

An Overview of Chow Chow (*Sechium Edule*) - An Underutilized Crop in India- Nutritional Value and Health Benefits

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Introduction:

Chow-chow popularly known as squash or chayote is a very popular vegetable in the region and grows abundantly without much care and attention in high hills of Meghalaya, Manipur, Mizoram, Nagaland and Sikkim (Rai et al., 2006). The chow-chow is a climbing plant member of Cucurbitaceae family and it is an underutilized cucurbit vegetable crop. It was initially grown in Mexico and Guatemala and later introduced to United States, Europe, Africa, China and South-Asian countries (Anonymous 2012). Nowadays, it is grown throughout the world in tropical and subtropical areas. The plant's edible parts are its fruits, tender shoots, young leaves and tuberous roots. Chow-Chow is a fruit but most often used as a vegetable. It is often used in the place of potato. Chow-Chow fruits are bright green and pear-shaped. There are many nutritional and medicinal benefits of chayote owing to the bioactive compounds.

Nutritional value:

Chow-chow vegetables are the important key component of balanced human diet. And it also the main drivers in achieving global worldwide nutritional security by providing high nutrient value and is loaded with essential minerals, fibers, antioxidants and its ample concentration of vitamin C. Fiber is also an important nutrient for a healthy digestive system and keep healthy. This tender vegetable with deep ridges is not only low on calories but also offers ample amounts of potassium, magnesium, manganese, copper, K, B6, B9 or folate, Calcium, Iron.

The fruits and seeds have higher antioxidant activity (Ordenez et al. 2006) and are rich in several important amino acids (aspartic acid, glutamic acid, alanine, arginine, cysteine, phenylalanine, glycine, histidine, isoleucine, leucine, methionine, proline, serine, tyrosine, threonine and valine). The softness of the fruit flesh makes it particularly suitable for giving

consistency to baby foods, juices, sauces and pastes. Chow Chow also contain phytochemical and pharmacological properties. Some researches proved that, chow-chow contain polyphenols including phenolic acids, tannins and stilbenes. Polyphenols are known to have anti-allergic, anti-inflammatory, antiviral, anti-carcinogenic and hypoglycemic effects in the body and health.

Health Benefits of Chayote Squash:



Chayote squash boasts a nutrition profile that is loaded with essential vitamins, minerals, and fiber. It may also support a healthy pregnancy; have anticancer properties and slow visible signs of aging. Chayote is loaded with an array of nutrients and antioxidants compounds that chayote vegetables might have the following potential uses for overall health:

Uses of chayote for Protects Heart:

Rich in phytochemicals, Chayote plays a major role in improving blood flow, thus regulating high blood pressure. The presence of myricetin, an antioxidant not only brings down the levels of cholesterol but also fights against inflammation, thus preventing chronic cardiovascular diseases. Add this vegetable to your daily diet for protecting the health of your most vital organ, the heart.

Improves Liver Function:

A fatty liver is a dangerous condition, and it can happen in non-alcoholics as well. Various studies signal that regular intake of this nutritious vegetable considerably brings down the fatty deposits in liver and also reduces the levels of bad cholesterol of LDL. Regular intake of Chayote triggers metabolic activity improves the liver's ability in processing fats.

Regulates Blood Sugar:

Low on carbs and loaded with dietary fibre, Chayote should be the part of a diabetic's diet plan. Chayote not only makes you feel satiated for longer hours, but presence of fibre prevents the faster absorption of carbohydrates thus regulating blood sugar levels. Studies reveal that the presence of certain chemical compounds in Chayote improves insulin sensitivity, aids in better control of blood sugar levels in those suffering from type 2 diabetes.

Supports Healthy Pregnancy:

Folate is a primary nutrient any pregnant woman would require in ample amounts for delivering a healthy baby. Also referred as Vitamin B9, folate is in fact recommended to every woman trying to get pregnant as it plays a crucial role in the healthy development of fetal brain, spinal cord and proper growth of the baby. Chayote Squash comes with a whopping amount of 40% of daily recommended intake of folate for a pregnant woman. All you need is one Chayote daily to meet most of your folate requirements.

Rich in Antioxidants:

Chayote Squash is loaded with a wide range of antioxidants including quercetin, myricetin, kaempferol, morin which fight against various chronic conditions including diabetes, cancer, and inflammation. Thanks to the impressive presence of Vitamin C, this super vegetable is your must-have for fighting various bacterial and viral infections that are quite common in rainy and winter seasons.

Prevents Cancer:

Chayote, being rich in antioxidants fights against free radicals thus slowing down the progression of cancer cells, especially in those suffering from leukaemia and cervical cancer. The presence of flavonoids in Chayote, not only have anti-cancer activity but restrict the growth of cancer cells and prevent metastasis. These compounds reportedly eliminate oxidant molecules which are responsible for the faster growth of tumours and for these reasons, it is strongly recommended in to the diet chart of the cancer patients.

Slows Down Aging:

This super vegetable can effectively reduce oxidative stress, which may have a negative impact on the body cells, thus making skin look dull and pale. Eating Chayote brings down the signs of metabolic syndrome, thus protecting the body from cell damage, making the skin glow from within.

**Good For the Gut:**

A great digestive function means a healthy you and it is responsible for optimum absorption of nutrients. Eating Chayote boosts digestive health, ensures regular detoxification. An ample presence of flavonoids, plant compounds in Chayote prevent constipation, regulate bowel movement, maintain the growth of healthy gut bacteria thus optimizing various functions of digestive tract.

Aids in Weight Loss:

Chayote is your must-have vegetable if you are on a strict diet regimen, hoping to shed those extra kilos. Quite low on calories, it is extremely beneficial for weight watchers and those practicing calorie deficit diet plans. Being rich in dietary fibre it helps in resisting mid-day hunger pangs and in suppressing appetite.

Triggers Cognitive Function:

Being rich in antioxidants, flavonoids and other plant compounds Chayote is extremely beneficial in those suffering from cognitive decline. Various studies prove that this vegetable is very effective in bringing down the durations between the episodes of convulsions, improves mood disorders, and prevents depression. It is also widely recommended for improving motor coordination in those suffering from Parkinson's disease and Alzheimer's.

Conclusion:

Chayote or chow chow contains high levels of various health-enhancing substances with potential applications in food, cosmetic and pharmaceutical industries. However, limited attention has been given to underutilized or neglected crops, chayote by-products are an excellent source of bioactive compounds and its use could become an important aspect in waste management from both economic and environmental standpoints.

References:

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