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SOURSOP: THE NATURAL ANTICANCER FRUIT

SHITAL PATEL, AARTI PATEL, KRUPA PATEL, PROF. DR. DHRUBO JYOTI SEN

Department of Pharmaceutical Chemistry, Shri Sarvajani Pharmacy College, Gujarat Technological University, Arvind Baug, Mehsana-384001,
Gujarat, India

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Abstract: There has been a frenzy of stories going round the web about the fruit-Soursop. We will try to uncover the truth about it. Who knows soursop could turn out to be of revolutionary fruit. Soursop is the fruit of graviola which is a flowering evergreen tree native to tropical regions of the world. It is a long, prickly green fruit which along with the soursop leaves has shown explicit cancer killing properties and range of other health benefits. Soursop (**Scientific Name:-*Annona muricata***) belongs to the Annonaceae family. Plants of this family contain annonacin acetogenins which have tremendous medicinal properties. Various parts of the soursop free have been used for centuries by medicine man and native Indians in South America to treat heart disease, asthma, liver problems and arthritis.

Keywords: *Annona muricata*, Soursop, Neurotoxin



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Corresponding Author: PROF. DR. DHRUBO JYOTI SEN

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INTRODUCTION

In 1976, the national cancer institute studied soursop and found that it is very effective in attacking and destroying malignant cells. A story has been going around since the pharmaceutical company of United States tried for nearly seven years to synthesize two the tree's most powerful anti-cancerous chemicals. As they couldn't patent the natural extract either, which meant there was no way of making substantial profit from it, they decided to bury the research done by them.^[1]



Figure-1: Soursop fruit

This story later came out and it was out that many individual institutions had been conducting research on cancer curing abilities of graviola and the result confirmed the finding of the drug company. Soursop had tremendous potential in attacking and killing cancer cells, without harming the healthy cells.

What is Soursop?

The fruit of the soursop tree has a spiny outer skin with a soft, heavily seed-laden pulped interior. Each of these cauliflorous fruit may attain over a foot in length and, when ripe, the soft pulp is used in ice creams and sherbets. In fact, this small evergreen tree produces the largest fruit in the Annonaceae family. Reportedly, the fruit may weight up to 15 pounds (Guinness Book of World Records lists the largest as 8.14 pounds) and is often a lopsided heart shape.^[2]



Figure-2: Soursop fruit on a tree

The white segments of the soursop fruit are primarily seedless, although a few seeds are present. The seeds and bark are toxic and contain poisonous alkaloids such as anonaine, muricine, and hydrocyanic acid.

Native

Neotropic:

Caribbean:- Cuba, Jamaica, Trinidad and Tobago, Dominican, Republic, Haiti, Puerto Rico, Barbados

North America:- Mexico

Central America:- Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Belize

South America:- Bolivia, Brazil, Peru, Colombia, Venezuela, Ecuador

Africa:- Republic of Congo, Ghana, Somalia, Liberia, Nigeria

Nutrional value per 100 g (3.5 oz)

Nutritional value per 100 g (3.5 oz)			
Energy 276 kJ (66 kcal)		Vitamins	
Carbohydrates	16.84 g	Folate (B ₉)	(4%), 14 µg
Sugars	13.54 g	Choline	(2%), 7.6 mg
Dietary fibers	3.3 g	Vitamin C	(25%), 20.6 mg
Fat	0.3 g	Minerals	
Protein	1 g	Calcium	(1%), 14 mg
Vitamins		Iron	(5%), 0.6 mg
Thiamine (B ₁)	(6%), 0.07 mg	Magnesium	(6%), 21 mg
Riboflavin (B ₂)	(4%), 0.05 mg	Phosphorus	(4%), 27 mg
Niacin (B ₃)	(6%), 0.9 mg	Potassium	(6%), 278 mg
Pantothenic acid (B ₅)	(5%), 0.253 mg	Sodium	(1%), 14 mg
Vitamin B ₆	(5%), 0.059 mg	Zinc	(1%), 0.1 mg

Table-1: Nutrition values^[3]

Units: µg=micrograms, mg=milligrams; Link to USDA Database entry

Cultivation

Annona muricata is a small, upright, euergreen tree that can grow to about 4 meters (13 ft) tall. Its young branches are hairy. Leaves are oblong to oval, 8 cm (3.1 in) to 16 cm (6.3 in) long and 3 cm (1.2 in) to 7 cm (2.8 in) wide. The leaf stalks are 4 millimeters (0.16 in) to 13 millimeters

(0.21 in) long and without hairs, prickly, green fruit, which can have a weight up to 6.8 kg (15 pound). It probably the second biggest after the junglesop.



Figure-3: Fruit of *Annona muricata*

Leaf of *Annona muricata*

The soursop is adapted to areas of high humidity and relatively warm winters; Temperatures below 5°C (41°F) will cause damage to leaves and small branches, and temperatures below 3°C (37°F) can be fatal. This fruit becomes dry and is no longer good for concentrate, if protected for cool temperatures.^[4]

Neurotoxicity

The compound annonacin, which is contained in the seeds of soursop is a neurotoxin associated with neurodegenerative disease and research has suggested a connection between consumption of soursop and typical forms of Parkinson's disease due to high concentrations of annonacin. Average fruit contains 15 mg of annonacin. In 2010 the French food safety agency concluded that based on the research findings, "it is not possible to confirm that the observed cases of atypical Parkinson syndrome are consumption of *Annona muricata*" for study on potential risks to human health.^[5]

Properties

Annonacin is a neurotoxin found in soursop seeds.

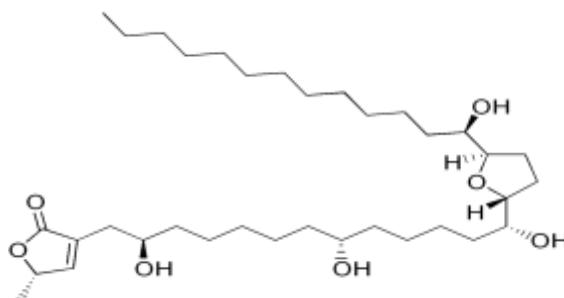


Figure-4: Annonacin

The fruit contains significant amounts of vitamin C, vitamin B₁ and vitamin B₂

Care of Soursop Tree

Soursop tree care involves copious mulching, which benefits the shallow root system. Overly high temps from 80-90 F. (27-32 C.) and low relative humidity cause pollination issues while slightly lower temps and 80 percent relative humidity improve pollination. Fertilize every quarter of the year with a 10-10-10 NPK at ½ pound per year for the first year, 1 pound the second, and 3 pounds for every year thereafter. Very little pruning is required once the initial shaping is attained. You should only need to prune out dead or diseased limbs, which should be done once harvest is over. Topping the trees at 6 feet will facilitate harvesting.

Harvesting of Soursop Fruit

When harvesting soursop, the fruit will change from dark green to a lighter yellowish green tone. The spines of the fruit will soften and the fruit will swell. Soursop fruit will take between four to five days to ripen once picked. Trees will produce at least two dozen fruit per year.^[6]

Can Soursop Fruit Kill Cancer?

The Soursop is a flowering, evergreen tree native to tropical regions of the world. It also contains a long, prickly green fruit which may be effective against some forms of cancer. *Annona muricata* is an active principle in an herbal remedy marketed under the brand name Triamazon.

Soursop Health Benefits

Prevent UTI:- Soursop is good at preventing UTI, since it has an excellent source of vitamin C, a nutrient which helps to increase the acidity level of urine and reduces harmful bacteria present in the urinary tract.

Helps to cure many diseases:- Soursop fruit juice, taken twice daily, can help overcome kidney disease, liver problems, urinary tract infection; also known as urethritis and hematuria (blood in the urine).

Cures Cancer:- help to attack the cancer cells safely and naturally, without side effects such as nausea, weight loss, or hair loss. It also kills malignant cancer cells-Soursop leaf has an effective target of 12 types of cancer, including colon, breast, prostate, lung and pancreatic cancer. Power works 10,000 times stronger in slowing the growth of cancer cells compared with adriamycin and chemo therapy which were commonly used.

Improve Immune System:- substances contained soursop fruit makes our body stay fit and helps to prevent against diseases. **Prevents water retention** (Magnesium), **Prevents constipation** (Fiber), **Prevents leg cramps** (Potassium), **Helps the body produce energy** (Thiamin), **Prevents Osteoporosis & Keeps bones healthy** (Copper), **Boosts good cholesterol levels** (Niacin), **Helps prevent anemia** (Iron), **Helps prevent migraines** (Riboflavin), **Medicine for hemorrhoids and pain reliever, Prevent nerve damage and maintain a healthy heart.**^[7]

Conclusion: *Annona muricata* fruit offers significant greater medicinal benefits as compared to other fruits. Apart from its various medicinal properties, acetogenins in *Annona muricata* show potent "anticarcinogenic" activity which selectively attack cancerous cells without harming healthy cells. It thus appears to meet the popular definition of a miracle fruit. The Soursop is usually processed into ice creams, sherbets and drinks, but fiber-free varieties are often eaten raw. The large, elongated, somewhat ovaloid fruit, can be up to 12" long and 6" wide and usually weighs several pounds. The fruit is covered in small knobby spines that easily break off when the fruit is ripe. The thin, inedible, leathery green skin cuts easily to yield the large mass of cream colored, fragrant, juicy, and somewhat fibrous, edible flesh. A typical soursop contains anywhere from 30-200 black-brown seeds, each about 1/2" long and 1/4" wide and enclosed in a separate "pocket" of flesh. There are known seedless varieties, but they are rare, and tend to have fibrous flesh. Soursop's are processed into excellent ice creams, sherbets and beverages throughout much of Central and South America. Sweet varieties of the fruit can be eaten raw, and are often used for dessert. Today, Soursop ice cream, marketed under its Spanish name "Guanabana," can be found in some gourmet supermarkets. Preserved soursop in syrup can also be found in many ethnic markets. The canned pulp can be pureed or blended in the home, and easily transformed into a delicious desert, although fresh pulp is more desirable. Immature soursops are often cooked, and eaten as a vegetable. The leaves and roots of the tree have various medicinal properties. Soursops are high in vitamins B₁, B₂ and C.

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