

## Bael Fruit: A Traditional Fruit with Benefits

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**A**egle marmelos commonly known as Bael is a plant indigenous to India. In colloquial terms they are known as Bengal quince, Indian quince, holy fruit, golden apple in English, and bael or bilva in Hindi (Baliga *et al.*, 2011). Bael is a slow growing, tough subtropical tree and is the only plant belonging to the genus Aegle. The fruit which are of dietary use is either round, pyriform, oval, or oblong in shape. The tree bears fruit only when there is a long dry season and the peak fruiting season in India is normally during the month of May and June. The flowers are 3cms across, greenish, white and sweet scented. The fruit is nearly spherical and 5 to 15 cm in diameter (Ullikashi *et al.*, 2017) contains phytochemicals like tannins, flavonoids, alkaloids, and essential oils, contributing to its antimicrobial activity. All the parts of this tree including stem, bark, root, leaves and fruit at all stages of maturity have medical properties and have been used in the traditional medicine for a long time (Kaur *et al.*, 2017). The shells have minute aromatic glands and give the characteristic pleasant smell. The pulp is pale orange, pasty, sweet, resinous and highly aromatic. The seeds, which are about ten to fifteen in number, are embedded in the pulp (Niharika *et al.*, 2022). Seeds have been widely used in the Indian traditional system of medicine, Ayurveda, as well as in various folk remedies, to treat a wide range of ailments. The gum or mucilage from bael seeds is also useful as a natural thickening and stabilizing agent in food processing. Bael fruit was chosen for this popular article due to its rich nutritional composition, wide-ranging medicinal properties, and its growing potential in food and industrial applications, especially its underutilized seeds and their functional benefits.



### Applications

- 1) Widely used in functional foods, nutraceuticals, and herbal formulations due to its rich bioactive compounds.
- 2) Plays an important role in traditional medicine for treating digestive disorders such as diarrhea and constipation.
- 3) Bael pulp is used in preparing various value-added products like squash, jam, slab, toffee, powder, nectar, and RTS (ready-to-serve beverages).
- 4) Tender fruits are preserved and used as pickles, while green fruits are processed into *murabba*, commonly used for stomach ailments.
- 5) Dried slices of green bael fruit are stored for long-term use and medicinal purposes.

- 6) Bael pulp is prepared as a sherbet, a natural summer drink that helps reduce dehydration and fatigue.
- 7) Contains phytochemicals like tannins, flavonoids, alkaloids, and essential oils, contributing to its antimicrobial activity.
- 8) Bael fruit powder can be incorporated into bakery products such as cookies for nutritional enhancement.

### Advantages

Bael fruit has high medicinal value, especially at the early ripening stage. It is widely used in alternative medicine to manage conditions like diabetes, high cholesterol, ulcers, digestive disorders, and infections. Bael juice possesses multiple therapeutic properties, including antioxidant, anti-inflammatory, antibacterial, antiviral, and hepatoprotective effects. In addition, unripe or half-ripe bael juice aids digestion, strengthens the stomach, and helps prevent conditions like scurvy.

### Disadvantages

Despite its traditional importance, the medicinal benefits of bael are not fully validated in humans due to limited clinical research. Its composition varies with soil, climate, and ripeness, leading to inconsistent effectiveness. Lack of standardization in processing further affects product quality and reliability. Moreover, translating traditional knowledge into scientifically proven treatments remains a major challenge.

### Conclusion

Bael is a remarkable example of how traditional knowledge can align with modern nutritional needs. From being a backyard remedy to emerging as a functional food ingredient, its journey reflects a growing shift toward natural wellness. Bael can play a significant role in diversifying the food industry while also promoting sustainable use of indigenous resources. Embracing this underutilized fruit could not only enhance product portfolios but also support health-conscious lifestyles.

### References

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