



NONI – EXPLORING ITS ORIGIN, USES AND VALUE ADDED PRODUCTS

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Introduction

Noni, also known as Indian mulberry (*Morinda citrifolia* L.), is recognized by a variety of names across the world, such as great morinda, cheese fruit, mouse's pineapple, yellow root, jumble breadfruit, and hog apple. In India, it is known by different names depending on the region: *nuna*, *manjanathi*, and *manjanuna* in Tamil; *togaru* in Telugu; *kakai pala*, *kattapitalavam*, and *mannanatti* in Malayalam; and *haladipavete* and *tagatemara* in Kannada.

In Hindi, it is referred to as *ach* or *awl*, while in Sanskrit, it goes by *ach*, *paphanah*, or *achchukka*. In Marathi, it is called *aseti*, *nagkura*, *mundari*, and *salidaru*. It is cultivated in plantations both for its ornamental value and its medicinal properties. Noni trees are also strategically planted as windbreaks to support pepper vines and to provide shade for coffee bushes.



ORIGIN AND DISTRIBUTION

Noni is believed to be native to the maritime forests of northern Australia, the western Pacific and the Indian Oceans. It was widely dispersed by indigenous peoples around 2,000 years ago and later by Europeans, leading to its naturalization in many tropical and coastal forests worldwide, including regions such as Florida, Puerto Rico, and the U.S. Virgin Islands.

The genus *Morinda* is found in diverse locations including Africa, Australia, Barbados, Cambodia, Cuba, Fiji, Florida, India, Jamaica, Java, Malaysia, the Philippines, Southeast Asia, Thailand, Vietnam etc., In India, it thrives naturally in the Andaman and Nicobar Islands and is commonly seen throughout the coastal regions, growing along fences and roadsides due to its adaptability to hardy environments. Specifically, *Morinda tinctoria* is abundantly found in most parts of Tamil Nadu and some regions of Kerala, while *Morinda citrifolia* is widely distributed across Kerala, especially in coastal areas and in the Mangalore region of Karnataka.

DIFFERENT SPECIES

1. *Morinda citrifolia* L

It is extensively found throughout the Pacific region, where it bears medium to large fruits. It typically grows as a large evergreen shrub or small tree, reaching heights of 6 meters or more. The bark is grey or brown, varying from smooth to slightly rough. The twigs are light green

and four-angled, while the leaves are opposite, with sturdy petioles measuring 1-2 cm in length.

2. *Morinda citrifolia* var *bracteata*

It is a small-fruited variety with distinctive bracts, found in Indonesia and other regions between the Indian and Pacific Oceans.

3. *Morinda citrifolia* var *potteri*

It is an ornamental variety characterized by its green and white leaf variegation and distributed throughout the Pacific region.

4. *Morinda officinalis*

Native to Vietnam. This perennial is a slender, climbing shrub with violet, hairy young shoots, while the leaves are oblong and opposite. It produces white flowers in axillary panicles and bears globose, scarlet fruits when ripe, each containing two seeds. The roots are known to have tonic properties.

5. *Morinda pubescens*

Found in Sri Lanka, Myanmar, Malaysia and India, this small tree typically grows up to 4 meters tall. It features long, fissured bark. The leaves are elliptic or lanceolate and the flowers are white, arranged in axillary globose heads. The fruit is a drupe, which can be globose or ovoid in shape.

6. *Morinda lucida* Benth - Found in West Africa

NUTRITIONAL ANALYSIS OF HAWAIIAN NONI (Noni fruit powder)

Per 100 grams (%)	
Protein	5.8 %
Fat	1.2 %
Moisture	9.3 %
Ash	10.3 %
Total Dietary Fiber	36 %
Carbohydrate	71 %

NUTRITIONAL ANALYSIS OF HAWAIIAN NONI (Noni Leaf Capsules)

Per 1200 milligrams (mg)	
Protein	69.6 mg
Fat	15.5 mg
Carbohydrate	843 mg
Total Dietary Fiber	419 mg
Calories	3
Vitamin A	2.26 IU
Vitamin C	9.81 mg
Niacin	0.048 mg
Iron	0.02 mg
Calcium	0.88 mg
Sodium	2.63 mg
Potassium	32.0 mg

MEDICINAL USES:

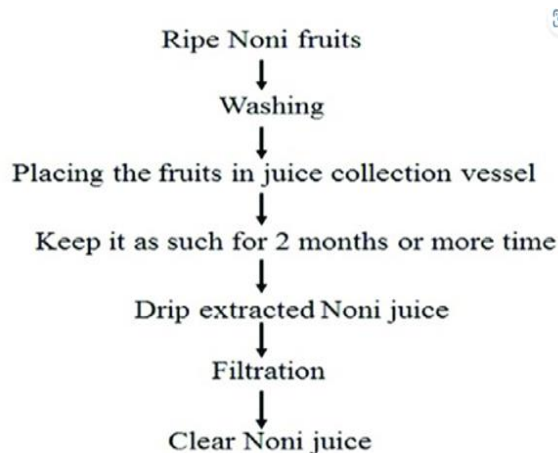
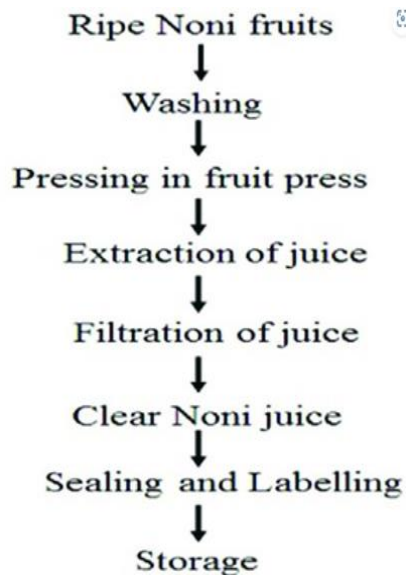
- Noni fruit juice is used as alternative medicine to treat various diseases like diabetes, heart diseases, arthritis, high blood pressure, menstrual disorders, AIDS, headaches, gastric ulcers, muscle pain etc.,
- The tribes of the Andaman and Nicobar Islands eat this fruit raw with salt or as a cooked vegetable.
- The Nicobarese combine the leaves of *Tylophora tenuissima* with those of *Morinda citrifolia*, crush them, mix with water, and use the mixture as a febrifuge, as well as apply it to the body to relieve pain.
- The roots and leaves, along with various other ingredients and coconut milk, are made into a paste is used to treat bone fractures.
- Also it has various other medicinal properties like
 - Antimicrobial properties
 - Anti tumour and anticancer properties
 - Insecticidal activity

- Analgesic activity
- Antioxidant properties
- Allergenicity and toxicity
- Anti – inflammatory properties
- Anti-fungal activity

VALUE ADDED PRODUCTS:

1.PURE JUICE

This juice is 100% pure and contains no additives like sugar. It is extracted either through a drip extraction method or by pressing the fruit.



2. AMENDED OR FLAVOURED NONI JUICE PRODUCTS

Noni juice is often blended with other fruit juices or flavorings, such as raspberry, strawberry, or grape, to enhance its taste. Some manufacturers opt to dilute the juice with water and sweeten it by adding sugar, making the product more palatable.

3. FRESH – SQUEEZED NONI JUICE

Fresh-squeezed noni juice (filtered, refrigerated, or pasteurized) has a sweeter, fruitier flavor than aged, fermented noni juice. Up to 65% juice recovery by weight is possible using this method. Home producers use a variety of pressing methods, from manual squeezing to hydraulic presses. Fresh-squeezed noni juice, with its golden amber color, has significantly less sediment than fermented noni juice. Fermentation can be stopped by refrigeration or pasteurization, preserving the fruity, sweet taste. Alternatively, natural fermentation can occur in bottles before marketing or consumption.

4. RECONSTITUTED NONI JUICE

Noni fruit pulp can be chopped, dehydrated, and powdered before being used in reconstituted noni juice products for the dietary supplement industry. These products are typically standardized to contain around 0.8% active noni polysaccharides.

5.NONI FRUIT AND JUICE POWDERS

In Hawaii, noni fruit is processed into dried powders made from the whole fruit, deseeded fruit, and juice. Noni juice can also be evaporated and transformed into a powder, which is used in various products, including reconstituted juices. Due to its highly hygroscopic nature, noni juice powder must be mixed with a non-hygroscopic carrier to maintain its powdered form.



Noni juice



Noni juice powder