

Bilimbi: The underutilized fruit of South India

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Abstract

India is a country with rich heritage and lot of flora and fauna. India's economy mainly depends upon agriculture and Indian agricultural products have a very good demand over world market. Many of the locally available fruits and vegetables go unnoticed in many states. They become underutilised due to the lack of awareness about its nutritional, health benefits and preservations techniques. In this review paper the authors focuses about the features of the underutilised fruit bilimbi.

Keywords: Bilimbi pickle, culinary uses, phytochemicals, recipes

Introduction

Bilimbi is considered to the native of South East Asia, now it has been cultivated all over the world. Due to increased population and lack of agricultural facilities these plant is now recognised and comes under underutilised plant. Earlier it is cultivated in countries like Srilanka, Asia, Malaysia and Maldives. Now it has been a question that many people in Asia were not aware of this perianal tree. The reason behind this is many farmers do not grow this tree in their farms. The tree is found in some parts of Indian villages. In India this tree is observed in North and South India. In South India certain parts of Kerala and Tamil Nadu these tree is grown and called as sour tree (Pulich Maram in Malayalam Language).

Common Names

1. Pickle tree
2. Sour tree
3. Cucumber tree
4. Bilimbi
5. Irumban Puli in Malayalam Language
6. Pulichikai in Tamil Language

Morphology of Bilimbi

Plant

Bilimbi is a perennial tree which grows up to a height of nearly 15 meters. It can grow in any type of soil, but the pH must be in between 5.5 to 6.5. It needs less water to grow.

Bilimbi Leaves

Bilimbi leaves are green in colour on the top and pale green colours in bottom. Leaves are densely crowded and long. Leaves emerge at opposite directions and are distributed evenly.

Bilimbi Flowers

Bilimbi flowers are reddish purple in colour with five petals. They bloom in the month of December and February.



Fig 1: Bilimbi Leaves



Fig 2: Bilimbi Flowers



Fig 3: Bilimbi Fruits

Bilimbi Fruits

Bilimbi fruit is always sour in taste, extremely acidic and astringent. The fruit is sour because it contains high amount of oxalic acid and Vitamin C. The fruit is preserved by sun drying in many countries. Fruits of bilimbi are available throughout the year. The tree yields thousands of fruit in a year. When the fruit is unripe it is crunchy in taste and when it gets matured and ripe the fruit changes in to bright green to yellowish. Once it gets ripe it falls on the ground. Seeds are brown in colour. Besides its refreshing aroma and zesty taste, the bilimbi fruit confers umpteen benefits for human health such as managing diabetes, treating hypertension, remedying hemorrhoids, strengthening bones and soothing cough and cold (Kalyani Krishnan,2020) [2] Bilimbi fruit may be stored for up to one week in the refrigerator. (www.specilaityproduce.com). Freshly made concentrated juice has a very high oxalic acid content and consumption carries a high risk of developing acute renal failure (ARF) by deposition of calcium oxalate crystals in renal tubules.(Bakul *et al.*,2013) [1]

Major Nutrients Present in Bilimbi Fruit

1. Calcium
2. Dietary Fibre
3. Iron
4. Oxalic Acid
5. Phosphorus
6. Protein
7. Vitamin B₂
8. Vitamin B₃
9. Vitamin C

Phytochemicals Present in Bilimbi Fruit

1. Alkaloids
2. Coumarins
3. Emodins
4. Flavonoids
5. Glycosides
6. Saponins
7. Tannins
8. Terpenoids

Culinary Uses of Bilimbi Fruit

Pickle and Fish Curry

In Kerala it is used for making pickles and to make fish curry, especially with Sardines, while around Karnataka, Maharashtra and Goa the fruit is commonly eaten raw with salt and spice (www.en.wikipedia.org)

As Preserve



Fig 4: Dried Bilimbi Preserve

Sun dried bilimbis are used as a preserve

Salads

Used in salads

As a Substitute

As a substitute for tomatoes and tamarind

Recepies from Bilimbi Fruit

The fruits were examined for any damage and bruises. All dirty things impurities and foreign materials were removed. Washed it thoroughly in luke warm water.

A. Bilimbi pickle (pulichikai achaar)



Fig 5: Bilimbi Pickle

Ingredients Needed

Table 1: Ingredients Needed For Bilimbi Pickle

| S.No | Particulars | Amount |
|------|-----------------|----------|
| 1 | Bilimbi | 250 g |
| 2 | Chilli Powder | 3 tsp |
| 3 | Asafoetida | ½ tsp |
| 4 | Gingerly oil | 50 ml |
| 5 | Salt | To taste |
| 6 | Mustard Seeds | ½ tsp |
| 7 | Fenugreek Seeds | ¼ tsp |
| 8 | Turmeric Powder | ½ tsp |

Procedure for Preparation

1. Select unripe bilimbi fruit
2. See whether the fruit is damaged and bruised
3. After selection wash it in running water to avoid dirt or impurities
4. With a help of a knife cut it in to small pieces
5. Take it in a bowl and add salt to set it
6. Leave the bowl for two days
7. Once salt sets in to the fruit, drain the water separately
8. Take a pan and pour gingelly oil and heat it
9. Add mustard seeds and curry leaves
10. Once it burst, add chilli powder, fenugreek powder, asafoetida powder to the pan and mix well with the drained water.
11. Leave the spice mixture to get cool. wait and then add spice mixture to bilimbi pickle mix
12. Store in an airtight container and refrigerate.

B. Bilimbi juice (pulichikai juice)



Fig 6: Bilimbi Juice

Ingredients Needed

Table 2: Ingredients Needed For Bilimbi Juice

| S.No | Particulars | Amount |
|------|-------------|----------|
| 1 | Bilimbi | 250 g |
| 2 | Sugar | 325 g |
| 3 | Ginger | 2 Pieces |
| 4 | Salt | A pinch |

Procedure for Preparation

1. Select unripe bilimbi fruit
2. See whether the fruit is damaged and bruised
3. After selection wash it in running water to avoid dirt or impurities
4. With a help of a knife cut it in to small pieces
5. Put bilimbi and along with ginger in a mixer and grind

- well
6. Squeeze out the juice from the pulp
7. Take a pan and pour the juice add sugar and a pinch of salt to it
8. Boil the mixer and allow it to cool
9. Store it in an airtight container and when needed it can be dilute with water

Medicinal Benefits of Bilimbi

Bilimbi and Fever

The high vitamin C in this fruit helps strengthen the immune system helping to fight against the fever (Teresa Thomas, 2017) [7].

Bilimbi and Venereal Diseases

In Malaysia the leaves of bilimbi are used as a treatment for venereal diseases (www.flowersofindia.net)

Bilimbi and Muscle Pain

Leaves of the bilimbi tree are pounded and turned either into a paste or poultice, which may then be applied directly on painful muscles. Unlike conventional painkillers and non-steroidal anti-inflammatory drugs, bilimbi leaves help ease muscle pain without causing unfavorable side effects. (www.helathbenefits.com)

Conclusion

The versatile tree bilimbi goes unnoticed in many regions. Some study reveals that the consumptions of bilimbi fruit may produce oxalate stones when consumed raw, but the fruit when preserved can be a source of income generation to the local farmers.

References

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