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Review Article

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Incredible Benefits of Exotic Kiwano (Horned Melon) for Wellness, Vigour and Vitality

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Abstract: The kiwano belongs to the Cucumber family. The alien looking fruit has similarities with Pomegranate and Passion fruit in its texture and is a traditional food plant in the African continent. Its increasing popularity in the health arena is due to the abundance of health benefits it possesses. It improves cognitive function, used as a recovery aid for heart stroke; kiwano melon slows down the ageing process and even neutralizes the free radicals in the body. The high fiber content in kiwano makes it an ideal digestive aid. Due to the presence of essential nutrients, minerals and organic compounds in the fruit, it got recognition by WHO, stating kiwano to be an essential fruit in fighting against illness and malnutrition. The health benefits of the kiwano are in the nutrients it contains including vitamin C, Fe and K. It also has smaller amounts of P, Mg, Zn, Ca, Cu, and Na. The seeds contain linoleic and oleic acid. Linoleic acid is an omega fatty acid which is required for human health while oleic acid is thought to help in lowering the blood pressure. A couple of anti-oxidants recognized in kiwano seeds are α -tocopherol as well as β -tocopherol. The yellowish-green colored pigments are located at the seeds. Its pulp contains the carotenoid, beta carotene. The beta carotene strengthens the body's defense mechanisms and sustains eye and skin health. It may also help to prevent cancer simply by suppressing the growth of free-radicals. This review article is aimed to discuss the diseases or ailments that are treated with the plant *Cucumis metuliferus*.

Keywords: Fatty acids, Free radicals, Illness, Malnutrition, Minerals, Tocopherol.

INTRODUCTION

Cucumis metuliferus, Horned Melon or kiwano, also called African horned cucumber or melon, jelly melon, hedged gourd, or melano, is an annual vine in the cucumber and melon family. Often known by its nickname in the south eastern United States, blowfish fruit, it is grown for its fruit, which looks like oval melons with horn-like spines. The fruit

of this plant is edible, but it is used frequently to decorate the food. When ripe, it has a yellow-orange skin and a lime green, jelly-like flesh with a tart taste, and texture similar to a cucumber (Ribeiro *et al.*, 2011).

The plants of Cucurbitaceae family provide the necessary nutrients and micro nutrients in order to combat the deficiency

diseases in Africa. Since the Horned Melon is highly nutritious and can be cultivated in arid regions, it helps to improve the malnutrition in Africa and other regions of the developing world. The Horned Melon is primarily a good source of vitamin C, potassium and iron. Other minerals less abundant are magnesium, phosphorous, zinc, copper, calcium and sodium. The seeds of Horned Melon contain a number of fatty acids including linoleic acid and oleic acid (Omale *et al.*, 2011). Linoleic acid is one of the omega 6 fatty acid which is essential for human health. Oleic acid, also found in olive oil, is thought to help in lowering the blood pressure.



Two of the antioxidants identified in its seeds are α -tocopherol and β -tocopherol (Paiva *et al.*, 1999). Both are organic forms of vitamin E. Vitamin E has numerous health benefits including healthy skin, heart, muscles, nerves, and red blood cells. Vitamin E also helps to neutralize the damaging free radicals that can cause chronic diseases such as cardiovascular disease and cancer. It flushes out the carcinogenic substances from the body (Zheng *et al.*, 2001). The low cholesterol level and oleic acid in the fruit improve our overall cardiovascular health (Aliero *et al.*, 2012; Usman *et al.*, 2015). There is also some evidence to suggest that vitamin E could help to reduce the risk of Alzheimer's and Parkinson's diseases (Rabe *et al.*, 1997). The yellowish-green



colored pigments are located at the seeds. Its pulp contains the carotenoid, beta carotene, popularly known as vitamin A. A diet rich in fruits and vegetables that contain carotenoids such as beta carotene, lycopene and lutein could also help repair and protect the DNA (Sharma *et al.*, 2011), thereby slowing the ageing process (Wolfe *et al.*, 2008).

The name "Horned Melon" comes from the fruit's unusual appearance, as the outer layer of orange or gold skin is covered in small spikes. The inside of the fruit has a gelatinous appearance like a kiwi, but the inner layer of fruit pulp is a culinary ingredient. It retains the significant amount of water even during the dry season and provides a wide range of essential nutrients (Valente *et al.*, 2011).



The nutritive property of the fruit is beneficial for the growth of hair, as it strengthens the hair follicles (Morton 1987). The organic compounds, along with the antioxidants work together in preventing blemishes and spots. The citric acid in kiwano is equally beneficial as it adds a glow to our skin.



Chemical Constituents and Health Benefits

In terms of chemical makeup it is similar to other members of the family Cucurbitaceae, very similar to guanabana, because the tartness is very mild. This fruit contains more than 80% water; hence its consumption prevents the risk of gaining weight.

A kiwano contains vitamin A, which plays a vital role in the functioning of retina. The vitamin A additionally fortifies the



strength of the mucosal lining, the very first line of protection from infection within the nasal passages, throat and also intestinal tract. A kiwano offers 1 mg of zinc, or 7 % of the 15 mg required every day (Silva *et al.*, (2010). It is also beneficial for RBCs, skin, muscles, nerves and heart due to presence of vitamins.

Such fruits are lower in calories, loaded with dietary fibers, vitamin A, vitamin C, calcium as well as iron. The nutrient content in this exotic fruit helps our body to get the necessary energy in our journey towards weight loss.

The dietary fiber content in Horned Melon is beneficial for the digestion process. The dietary fiber aids in improving our digestion process and maintains a healthy digestive system. The fibers act to regulate the bowel movements. The gelatinous nature of the fruit prevents constipation, and helps to reduce cramping and bloating. It also aids in treating serious conditions such as gastric ulcers and colon cancer (Yeşilada *et al.*, 1995). All these properties contribute in making kiwano a central ingredient in our diet.



Individuals suffering from chronic anxiety can incorporate kiwano in their daily diets.

The rich amount of magnesium in the exotic fruit is said to have a positive impact on individuals suffering from diabetes. The magnesium helps by regulating the blood sugar level in our body. Kiwano helps in managing the haemoglobin level in our body. The high level of iron is also equally beneficial. The kiwano fruit has a good amount of potassium content, which is extremely beneficial for improving our muscle. Likewise, vitamin D in the fruit helps to improve the calcium absorption process, thereby strengthening our muscles. Kiwano has a high content of beta-carotene antioxidant which helps in improving the immune system and protecting the body from the onset of any diseases (Usman *et al.*, 2014a and 2014b).

Horned Melon/ Kiwano Nutritional Value

100 grams of Horned Melon has 44 kcal (calories) of energy. The other nutrients in the fruit are thiamine (0.025 mgs), riboflavin (0.015 mgs), niacin (0.565 mgs), pantothenic acid (0.183 mgs), vitamin B6 (0.063 mgs), copper (0.020 mgs), manganese (0.039 mgs) and zinc (0.48 mgs). 100 grams of

Vitamin C content in the fruit is responsible for reducing the signs of early ageing. This fruit helps our body in the production of collagen, thereby repairing the damaged organ tissues and skin. The antioxidant, along with the organic compounds and vitamin A reduces the age spots and wrinkles. Kiwano protects our cells from waste products, injuries or toxins that can cause various ageing disorders.

There is a high mineral content in the fruit, such as zinc, calcium etc. which aid in the growth and development of our bones. The calcium storing capacity of the fruit helps in treating and preventing the bone-related issues such as osteoporosis and bone repair. Kiwano has a good amount of zinc, a mineral which is highly beneficial in improving our metabolic processes. The zinc helps by aiding the production of protein, normal carbohydrate metabolic process and the insulin discharge. The mineral also helps in repairing wounds and producing blood cells.

The organic constituent of Horned Melon regulates the stress hormones such as adrenaline in human body.



Horned Melon contains approximately 7.56 grams carbohydrate, 1.26 grams fat, 1.78 grams protein, 88.97 grams water, 3 micrograms folate, 5.3 mgs vitamin C, 13 mgs calcium, 1.13 mgs iron, 40 mgs magnesium, 37 mgs phosphorus, 123 mgs potassium, 2 mgs sodium (Zheng *et al.*, 2001).

CONCLUSION

Kiwano has low cholesterol level, and its seeds are rich in linoleic acid, which has unsaturated omega-6 fatty acids. It also contains oleic acid, which is important for a healthy heart. Horned Melon is loaded with dietary fibers which regulates bowel movements and prevents constipation, bloating, cramping, as well as other serious conditions such as colon cancer and gastric ulcers. Vitamin E is known to slow down the onset of dementia and Alzheimer's disease.

Kiwano is also rich in different tocopherol variants that help in keeping the mind fresh and boost cognitive function. Kiwano has high level of vitamin A which helps to boost eye health. It contains ample amount of vitamin A and vitamin C, antioxidants, and organic compounds. These nutrients help to keep the skin healthy and reduce wrinkles and age spots. This

fruit contains potassium which is essential for normal functioning of bones and muscles. It improves the functioning of cardiac muscles also. Zinc in kiwano also helps in bone development, growth and repair. Calcium also boosts bone strength and prevents the onset of osteoporosis. Zinc plays a key role in wound healing and repair process of organs, tissues, blood vessels and cells. The kiwano regulates the stress hormones including adrenaline and others. The also helps in keeping the mind calm and relaxed hence prevents the body from chronic anxiety or stress.

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