
- Bengal- Kumda
- Malyali- Kumpalam
- English - White pumpkin
- Odia - Pani kakharu
- Marathi – Kohala
- Karnada - Ala

Pharmacodynamics-*Rasa-Madhura**Guna-Laghu,Snigdha**Vipaka-Madhura**Virya-Sheeta**Prabhav-Medhya***Karma and Prayoga²**

- a. Dosh karma-1. Madhura, snigdha -Vatta Shamaka
 2. Madhura, sheeta-Pitta shamaka
- b. Avastha -1. Bala- Pitta nasaka,shitala
 2. Madhyama-Kapha nasaka
 - 3.Pakwa- Saevadoshanasaka,Deepana,Basthisodhana,Laghu,Usna
Madhura,Manasarogahara,Khariya.

Kushmanda in various Nighantu³-*Bhavaprakash Nighantu-Shakvarga**Dhanvantari Nighantu-Guduchyadi varga**Kaiydev nighantu-Aushadhi varga**Madanpala Nighantu-Shaka varga**Raja Nighantu-Mulakadi varga**Shodhala Nighantu-Guduchyadivarga**Nighantu Adarsha-Kusmandadi varga***Properties and Action⁴-***Dosha-Tridosha Shamaka**Dhatu-Rakta, Mamsa, Meda, Majja, Shukra**Mala-Mutra*

Table no.1: Shows Nutritional value of Kushmanda per 100 gm.^{5,6}

Serial no.	NUTRITIONAL CONTENT	VALUE
1	Calories	13 gm
2	Protins	0.6 gm
3	Carbohydrates	3 gm
4	Fiber	3 gm
5	Fat	< 1 gm
6	Vitamin c	14 mg
7	Riboflavin	8 mg
8	Zinc	6 mg
9	Iron	0.4 mg
10	Thiamin	0.04 mg
11	Niacin	0.4 mg
12	Magnesium	10 mg
13	Phosphorus	19 mg
14	Calcium	19 mg
15	Pantothenic acid	0.13 mg

Differe nt type of *Yoga* described in various *Samhita*-

1.According to *Yogaratanakar*^{7,8,9}- *Sweeta kusmanda* is used as a *pathya* in *Daha, Unmada roga*.

In *Amlapitta Kushmanda* is *apathya* but *Khanda kushmanda*

With *Godugdha* or *Amla churna* is *Pathya*.

2.According to *Bhaisajya Ratnavali*¹⁰ -*Kushmandadi yoga*-*Apasmara nasaka*

Kushmanda guda- *Garvasaya doshahara, Grahani*

Rogahara, Kushmanda churna, Kushmanda ghutra-Hikka, Swasa

Rogahara. Kushmandakhanda, Vasakushmadakhanda, Bruhatkushmanda avaleha are also described here,

- *Kushmanda* is used as a brain tonic and act as tranquilizer and useful in schizophrenia, debility, memory loss.
- *Kushmanda* has Laxative and coagulative property helps in bleeding Pills due to *Madhura, snigdha* and *sheeta veerya*, its seed oil is used in tapeworm and also it useful in abdominal colic pain.
- *Kushmanda* is useful in both circulatory and respiratory system like *raktapitta*, cough, fever, asthma.
- *Kushmanda* has *sheeta veerya* so it stimulate effect on urine formation. Its fruit pulp and seed used in nephritis, renal calculi.
- *Kushmanda* has Spermatogenic property and used in loss of libido due to *Madhura* and *snigdha* property.

- *Kushmand* useful in summer for relieve burning sensation and fever.
- Antidiabetic activity¹¹-Majumdar et al. (2010) Clinical evaluation of Winter melon fruit juice in Type 2 Diabetes patients for 21 consecutive days showed that the blood glucose levels reduced by approximately 42%.
- Hypoglycaemic and hypolipidemic activity- Use of Winter melon extract produced a 60% reduction in blood glucose, plasma TGs and free fatty acids in rats (Lim,2007). The alcoholic extract of ash gourd at 200 mgkg⁻¹body weight for 45 days reduced the blood glucose levels from 195 to 118 mgdL⁻¹) in alloxan induced diabetic rats than in normal rats (Battuet al., 2007).
- Antioxidant property- In vitro and in vivo studies indicated ash gourd fruit juice and extract have antioxidant activity, especially in the human liver and brain (Huang et al., 2004; Rao et al., 2007). Studies also prove that the fruit of Winter melon have a tendency to decrease renal injury after ischemia or reperfusion injury of the kidney in albino rat models (Bhalodia et al.,2009).
- Anti-inflammatory activity-Free radical scavenging activity of Winter melon seed might have been responsible for reduction of inflammation in carrageenan- induced paw oedema in rats (Grover and Rathi, 1994). Study proves that petroleum ether extract and Benincasa hispida seed oil inhibited testosterone which induced hyperplasia of the prostate in experimental rats model.
- The anti-angiogenic property- of the seed extract of Benincasa hispida is proven as it inhibits the proliferation of endothelial cells induced by bFGF.
- Nutritive Value of winter melon. Winter melon encompasses of high-water content approximately 96% and is a rich source of dietary fibres. Dietary fibres from winter melon have excellent prebiotic activity (Sreenivas and Lele, 2013). Though Winter melon consumption contributes to negligible number of calories, carbohydrates, proteins and fats, it's a good source of Vitamin C, flavonoids and carotenes. The efficacy of winter melon fruit in preventing cell damage and preventing type 2 Diabetes and heart disease may be attributed to the antioxidant property of its constituents. The functionally important bioactive and therapeutic compounds phenolics, sterols, and glycosides of ash gourd can be used for treatment of epilepsy, ulcers and other nervous disorders. The antacid action of winter melon helps maintain body pH and counteracts acidity caused by some foods. Also, the unique dietary constituents promise to aid digestive function and helps attain weight loss. The fruit is also source of Magnesium, Potassium, calcium, iron and phosphorous. Cucurbitacin B found in winter melon has cytotoxic and anti-inflammatory activity. The triterpenes- alnusenol and multiflorenol from winter melon are active histamine release inhibitors (Grubben and Denton,2004).

CONCLUSION-

Ayurveda promotes using *Kushmanda* by calling it best among “*Valli phala*” or creepers. It is said to be brain tonic, digestant, diuretic, rejuvenative etc in classical textbooks. While going through the present research studies of the herb, it can be said without doubt that the fruit of *Benincasa hispida* can be utilized for its nutritive value and medicinally for preventing chronic disorders like Type 2 Diabetes and therapeutically for managing urinary disorders, psychosomatic disorders, ulcer and reproductive disorders. The anti-inflammatory, anti-oxidant, diuretic, anti-lithiatic, anti-ulcer, hypoglycemic and hypolipidemic activities of the fruit can be attributed to its chemical constituents triterpenes, sterols, glycosides, flavonoids and minerals.

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