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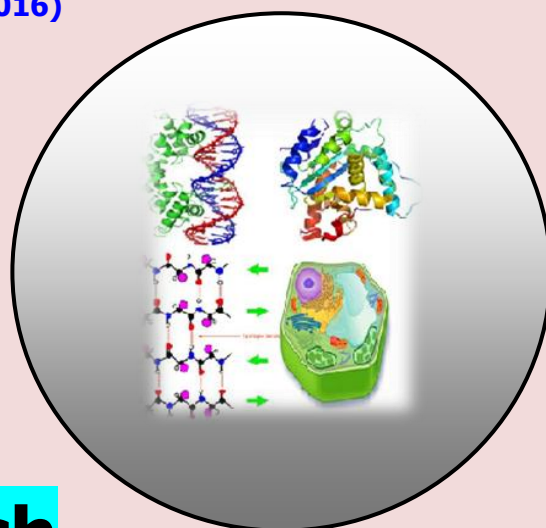
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Amazing Health Benefits and Medicinal Uses of *Physalis peruviana* (Rasbhari/Cape gooseberry)

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ABSTRACT

*It is a berry like fruit used for many purposes. Due to its sharp tasting nature, it is used in making of various recipes such as snacks, pies, puddings, ice-cream, sauces, jams, salads, fruits salads, desserts, etc. The nutritional value of 100 grams of Cape gooseberry is as follow: Energy (53kcal), carbohydrates (11.2g), fat (0.7g), protein (1.9g), vitamin A (36 µg), vitamin B1(0.11 mg), vitamin B2 (0.04mg), vitamin B3 (2.8mg), vitamin C(11mg), Ca(9g), Fe (1mg), P(40mg), etc. The African ground berry has appropriate percentage of polyphenols and carotenoids, which are beneficial against lung cancer cure as shown by recent research studies. In folk culture, *Physalis peruviana* is being prescribed against cancer and leukemia. It is still prevalent in the folk medicine of Kerala, India. *Physalis peruviana* has the power to control the movement of free radicals thus helps in prevention of many diseases including neurological related disorders.*

In this review paper, therapeutic value and culinary uses of raspberry are precisely delineated.

Keywords: Immunity, Muscular degeneration, Antioxidant, Minerals and Rheumatism Dermatitis.

INTRODUCTION

Bright red, elegant black or golden yellow, raspberries are fruits with an irresistible texture and juicy flesh that is enough to send your cravings skyrocketing! A single bite into one of these tiny fruits is sure to leave you wanting for more. Technically, one raspberry is a compilation of smaller seed containing fruits, making it a collection or an aggregate fruit. With popular varieties like Amity, Latham, Meeker, Willamette, Fall Gold, Brandywine and Black Hawk, raspberries are not only eaten in their fruit form, but they are also used frequently in shakes, fruit salads, jams and jellies. One of major role of this fruit is to provide the body with antioxidants necessary to carry on daily functions.

Archeological evidences take raspberries back to the Paleolithic period when humans hunted for their sustenance. There is proof that these fruits were eaten by cave dwellers belonging that era. Although, it is believed that the Greeks discovered them in the 1st century BC, they were not the first to consume them. It was only in the 4th century AD that raspberries began to be cultivated by the Romans (as documented by Palladius). From here, it spread to different parts to Europe. However, the development, hybridization and improvement of raspberries throughout the Middle Ages were credited to the British, who eventually exported them to the United States in the late 18th century. The black raspberry, being native to North America, was not cultivated until the 1800s because the red ones exported by England were considered more desirable. Currently, Russia, Poland, Yugoslavia, Germany, Chile and the United States are amongst the leading producers of raspberries (Ramadan and Mörsel (2003).

Physalis is actually a soft-wooded, perennial some what vining plant (figure 1) sized two to three ft. (1.6-0.9 m) tall but occasionally may reach 6 ft. (1.8) m. It is found growing in sunny, frost-free location, sheltered from strong winds. It prefers well drained soil but does best on sandy to gravelly loam. Good crops can also be obtained on somewhat poor sandy ground. *Physalis* have ribbed, normally purplish, spreading branch covered with fine hairs. Leaves are nearly opposite, heart-shaped, velvety, randomly-toothed, pointed, leaves 2 3/8 to 6 in (6-15 cm) long and 1 1/2 to 4 in (4-10 cm) wide. Flowers are bell-shaped, flowers form in the leaf axils. It is yellow colored along with dark purple-brown spots within the throat, and cupped by purplish-green, hairy calyx and are found blooming from June to August.

The fruit is named as Cape gooseberry because it is first cultivated in Cape of Good Hope in South Africa. It is known by different names in different countries of the world (Botanical name: *Physalis peruviana*; Cape gooseberry: South Africa, Pokpok: Madagascar, Poha: Hawaii, Rasbhari: India, Aguaymanto: Peru, Uvilla: Ecuador, Uva: Colombia, Harankash: Egypt, Amour en cage: France, *Physalis*: UK).). It is known as Inca berry, Golden berry, African ground berry, Peruvian ground cherry, Peruvian cherry, Inca berry, Uchuva, Chinese lantern, Aztec berry, golden berry, giant ground cherry, etc. It is a berry like fruit used for many purposes (Wu et al., 2006).

CULINARY BENEFITS

Due to its sharp tasting nature, it is used in making of various recipes such as snacks, pies, puddings, ice-cream, sauces, jams, salads, fruits salads, desserts, etc. In making of salads, it is used with apple and honey. Generally, it is eaten raw but it can be taken as raisins or it may be the ingredients of jellies, yogurt, oats, cake, etc. The fruit is also used in cocktails. Rasbhari is also popular in making of various sweet dishes. Fruits can be consumed raw in fruit cocktails, fruit salads, in cooked dishes or even canned whole in syrup or processed into jams. Fruits are stewed along with honey and consumed as dessert in Colombia. The fruit can also dries into tasty "raisins". British use the husk as a handle for dipping the fruit in icing. Fruits are also an attractive sweet whenever dipped in chocolate or other coatings or pricked and rolled in sugar.

NUTRITIONAL FACTS AND THERAPEUTIC APPLICATIONS OF RASBHARI

The nutritional value of 100 grams of Cape gooseberry is as follow: Energy (53kcal), carbohydrates (11.2g), fat (0.7g), protein (1.9g), vitamin A (36 µg), vitamin B1(0.11 mg), vitamin B2 (0.04mg), vitamin B3 (2.8mg), vitamin C(11mg), calcium (9mg), Iron (1mg), Phosphorous (40mg), etc. The fruit is rich in pectin and has adequate amount of polyphenols, withanolides, melatonin and carotenoids.: The nutritional value of 100 grams of Cape gooseberry is as follow: Energy (53kcal), carbohydrates (11.2g), fat (0.7g), protein (1.9g), vitamin A (36 µg), vitamin B1(0.11 mg), vitamin B2 (0.04mg), vitamin B3 (2.8mg), vitamin C(11mg), calcium (9mg), Iron (1mg), Phosphorous (40mg), etc.

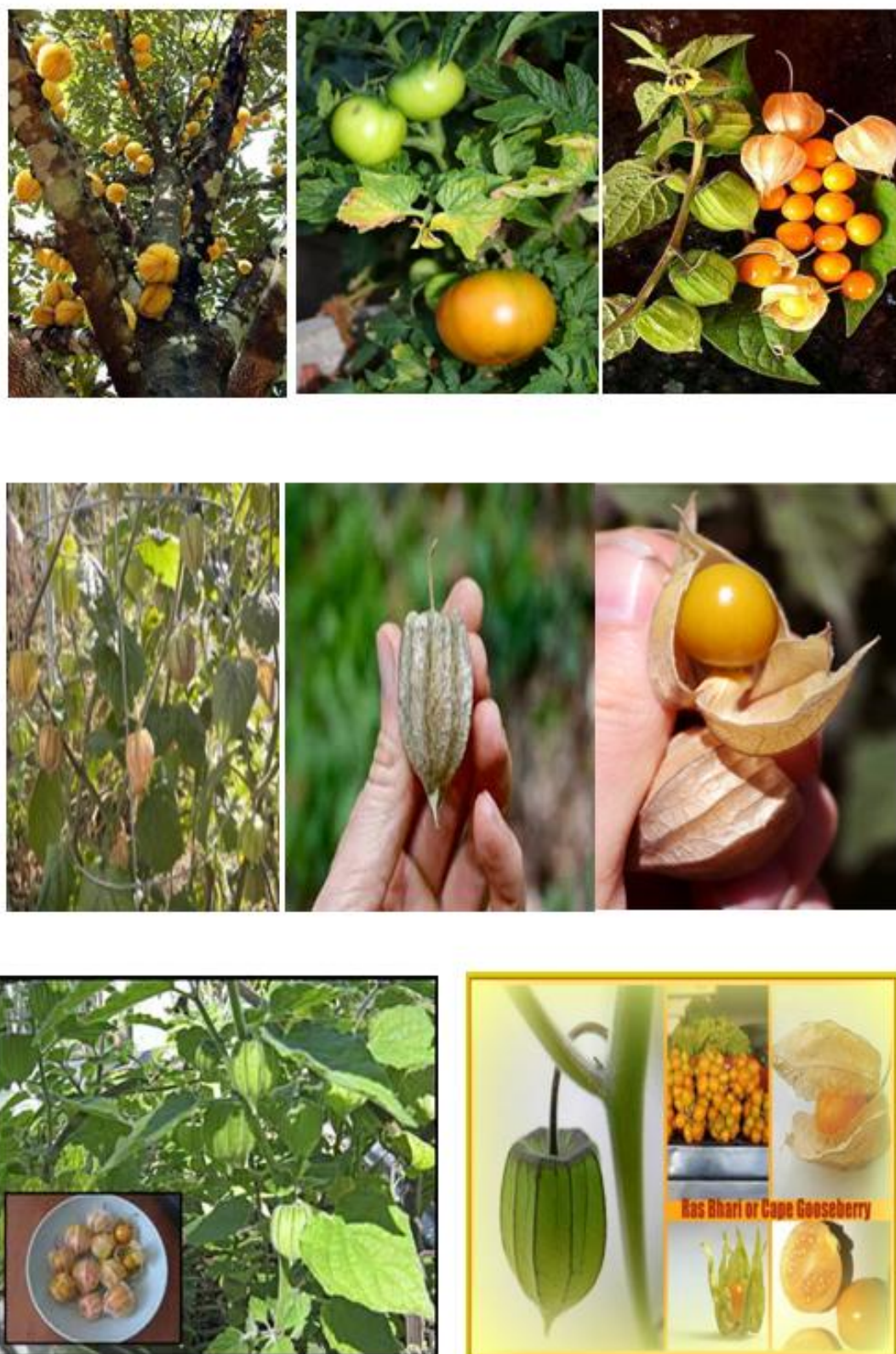


Figure 1. *Physalis peruviana* Plant with Fruits.

The African ground berry has appropriate percentage of polyphenols and carotenoids, which are beneficial against lung cancer cure as shown by recent research studies (Bravo et al., 2015). The anti-hepatoma properties of the fruit are also being related to treat cancer. In folk culture, *Physalis peruviana* is being prescribed against cancer and leukemia. It is still prevalent in the folk medicine of Kerala, India. *Physalis peruviana* has the power to control the movement of free radicals thus helps in prevention of many diseases including neurological related disorders. Rasbhari is rich in vitamin A and provides 14% of daily requirements of vitamin A. Vitamin A is good for eyes, prevent cataracts, and protect muscular degeneration. The golden berry has a good proportion of pectin, which helps in calcium as well as phosphorous absorption thus good for making the bones stronger. It is also used in treating of rheumatism and dermatitis. The fruit contains vitamin C and fulfils the 18% of daily requirements. Having an profuse amount of vitamin C, it helps in enhancing immunity of the body. In a research, it has been confirmed that rasbhari regulates the level of cholesterol and good for the health of the liver. The juice of the fruit contains some important phyto-chemicals that are good for smooth functioning of the heart (Liefing et al., 2008).

RESEARCH REALM

Physalis is a widely used for dealing with hepatitis, malaria, rheumatism, cancer, dermatitis and asthma. In this study, the hot water extract and extracts prepared from different concentrations of ethanol from the whole plant were evaluated for antioxidant activities. The research concludes that ethanol extracts of *Physalis* consists of good antioxidant activities, and the highest antioxidant properties were obtained. The chemical composition of the plant root suggested the presence of alkaloids, withanolides and flavonoids. The results suggested safe administration, and improvement of fibrosis disease. Research result concludes that the *Physalis* succeeded in protecting the liver and kidney against fibrosis. Iron can be found on both vegetarian and non-vegetarian foods i.e. heme or non-heme iron. Legumes, whole grains, green leafy vegetables, and dry fruits have good iron content which is extremely essential for pregnant Women. A pregnant woman requires around 27 mg of iron daily. Iron contained in *Physalis* can provide you a supportable boost of iron all through your day. Daily consumption of *physalis* satisfies the daily necessity of Iron and exerts an overall protective effect on the body.

Since niacin plays a role in increasing blood flow to particular parts, it may also help relieve arthritis pain by boosting blood flow towards painful areas. It helps improve joint flexibility and decrease pain. Consume niacin rich foods for this effect, but do not take higher dosages of the vitamin unless suggested by your doctor. *Physalis* is the best source of Vitamin B3 (Niacin). So including *physalis* in your regular diet will certainly help you get relief from Arthritis Pain. A single cup serving of *Physalis* (140 g) has 24.50% of the daily required intake. There are various antioxidant effects of *Physalis*, some of which are derived from the huge amount of vitamin C, also help to eliminate plaque build-up in the cognitive pathways, often caused by free radicals and oxidative stress. *Physalis* has been related to avoiding certain cognitive disorders, such as Alzheimer's disease and dementia. *Physalis* contains 15.4 mg vitamin C which is 17.11% of daily recommended value. It can also boost cognitive ability in younger folks, increasing memory, focus, and concentration skills.

Physalis is loaded with Vitamin B1 (Thiamin). This vitamin is liable for the production of acetylcholine, a neurotransmitter which transmits messages towards the muscles and nerves. An insufficiency of vitamin B1 results in a decrease in the neurotransmitter and causes irregular heartbeat. Severe deficiency may cause congestive heart failure. Better eyesight plays an important role in our Life. Better eyesight is possible if we consume Vitamin A rich foods like *Physalis*, carrots on a regular basis. Deficiency of vitamin A may result in trouble seeing in dim light. Since *Physalis* is rich in vitamin A, it is good for improving eyesight and avoiding conditions like night blindness from developing as we grow old.

OTHER TRADITIONAL USES AND BENEFITS

It is used in folk medicine as antipyretic, anticancer, antipruritic, anti-mycobacterial, immune modulatory and anti-inflammatory and diuretic, also for handling diseases like dermatitis, malaria, rheumatism asthma, leukemia, and hepatitis.

Physalis is a common medicinal herb used by Muthuvan tribes living in the Shola forest regions against jaundice in Kerala, India.

Leaf decoction is taken as a diuretic and antiasthmatic in Colombia.

Heated leaves are usually applied as poultices on inflammations in South Africa.

To relieve abdominal disorders in children, Zulus administer the leaf infusion as an enema¹⁰.

CONCLUSION

Physalis is a berry fruit with many health benefits. The nutritional value of *physalis* is remarkable as this nutritious fruit is known for its many benefits and positive effects. The main *physalis* benefits are: encourages bowel movement and relieves constipation. Raspberries have shown to suppress the growth of cancerous formations. According to studies, phenolic flavonoid phytonutrients such as anthocyanins, ellagic acid, quercetin, gallic acid, cyanidins, kaempferol and salicylic acid provide protection against tumours, inflammation, ageing and neurological diseases. The fruits are rich in antioxidant vitamins such as A, C and E that are proven to be beneficial for the overall health. Vitamin C, in particular, is known to enhance immunity of the body against infectious agents and reduce cardiovascular damage by neutralizing free radicals. Raspberries are rich in flavonoid polyphenolic antioxidants such as lutein, zeaxanthin and beta carotene, which fight against the oxygen-derived free radicals and reactive oxygen species (ROS) that are known to cause various diseases and ageing. Another health benefit of raspberries comes from the fact that it provides protection against age-related macular degeneration and increases the body's resistance towards cataracts and glaucoma. Raspberries are rich in compounds such as Mg, Cu, Fe and that increase red blood cells in the body and decrease anemia. Moreover, they have very low levels of sodium, known to increase the blood pressure, and high levels of potassium, known to lower blood pressure and keep it under control without causing major fluctuations. Compounds such as the vitamin B complex group, vitamin K, niacin, riboflavin and folic acid improves the metabolism of carbohydrates, proteins and fats. Moreover, these fruits are rich in dietary fiber and low in calories and saturated fat. Raspberries are considered excellent for diabetics as they contain a low calorie sugar substitute called Xylitol. This is an equivalent to 9.6 calories as compared to 1 teaspoon of sugar with 15 calories in it.

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