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Overview of Ash Gourd as a Nutraceutical Source



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ABSTRACT

Ash Gourd (*Benincasa hispida*): This is a mini-review with scientific research findings in different studies on ash gourd. The intent is to determine the corollary properties of the under exploited crop 'Ash gourd' and the authenticated health claims. However due to restrictions and folkloric beliefs in the past, it was necessary to draw attention on the scientifically available reports to make information available in brief to the health-conscious consumers and even the researcher from the area of corollary foods and nutrition. Naturally the entire ash gourd plant, including fruit peel, flower, seed, and leaves are used. Biochemical activity of the fruit includes anti-oxidative, anti-inflammatory, anti-angiogenic, detoxificant and curative effects in treating various ailments. The essential minerals Ca, Mg, Fe, Cu, Zn and Se are also present in it. In Ayurveda, it is recommended for treating peptic ulcer, urinary tract infections, diabetes mellitus, epilepsy and other nervous system disorders. Ash gourd, have been widely studied, and diverse health benefits have been reported hence, there lies a scope for researchers. The review examines the use of Ash gourd as a food and for medicinal uses. Ash gourd is a good source of flavonoids and carotenes, these two antioxidants believed to help protect your body against cell damage and prevent certain conditions like - type 2 diabetes and heart diseases. The approach to information collection was finding the research gaps and possible areas for future work with a nutritional and medicinal perspective. Understanding the nutritional as well as medicinal potential of ash gourd from scientific studies may influence both the work areas and consumers in the proper direction.



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INTRODUCTION

Ash Gourd, *Benincasa hispida* (Thunb.) Cogn. Commonly called hairy melon, wax gourd, winter melon, ash pumpkin, “Kushmanda” in Ayurveda is relevant as nutritive source as well as a medicine is the only species in the genus *Benincasa*.^[1,2]

Immature ash gourd is coated in fine hairs which disappear as the gourd ripens. The exterior colour can vary between dark green to pale grey. Mature gourds are coated in a distinctive white ash. This powdery coating is where the melon derives its other common name, “Ash Gourd”. The shape of the gourd can also vary between round and oblong. It is an important warm-season cucurbit vegetable, grown for its succulent hairy fruits, used as a vegetable, in confectionery and Ayurvedic medicinal preparations.^[2,3]

Normally the entire ash gourd plant, including fruit peel, flower, seed, and leaves are used. The biochemical activity of the fruit includes anti-oxidative, anti-inflammatory, antigenic, detoxificant, and curative effects in treating various ailments. The review examines the use of ash gourd as a food and for medicinal uses.^[4,5]

The fruit is applauded to offer various health benefits and has been used in traditional Chinese and Ayurvedic medicine for centuries. However, only a few of its benefits are currently backed by science.^[5]

Ash gourd is a low-calorie fruit that is rich in water, fibre, and other beneficial nutrients. It is commonly used in traditional medicine to prevent or treat various ailments and makes for a versatile addition to many dishes.^[6]

Ash gourd supplies plenty of nutrition, being inherently high on water content providing a cooling effect on the body, having zero cholesterol thereby augmenting heart health and abounding in a plethora of vitamins and minerals to facilitate key metabolic functions in the body.^[7]

Nutritional Value of Ash Gourd

Winter melon primarily contains 90% water and is exceptionally low in calories, fat, protein, and carbs. It is present with vitamins and minerals including vitamin c and vitamin B complex especially niacin (vitamin B3), thiamine (vitamin B1), and riboflavin (vitamin B2).

Furthermore, it remains rich in other micro and macro minerals like iron, sodium, potassium, zinc, calcium, magnesium, iodine and manganese.^[7,8]

Properties of Ash Gourd



Nutritional values of Ash gourd

MACRO nutrients	Vitamins	Minerals
Total Fat-3.9g	Vitamin A-9.8%	Calcium-5.1%
Saturated fat-0.5g	Vitamin B6-11.33%	Magnesium-6.7%
Total carbohydrate-12.5g	Vitamin B3-0.5%	Phosphorus-5%
Dietary fibre- 0.6g	Vitamin C-30.5%	Zinc-7.2%
Protein-2g	Vitamin E-1. 1%	Iron-5.7%
Cholesterol-0.0mg		Manganese-12.5%
Sodium-33 mg		Iodine-5.9%
Potassium-359.1mg		

Parts of Ash Gourd



The fruit is a large fleshy pepo. It consists of the thin skin of epidermis, fleshy and juicy mesocarp and swollen, thick placenta. The fruit is tricarpeal, syncarpous with peripheral placentation. Fruits of this plant are traditionally used to treat renal diseases, jaundice, dyspepsia, fever, and menstrual disorders. The methanol extract of the fruit is reported to possess anti-ulcer, anti-inflammatory, antihistaminic, and antidepressant activities. Fruits of *Benincasa hispida* are traditionally used for the treatment of epilepsy and other nervous diseases. ^[9]

The seeds and leaves are also highly nutritive and beneficial. ^[10]

- Both the seeds and the leaves help in treating dysuria.
- Useful in breaking down renal calculi.
- The laxative nature of the seed regulates bowel movement and prevents constipation, stomach cramping, and other digestive disorders.
- Ash gourd nourishes and helps in treating emaciation.
- It also strengthens your immune system to fight against diseases. ^[10]

Health benefits of Ash gourd

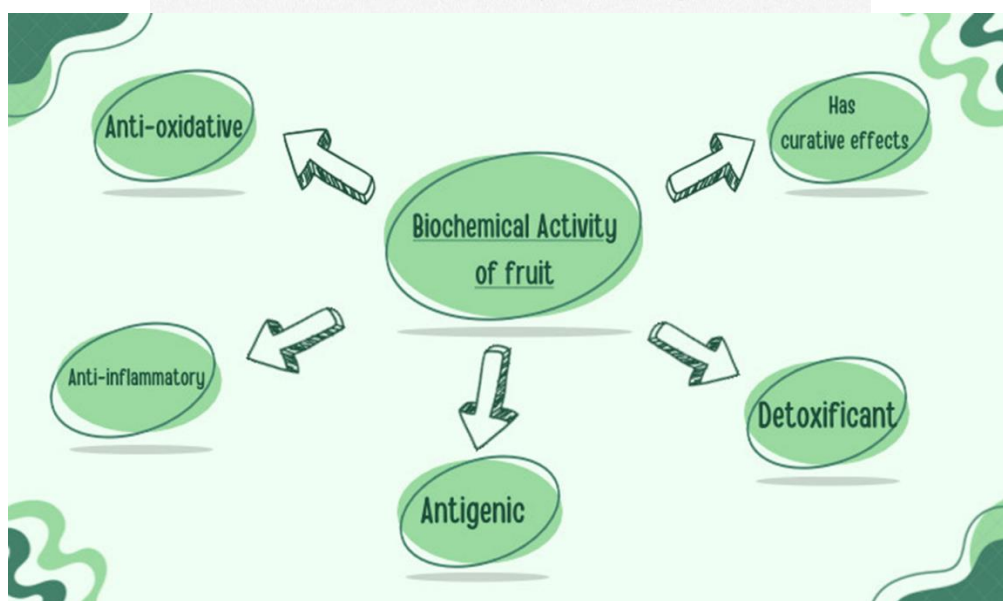


Health Benefits of Ash Gourd

Ash gourds have a connection in aiding weight loss. Many consume it in its liquid form as a detox juice. Some of the reasons for this are:

It is a fibred rich vegetable. High fibrous foods tend to slow down the rate of digestion. Consuming small portions of it can promote a feeling of fullness for long hours. It is extremely low in calories, which allows for their intake in larger quantities as well. It makes a good option to snack on. It contains a negligible amount of fat, which is an added advantage.^[11]

The Biochemical activity of Ash gourd fruit



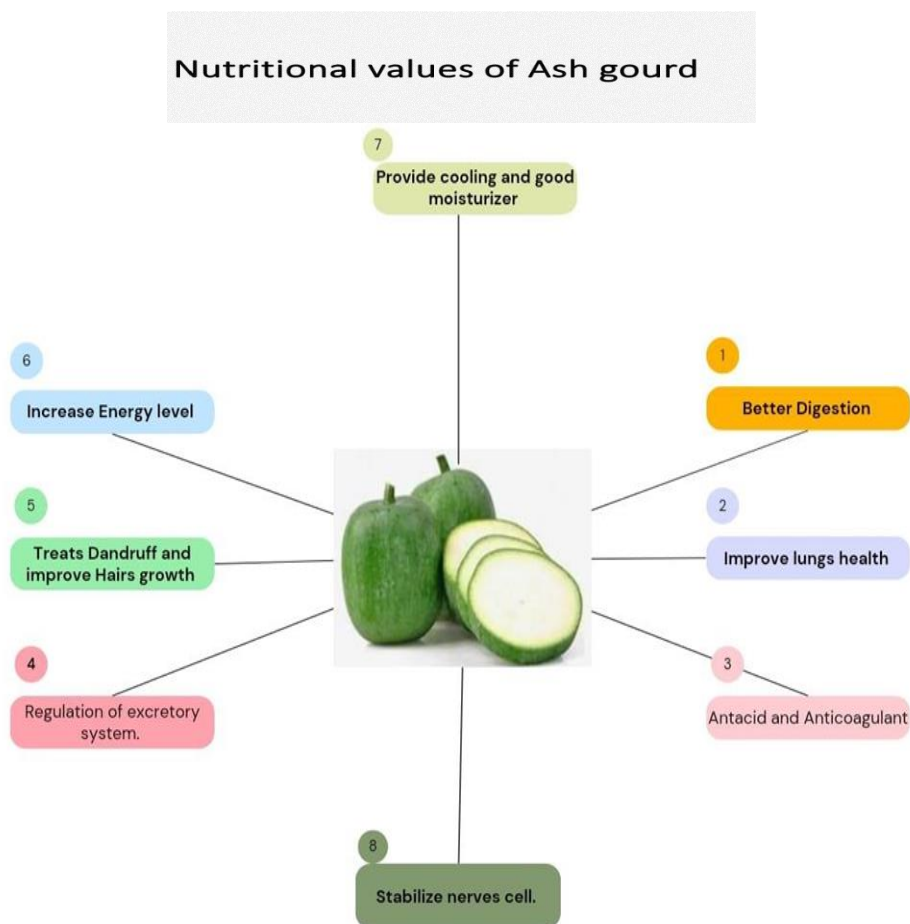
Vitamin B2 present in it provides increased energy levels for workouts and muscular activities. Potassium in ash gourd acts as a diuretic. It helps to avoid water retention and bloating. Stress eating is a major cause of weight gain. Ash gourds contain riboflavin, which helps to regulate stress hormones. Riboflavin also manages thyroid hormone levels.^[11]

Ash gourd has a cooling effect on the body. It is high in soluble fibre which makes it excellent for maintaining the gut health. Being rich in soluble fibre, promotes the growth of beneficial bacteria, alleviates indigestion causing constipation, haemorrhoids, etc., thereby keeping the colon healthy. Ash gourd is also considered advantageous for treating stomach acids and associated issues like hyperacidity, dyspepsia, and ulcers.^[12]

Boosts Immunity - Some researchers believe that ash gourd has excellent anti-inflammatory and anti-microbial properties which makes it a significant contributor to boosting immune health. To sum up, ash gourd is healthy, nutritious, and good to treat many healthy ailments.^[11] It can be included easily in the diet to enjoy the health benefits. Some studies also support that ash gourd may also help diabetic patients in maintaining blood sugar levels of the body. It acts as a natural anticoagulant in the body, promoting healthy hair and skin. The only caution while consuming ash gourd should be taken by people having sinusitis, cold and asthma because of its cooling effect on the body. Such people can consume ash gourd in combination with an herb or spice like black pepper to neutralize the effect.^[11,12]

Roles Of Ash Gourd for Better Life ^[11,13]

1. Ash gourd aids in better digestion.
2. Ash gourd improves lung health.
3. Ash gourd boosts energy levels.
4. Ash gourd treats ulcers naturally.
5. Ash gourd contains anti-coagulant properties.
6. Ash gourd provides a cooling effect.
7. Ash gourd relaxes the body.
8. Ash gourd regulates excretory system.
9. Ash gourd treats dandruff.
10. Ash gourd contains moisturizing property.
11. Ash Gourd contains moisturizing property. ^[11,13]



The side effects of Ash gourd juice are as follows:

Ash gourd contains anti-nutritional factors (e.g., Phytates, oxalate, etc.), which might reduce the body's ability to absorb nutrients. A diet containing ash gourd in large quantities may risk calcium deposition, which might lead to calcium Renal calculi. Various toxicological studies on animals suggest that ash gourd may be safe and might not have any adverse effects until and unless consumed in excess.^[13]

CONCLUSION

This Mini-review with scientific facts was desired to make the society aware about the extensive features and values of a nutraceutical plant called Ash gourd.

The intent of this review article was to avoid any misconceptions about the plant and acknowledge the society about its importance and merits through all the veritable information and facts.

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