

Backyard Basella Farming: A Key to Eradicate the Malnutrition of Rural India

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Introduction

Basella is an edible leafy vegetable as well as a plant of ornamental in balcony and terrace. It is a warm-season soft succulent climbing, a sun-loving leafy vegetable valued for its succulent leaves with petioles. It belongs to the genus of *Basella* L. and the family of Basellaceae. It is native to India or Indonesia and spreads all over tropical Africa and tropical South America. It is commonly grown in north India during the summer. It is easy to grow basella in the backyard of every home in rural villages. It is grown as a pot herb almost in all parts of India.



Figure-1: general view of basella (www.itslife.in)

Basella is commonly known as Malabar spinach, Malabar nightshade, Indian spinach, Poi saag, Bachalaku (in Telugu), Vasalakkirai (in Tamil), Basale (in Karnataka), Poi ni bhaji (in Gujarath), Pui Shaak (in Bengal), Nawi nawk (in Mizoram), Upodika (in Sanskrit), Velbendi (in Maharastra), Lalbachlu (in Hindi) and Valchi bhaji (Konkani).

Description

Basella is a fast-growing vine (need support for growth) reaching about 8 to 10 meters in length with soft stems. Leaves are broad with mucilaginous texture. At present green and red-stemmed varieties are available. From axils of leaf small white or pink borne globular, fleshy elongated flower (in spikes) produced. From flowers, four parted purple to black coloured berries (fruits) formed. Under warm climate plants will produce mature fruits within 70 days of planting (PIER, 2017). Flowers are perfect white to pink in colour with persistent calyx, stamens have cordate anthers with short filaments and the ovary is monolocular. Both flowers and fruits are edible.



Figure-2: Malabar spinach fruits (commons.wikimedia.org)

Health benefits and uses

- Young stems and leaves of basella are more palatable they can be eaten as raw or cooked as other greens.
- By mixing leaves of this plant with flour of gram and frying deep them in mustard oil used to make pakoras (best for regular evening nutritive snacks).
- Regular consumption of basella slows down the aging process.
- In Ayurveda, basella is used to treat anemia, dysentery, cough, and cold-related infections.
- It is more valued for high population countries like India because it checks malnutrition of the children.

- Mucilaginous leaves have gastroprotective, antioxidant, anti-inflammatory, ulcer healing, and wound healing properties.
- In males the consumption of basella increases the testosterone levels, thus boosting the libido and regular intake restores the vitamin A deficiency in men.
- The decoction which is made from leaves acts as the safest laxative in children and pregnant women.
- Consumption of paste of red basella roots in combination with rice-washed water for 30 days in the morning with an empty stomach can cure irregular periods.
- From the fruit of basella dark purplish violet colour food colorant was prepared (Ram *et al.*, 2011).
- Leaves and roots of basella are used for reducing the afterbirth pain and stomach pains and enhance milk production.
- Leaves are used for preventing constipation and gonorrhoea.



Figure-3: Benefits of Malabar Spinach (www.dairystore.com)

Nutrition

A 100 g portion of cooked Malabar spinach contains 23 calories. A single serving has 0.8 g of fat, 3 g of protein, 2.7 g of carbohydrates, calcium (124.00 mg), potassium (256 mg), iron (1.48mg), magnesium (48mg), sodium (55mg), vitamin A (2320 IU) and vitamin C (5.9 mg).

Variants of Malabar Spinach

- *Basella alba*: It produces green colour stems and deep green leaves.
- *Basella rubra* (Red Basella): It has ornamental value due to reddish stems and green leaves with red or pink borne veins.
- *Basella cordifolia*: Leaves are heart-shaped.

Soil and climate

Sandy loamy soils which are rich in organic matter with a pH ranging from 5-8 are highly suitable for its cultivation. It requires a hot and humid climate. The plants are sensitive to frost. Low temperatures restrict plant growth and reduce yields. Flowering occurs during short-day months of the year. For cultivation of Malabar spinach tropical and subtropical climate suitable. Under temperate climates, it grows as annual.

Propagation

The stems of basella can form roots rapidly whenever they touch the soil hence it is easily propagated through stem cuttings. Basella also propagated through seeds (10-15 kg/ha) but poor germination is noticed because of the hard seed coat. For fast germination of seeds mechanical scarification and soaking them overnight in water before planting is beneficial.

Harvesting and yield

Basella reaches maturity 50-60 days after seed sowing. Harvesting is done by trimming leaves and tender stems of 15-25cm long with a knife subsequent harvest can be done for every 3-5 days. For bushy maintenance of plant in backyards aggressive pruning is needed which do not cause any harm to plants. Plucking of leaves encourages more growth. Until the plant produces new shoots actively we can continue plucking leaves and tender stems. The yield of fresh leaves per plant is 1-2kg.

Conclusion

Though basella is a minor vegetable but packed with powerful antioxidants and nutrients so there is a need to enhance the cultivation of this plant for potential sources of new drugs. The different extracts from various parts of this plant have been utilized for curing many diseases and health problems since the time of immortal throughout the world, especially in India and China. Basella is the best substitute for synthetic multivitamins for resolving malnutrition and various illness caused by deficiency of essential nutrients.

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