

## Study of Nutritive Value and Medicinal Uses of Cultivated Cucurbits

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**Abstract:** The present investigation of the nutritive value and medicinal uses of the cultivated cucurbits were carried out. A total of 14 species under 8 genera of the cultivated cucurbits were collected. In this research, we observed the benefits of cultivated cucurbits, which are found in white gourd, water melon, cucumber, musk melon, pumpkin, bottle gourd, ridge gourd, sponge gourd, teasle gourd, bitter gourd, pointed gourd, snake gourd, in terms of human health. Cultivated cucurbits, which are really useful in human health, also take attention in terms of acid, vitamins and mineral substances in them. By observing the usefulness of cultivated cucurbits, which can grow in our country mainly cultivated, our main aims is to convince that we should grow them more in country wide.

**Key words:** Nutritive value and medicinal uses, cultivated cucurbits

### INTRODUCTION

Cucurbits are the popular name of the family Cucurbitaceae, commonly known as gourd family. A family of about 110 genera and between 650 to 850 species, Cucurbitaceae are distributed mainly in tropical and subtropical regions of the world. Some of its largely represented genera along with their number of approximately reported species include *Momordica* (45, bitter gourd), *Cucumis* (25, cucumber, muskmelon), *Cucurbita* (15, pumpkin, gourd, squash), *Lagenaria* (6, bottle gourd) and *Luffa* (6, sponge gourd)<sup>[14]</sup>.

The cultivated species investigated in this study belong to the genera *Benincasa*, *Citrullus*, *Cucumis*, *Cucurbita*, *Lagenaria*, *Luffa*, *Momordica* and *Trichosanthes*. These are used as fruits and vegetables, and most of them have considerable economic value<sup>[9]</sup>.

Economically the family is fairly important. The fruits of *Benincasa*, *Cucurbita*, *Cucumis*, *Lagenaria*, *Momordica*, *Luffa* and *Trichosanthes* are the common vegetables. Fleshy fruits of *Citrullus* and *Cucumis* are edible. The fruits of cucumber are also used in salad<sup>[12]</sup>.

Cucurbitaceae is the largest group of summer vegetables crops. These include cucumber, muskmelon, watermelon, tinda, bottle gourd, luffa, bitter gourd, pumpkin, squashes, parwal and snake gourd<sup>[4]</sup>.

The cucurbits are large hectare area worldwide and several countries their culture is done. The fruits of cucurbits are very useful in terms of human health, i.e. purification of blood, remove of constipation, good for digestion, and give energy<sup>[11]</sup>.

### MATERIALS AND METHODS

A total of 14 species under 8 genera of the cultivated cucurbits were collected and identified. Observation were made the nutritive value and medicinal uses of the fruits of cultivated cucurbits. The nutritive value of these fruits, i.e. moisture, protein, fat, minerals, fibre, carbohydrates, energy, macro and micronutrients and vitamins were recorded.

The chemical composition and medicinal uses were made with the help of De Candolle<sup>[5]</sup>, Jeffrey<sup>[6]</sup>, Seshadri<sup>[13]</sup>, Bhuya<sup>[1]</sup>, Buss<sup>[2]</sup>, Choudhury<sup>[4]</sup>, Rashid<sup>[11]</sup>, Purselove<sup>[9]</sup>, Pandey<sup>[8]</sup>, Yusuf<sup>[16]</sup>, Chakravarty<sup>[3]</sup> and Kirtikar and Basu<sup>[7]</sup> were consulted.

### RESULTS AND DISCUSSIONS

Medicinal uses of the cultivated cucurbits are given below:

**White Gourd:** Its local name is Chalkumra and scientific name is *Benincasa hispida*. The fruits are edible. Sweets are prepared from the pulp of fruits. The fruits are used for making jam, jelly, morobba, cake and kumrabari. The kumrabari is very popular substances of the curry menu in our country. Biochemical features of the fruits are useful for human health. Fruit is tonic, nutritive, diuretic, antiperiodic; specific for haemorrhages from internal organs. It is also useful in case of insanity, epilepsy and other nerve disease. Seeds are vermifuge against tapeworm and diuretic. It is also beneficial in case of constipation, heart disease, tuberculosis, colic pain and as aphrodisiac<sup>[16]</sup>.

**Water Melon:** Its local name is Turmuz and scientific name is *Citrullus lanatus*. The ripe fruits are edible and largely used for making confectionary. Its nutritive values are also useful to the human health. Fruit is used in cooling, strengthening, aphrodisiac, astringent to the bowels, indigestible, expectorant, diuretic, stomachic, purifies the blood, allays thirst, cures biliousness, good for sore eyes, scabies and itches. The seeds are tonic to the brain<sup>[7]</sup>.

**Cucumber:** Its local name is Khira or Sasha and scientific name is *Cucumis sativus*. The fruits are edible and very much used as salad. Its fruits are also remove human constipation and good for digestion. The fruits are much used during summer as a cooling food. They are used as salads and for cooking curries. The tender fruits are preferred for pickling kernels of the seeds are used in confectionary<sup>[3]</sup>. Fruit is demulcent. Seeds are cooling, tonic, diuretic and anthelmintic. Leaves are along with cumin seeds administered in throat affections<sup>[16]</sup>.

**Musk Melon:** Its local name is Phuti or Bangi and scientific name is *Cucumis melo*. The ripe fruits are edible and green fruits are used as vegetable. Its ripe fruits are very much useful in human kidney disease. The fruits are extensively used as dessert fruits and are highly esteemed in summer months. Sometimes eaten as vegetable when unripe. Melons of drier regions are sweeter and tastier than those of moisture situation<sup>[3]</sup>. The seeds are diuretic, cooling, nutritive, and beneficial to the enlargement to prostate gland. The pulp is diuretic and beneficial to chronic or acute eczema. The ripe fruit is cooling, flattening, tonic, laxative, aphrodisiac, cures biliousness, allays faligue<sup>[16]</sup>.

**Pumpkin:** Its local name is Bilati and scientific name is *Cucurbita maxima*. This is grown for its large edible fruits, which are eaten as vegetable. The fruits are useful in human blindness. Matured fruits of pumpkin are used as a table vegetable for baking in pies and for making jam; also as a live stock feed. The young fruit resembles the vegetable marrow in flavour but the full grown fruit is much liked<sup>[3]</sup>. The fruit is diuretic, tonic, allays thirst. The seeds are anthelmintic and used as diuretic and tonic. The fruit pulp is often used as inflammations and boils<sup>[16]</sup>.

**Squash Gourd:** Its local name is Mistikumra and scientific name is *Cucurbita moschata*. The fruits are edible and eaten as vegetable. Matured fruits of squash gourd are used as a table vegetable for baking in pies and for making jam; also live stock feed. The flesh is usually fine-grained and mild-flavoured and is thus suitable for baking. It has fantastic shape and coloration of fruits considered attractive for horticultural purpose as ornamental plants<sup>[3]</sup>.

**Squash:** Its local name is Safed kadu and scientific name is *Cucurbita pepo*. The fruits are edible and eaten as vegetable. The fruits are also useful in human blindness. The fruits are cooling, astringent to the bowels, laxative, good for teeth, throat, eyes. The leaves are digestible, haematinic, analgesic, remove biliousness and also used as an external application for burns. The seeds are diuretic, tonic, fattening cure sore chests, bronchitis, fever, allays thirst, good for the kidney and the brains<sup>[7]</sup>.

**Bottle Gourd:** Its local name is Panilau and scientific name is *Lagenaria siceraria*. It is cultivated throughout our country. The fruits are eaten as vegetable. The fruits are cooling and very much useful to human health in summer season. White pulp of fruit is cooling, emetic, purgative, diuretic and antibilious. Oil from the seeds are cooling and used to relieve headache. Seeds are nutritive and diuretic. Decoction of leaves mixed with sugar given in jaundice. Warm of tender stem relieves earache. Fruit is used in cholera<sup>[16]</sup>.

**Ridge Gourd:** Its local name is Jhinga and scientific name is *Luffa acutangula*. The fruits are eaten as vegetable. Fruit is demulcent, diuretic and nutritive. The seeds are possesses purgative and emetic properties. the pounded leaves are applied locally to splenitis, haemorrhoides and leprosy. The juice of the fresh leaves are dropped in to the eyes of children in granular conjunctivitis, also to prevent the lids adhering at night from excessive meibomian secretion<sup>[16]</sup>.

**Sponge Gourd:** Its local name is Dhundol and scientific name is *Luffa cylindrica*. The fruits are edible and eaten as vegetable. It is good for health. The dried fruits yield a spongy substance which are used as a bath sponge<sup>[8]</sup>. The seeds are emetic and carthartic. Young fruits are cool, demulcent, productive of loss of appetite and extive of mind, bile and phlegm<sup>[16]</sup>.

**Teasle Gourd:** Its local name is Kakrol and scientific name is *Momordica cochinchinensis*. The fruits are eaten as vegetable. It nutritive components are good for health. Fruits and leaves are used in external application for lumbago, ulceration and fracture of bones. The seeds are used as aperient and in the treatment of ulcers, sores and obstructions of liver and spleen<sup>[16]</sup>.

**Bitter Gourd:** Its local name is Karala and scientific name is *Momordica charantia*. It is cultivated throughout the country for its fruits which are eaten as vegetable. The fruits are considered tonic, stomachic, carminative and cooling. The fruits are very much useful in human diabetes. The fruits are also used as

**Table 1:** Nutrient components of the fruits of cultivated cucurbits (per 100g of edible portion)<sup>[10]</sup>.

Nutrient components	Denomination	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Water Moisture)	g	92.5	92	96.3	92.7	92.6	94	92.0	96.1	95.2	93.0	80	92.4	92	94.6
Protein	g	0.4	1.0	0.4	0.6	1.4	1.0	1.5	0.2	0.5	1.2	2.1	1.6	2.0	0.5
Fat	g	0.1	-	0.1	0.2	0.1	0.1	0.1	1.0	0.1	0.2	-	0.2	0.3	0.3
Minerals	g	0.3	-	0.3	0.3	0.6	0.6	0.6	0.5	0.3	-	-	0.8	0.5	0.5
Fibre	g	0.8	-	0.4	0.5	0.7	0.7	0.7	0.6	0.5	2.0	-	0.8	3.0	0.8
Carbohydrate	g	1.9	6.5	2.5	5.9	4.6	4.6	4.8	2.5	3.0	5.0	17.4	4.2	4.2	3.3
Energy	calori	10	35	13	125	13	21	25	12	20	22	80	25	20	18
Calsium	mg	30	7.0	10	0.17	10	23	15	120	40	25	36	20	30	50
Magnasium	mg	-	-	11	-	14	14	15	5	11	-	-	17	9	53
Phosphorus	mg	20	7.0	25	-	30	30	32	10	40	-	-	70	40	20
Iron	mg	0.8	-	1.5	0.04	0.7	0.3	0.8	0.7	1.6	1.0	-	1.3	1.7	1.1
Sodium	mg	-	-	10.2	-	5.6	5.6	5.9	1.8	2.9	-	-	17.8	2.6	25.4
Potassium	mg	-	-	50.0	-	139	139	150	87	50	-	-	152	83	34
Copper	mg	-	-	0.1	-	0.20	0.20	0.25	0.3	0.16	-	-	0.18	1.11	0.11
Sulphur	mg	-	-	17.0	-	16	16	18	10	13	-	-	15	17	35
Chlorine	mg	-	-	15.0	-	4.0	4.0	5.0	-	7.0	-	-	8	4	21
Vitamin A	I.U.	20	599	40	190	1840	2000	1700	60	56	84	125	210	255	160
Thiamine	mg	0.06	0.05	0.03	0.06	0.06	0.04	0.07	0.03	0.07	0.03	0.08	0.07	0.05	0.04
Riboflavin	mg	0.1	0.05	0.01	-	0.04	0.02	0.03	0.01	0.01	0.03	0.06	0.09	0.06	0.06
Nicotinic acid	mg	0.4	-	0.2	0.4	0.5	0.5	0.6	0.2	0.2	0.3	-	0.5	0.5	0.3
Vitamin C	mg	1.0	6.0	7.0	35	2.0	15	20	6	5	7	-	88	29	5
Oxalic acid	mg	-	-	15.0	-	-	-	-	-	27	-	-	-	7	34

1. *Benincasa hispida*, 2. *Citrullus lanatus*, 3. *Cucumis sativus*, 4. *Cucumis melo*, 5. *Cucurbita maxima*, 6. *Cucurbita moschata*, 7. *Cucurbita pepo*, 8. *Lagenaria siceraria*, 9. *Luffa acutangula*, 10. *Luffa cylindrica*, 11. *Momordica cochinchinensis*, 12. *Momordica carantia*, 13. *Trichosanthes dioica*, 14. *Trichosanthes anguina*.

febrifuge, rheumatism, gout and disease of liver and spleen. The seeds are used as anthelmintic. The fruits and leaves are anthelmintic, useful in piles, leprosy, jaundice and as vermifuge<sup>[16]</sup>.

**Pointed Gourd:** It local name is Pitol and scientific name is *Trichosanthes dioica*. The fruits are eaten as vegetable. The leaves are also consumed as vegetable. Its nutritive values are good for health. Fresh juice of unripe fruit is used as cooling and laxative. The fruit is also used in spermatorrhoea<sup>[15]</sup>. Leaf is aperient, also used to be tonic and febrifuge, used as diet in subacute cases of enlarged liver and spleen. Fruit is febrifuge, laxative and antibilious<sup>[16]</sup>.

**Snake Gourd:** Its local name is Chichinga and scientific name is *Trichosanthes anguina*. It is cultivated throughout the country. The fruits are eaten as vegetable. The fruits are also used as tonic and laxative<sup>[15]</sup>. The seeds are anthelmintic and anti-diarrhoea; used for biliousness and in syphilis. The seeds are also used as cooling<sup>[7]</sup>.

The fruits of cultivated cucurbits are really useful for human health. These fruits have got water, protein, fat, minerals, fibre, carbohydrates, energy, calcium, magnesium, potassium, phosphorus, iron, sodium, copper, sulphur, chlorine etc. In other hand, it has got vitamin A, Thiamine, Riboflavin, vitamin C and nicotinic acid and oxalic acid (Table 1).

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