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By

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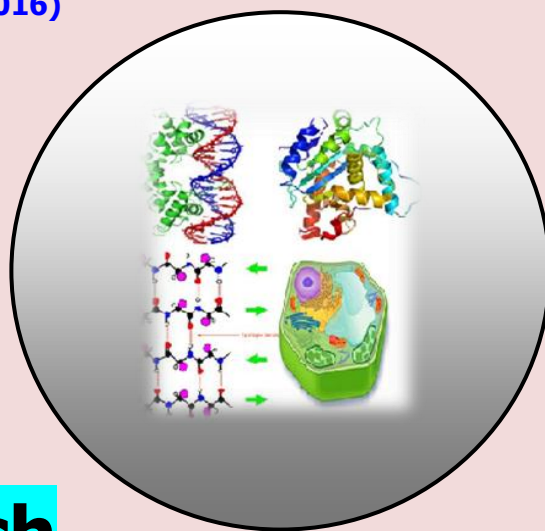
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## **Eclectic Bael (*Aegle marmelos*) and its Multifaceted Therapeutic Benefits**

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### **ABSTRACT**

*Aegle Marmelos* is generally known as Bael, Bengal quince, wood apple, golden apple, stone apple, bili. This is a tree species native to India and present throughout Southeast Asia. Hindus consider this tree as sacred and its fruits are used for medicine and as food. The Bael's fruits and leaves contain an evaporating oil, which is considered very good for human body. The leaves tend to absorb harmful or foul gases from the atmosphere and keep it clean and healthy. The raw Bael fruit produces heat and has purgative effect. It is consumed for the treatment of arthritis and gout. On the other hand, ripe fruit has cooling effect and can cause constipation. It is usually consumed in summer to cool body. Bael is known for its medicinal values because of the presence of many bio-chemical substance such as alkaloids, antioxidants, polysaccharides and essential oils. The fleshy inner product of bael is curative, pesticidal, nutritive as well as therapeutic in nature, which is used for the treatment of many diseases and disorders. Wood apple leaves are of therapeutic value and used in lowering of blood cholesterol. It is anti-inflammatory in nature. Its extracts when applied on the exposed area, help to cure inflammation. Bael's roots are antidiarrhoeic, antidote to snake venom and anti-inflammatory for healing.

**Keywords:** Alkaloids, Inflammation, Antioxidants, Beta carotene, Cholesterol, Antidote and Marmelosin.

## INTRODUCTION

Bael or *Aegle marmelos* is a spiritual, religious and medicinal plant, native of India and Bangladesh and spread throughout South East Asia. The fruit takes about 10 to 11 months to ripen. Wood Apple is a sweet, aromatic and astringent in nature. Bael has many benefits and uses such as to cure tuberculosis, hepatitis, dysentery, constipation, peptic ulcer, piles and many more, useful in worm infestation and stomach related problems. Bael or *Aegle marmelos* is also known as Bengal quince, golden apple, Japanese bitter orange, stone apple, etc. (Arghya et al., 2002).

Bael, also known as the “Wood Apple”, is a species native to India. The bael tree is considered to be sacred to the Hindus. A famous drink known as *sherbet* is made from the bael fruit and it has been known for its medicinal values since 2000 BC. Here in this post you will know about various benefits of bael fruit. The local names of bael fruit are ‘Kaitha’ in Hindi, ‘Maredu Pandu’ in Telugu, ‘Vilam Palam’ in Tamil, ‘Baelada Hannu’ in Kannada, ‘Koovalam’ in Malayalam, ‘Kothu’ in Gujarati, ‘Kavath’ in Marathi and ‘Koth Bael’ in Bengali.



**Figure 1. Bael Tree and Fruits.**

The presence of tannin in the bael fruit helps in curing diseases like diarrhoea and cholera. The dried powder of the fruit is used to treat chronic diarrhoea. The extract of unripe bael fruit can effectively treat haemorrhoids and vitiligo. It is also used to treat anaemia, ear and eye disorders. In ancient days, the dried powder of raw bael mixed with turmeric and ghee was applied on fractured bones to treat fracture. Bael fruit is said to be the best natural medicine to cure constipation (Figure 1).

Adding small amount of black pepper and salt to the pulp and consuming it regularly removes toxins from the intestines. It can also be taken in the form of sherbet to cure constipation. Bael is rich in laxatives which makes it useful in controlling the blood sugar levels. This is because it energizes the pancreas and makes it produce enough amount of insulin which is necessary to control sugar level in the blood. (Surat, 2011)

Bael has certain phenolic compounds containing anti-oxidants that help in fighting gastric ulcers, particularly, gastroduodenal ulcers. This type of ulcer is caused due to the imbalance in the acidic level in the stomach. Researchers have proved that the extract of bael fruit has antimicrobial functions. It also has anti viral and anti fungal properties that help in treating various infections in the body. Scurvy disease is caused due to the deficiency of vitamin C and these effects the blood vessels. Bael being a rich source of vitamins is capable of curing this disease when added to the diet. The extract of bael leaf can be used to control the cholesterol level in blood which makes the bael leaves highly therapeutic too. The oil extracts from bael can be used to cure respiratory disorders like asthma or cold. This oil can also provide resistance to cold when applied on the scalp before a head bath. Inflammation can be quickly cured when the extract of bael is applied on the inflamed region. The juice of ripe bael fruit when mixed with ghee and added to daily diet prevents heart diseases. This is a traditional method which has been used for ages to treat diseases like heart strokes and attacks. (Riyanto et al, 2001). Bael contains following Biochemical constituents which having great therapeutiv value listed in given chemical struwctures (figure 2.)

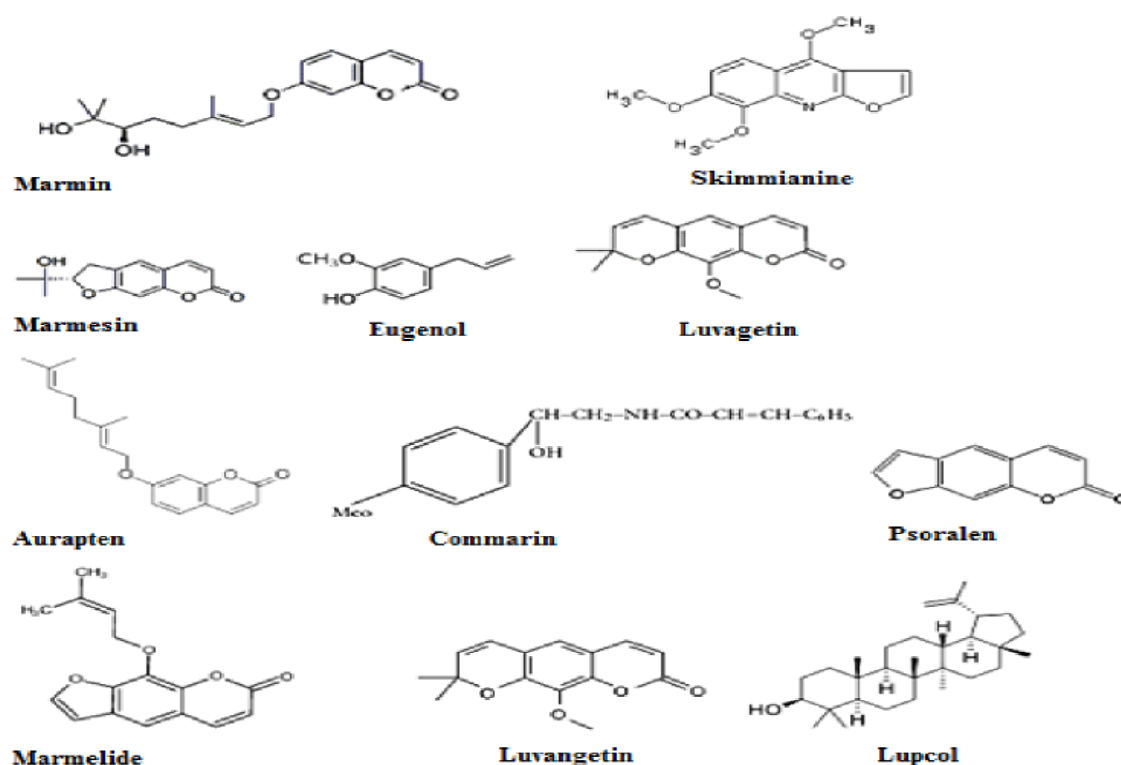


Figure 2. Biochemical Constituents of Bael Juice.



- ✧ Bael (*Aegle marmelos*) is an indigenous fruit tree of India.
- ✧ The deciduous tree with trifoliate aromatic leaves is traditionally used as sacred offering to 'Lord Shiva'.
- ✧ It is commonly planted in temple garden.
- ✧ As wild Bael is found in Uttar Pradesh, Bihar, West Bengal and Madhya Pradesh.
- ✧ Fruit is hard shelled berry and very well known for its medicinal properties due to marmelosin content.
- ✧ The ripe fruit is tonic, restorative, laxative and good for heart and brain.

### BAEL NUTRITIONAL FACTS

It is rich in alkaloids, polysaccharides, antioxidants, beta carotene, vitamin C, Vitamin B, and many other bio-chemical substances. It also contains tannins, calcium, phosphorous, iron, protein and fiber. The 100 gram of Bael contains the following nutrients: Calorific value (137 Kcal), Moisture (61.5g), Protein (1.8g), Fat (.3g), Minerals (1.7g), Fiber (2.9g), Carb (31.8mg), Calcium (85mg), Phosphorous (50mg), Iron (.7mg), Beta carotene (55 UG), Thiamine (.13mg), Niacin (1.1mg), Vitamin C (8 mg), Potassium (600mg) and Copper (.21 mg). (Lanjhiyana et. al., 2011).

### HEALTH BENEFITS OF BAE

In Ayurveda, it is used for the treatment of tuberculosis. The regular consumption of Bael helps to prevent gynecological related issues. Use of Bael leads you to overcome the problems of urinary diseases. It has bitter pungent, full of antioxidants and helps to stimulate the pancreas to secrete insulin, which leads to lowering of blood sugar. The leaves can be used against diabetes. It supports intestinal biological formulations and protects the digestive system from ulceration, reduces the frequency of Irritable Bowel Syndrome (IBS), intestinal spasm thus beneficial in treating of diarrhea, dysentery, and other infections of Elementary canal.

The leaf juice with honey is helpful in prevention of fever and is used as epilepsy tonic. The extract of unripe Bael fruit is helpful in curing of piles and hemorrhoids. Acidity level in the stomach thus useful in combating ulcers like gastric ulcers, gastroduodenal ulcers, etc. (Govindachari et.al., 1983)

### BAEL JUICE

Its juice is used to make drink and squashes, especially in summer season because of its sweet and pleasant nature. Bael tender leaves are used as salads. It cleans the atmosphere as it helps to purify the atmosphere by absorbing the harmful gases from it. It is used to increase appetite (Figure 3).

Its extract oil is used to cure respiratory problems. It is used in the preparation of candy, squash, toffee, pulp powder, and other eatable products. Bael juice is useful in curing of constipation because of its laxative properties. Bael juice gives great comfort in heartburn, acidity, hyperacidity and indigestion. If you are suffering from intestinal parasites, it is advisable to drink bael juice because of its antidote nature. Aegle marmelos juice is good for heart and brain. Bael juice mixed with Ghee, is beneficial in prevention of heart disease. It is also used as heart tonic. Chewing of raw leaves of Bael help to solve many gastric problems. Bael juice is rich in vitamin C, and good for scurvy treatment. (Sharma et al., 1981).

It is also known by various names such as Wood apple, Kaitha, Maredu Pandu, Vilam Palam, Baelada Hannu, Koovalam, Kothu, Koth Bael, etc. (Roytman. Et al., 2014). It's one of the few Ayurvedic plants whose entire parts from root to leaves are used for different diseases. The fruit balances Kaph and Vata doshas, its roots improve digestion, leaves are good for pain, stem for heart and Bael flower's for curing of diarrhea. Bael juice is useful in curing of constipation because of its laxative properties. (Bakhru, 1995) Bael juice gives great comfort in heartburn, acidity, hyperacidity and indigestion.



**Figure 3. Bael Fruit and Juice.**

If you are suffering from intestinal parasites, it is advisable to drink bael juice because of its antidote nature. *Aegle marmelos* juice is good for heart and brain. Bael juice mixed with Ghee, is beneficial in prevention of heart disease. It is also used as heart tonic. Chewing of raw leaves of Bael help to solve many gastric problems. Bael juice is rich in vitamin C, and good for scurvy treatment. Its juice is used to make drink and squashes, especially in summer season because of its sweet and pleasant nature. Bael tender leaves are used as salads. It cleans the atmosphere as it helps to purify the atmosphere by absorbing the harmful gases from it. It is used to increase appetite. Its extract oil is used to cure respiratory problems. It is used in the preparation of candy, squash, toffee, pulp powder, and other eatable products. (Panda, 2002).

## CONCLUSION

Bael has great religious significance. In Hindu tradition, the leaves and the fruit of the plant are offered to god during prayer, especially god Shiva. Its leaves are also used to worship Parvati and Viva Rupra. The fruit is used in religious ceremonies and rituals and its mentioned is also seen in Vedas and Mahabharata. Bael fruit helps to cure diabetes. The gum from seeds is used as household glue and adhesive by jewelers.

The wood of this tree is used for preparing tools, knife handles, pestles, combs, carvings, etc. Bael oil is effective against 21 species of bacteria. Bael leaves are used for treating dyspepsia and sinusitis. The unripe fruit helps in relieving infestations of intestinal worms and rotavirus. The unripe and half ripe fruits help in improving appetite and digestion. The roots and bark of the tree are used for treating fever and malaria. The root, bark and leaves are used in the treatment of snake bites. The essential oil acts as a natural food preservative as it has anti fungal properties. Bael is known for its medicinal values because of the presence of many bio-chemical substances such as alkaloids, antioxidants, polysaccharides and essential oils. The fleshy inner product of bael is curative, pesticidal, nutritive as well as therapeutic in nature, which is used for the treatment of many diseases and disorders. Wood apple leaves are of therapeutic value and used in lowering of blood cholesterol. It is anti-inflammatory in nature. Its extracts when applied on the exposed area, help to cure inflammation. Bael's roots are antidiarrhoetic, antidote to snake venom and anti-inflammatory for healing.

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