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## Noni fruit crop is a versatile medicinal plant

**BS Thorat, AR Kambale and KM Patil**

**Abstract**

Noni is an erect, mostly branched trees, shrubs, or sometimes lianas which belongs to the family Rubiaceae. The family contains about 13,500 species in 611 genera, which makes it the fourth-largest angiosperms are grown over the world. Southeast Asia and Australasia is considered as the centre of this origin. It is being cultivated in the species is now cultivated throughout the tropics and widely naturalized. *Morinda Citrifolia* grows extensively throughout the South Pacific. Noni is exceptionally easy to grow and withstands harsh conditions that several trees cannot. India's noni growing states include Tamil Nadu, Kerala, Maharashtra, Karnataka, Andhra Pradesh and Odisha. Most of the *Hibiscus* species are used as ornamental plants. Among them *Morinda Citrifolia* is having certain medicinal properties. It is mainly grown for its fleshy fruit, which is the commercially valuable part of the plant. The color of the fruit plays an important role in determining the quality of juice. It is used in form of juices, powder, flavoring and coloring agent for food and drinks.

**Keywords:** Noni, Rubiaceae, medicinal uses, *Morinda Citrifolia*

**Introduction**

Noni scientifically known as *Morinda citrifolia* belongs to the family Rubiaceae. The fresh noni fruit contain moisture 78.54%, amino acid 2 - 3%, vitamin C 2-3.90%, pectin 1.90%, ether extractives 1.02%, carbohydrates 6-8%, crude fibre, ash 0.97%, calcium 1-2%, potassium 1.5- 3%, zinc 2-4%; magnesium 1-3%, iron 1-2%, folate 1-1.7%, aluminium and sodium in traces, reducing sugars 0.087%, sucrose 0.18%, mucilage, niacin 1-2% and anthocyanins. The seeds contain moisture 10.32%, nitrogen 1.09%, fatty oil 0.65%, cellulose 17.34%, protein 4.12% and lipids 1.98%. In addition, sixteen aminoacids have also been identified and quantified. Noni also provides fatty acids, amino acids (serine, arginine and methionine), and powerful antioxidants, such as anthocyanins, beta-carotene, catechins, coenzyme Q10, flavonoids, lipoic acid, lutein, lycopene, selenium anthraquinones, organic acids, xeronine, caproic and caprylic acids (Levland and Larson 1979) [4].



**Fig 1:** Noni plant and its flowers.



Fig 2: Noni leaves and fruits

### Botanical Description

It is an erect, mostly branched trees, shrubs, or sometimes lianas. Leaves opposite, pinnately veined, upper surface often with domatia, lower surface with pubescent domatia in axils of midrib and lateral veins, stipules interpetiolar, leafy, distinct or adnate to petioles forming a sheath. Flowers perfect, heterostylas, or sometimes unisexual, in irregularly globose, ovoid to ellipsoid heads, bracts small; calyx lobes (2) 4-6, short, usually truncate, bases connate, rarely with 1-2 leaf-like lobes; corolla funnel form or salverform, lobes (2-) 4-6, valvate in bud, keeled within; nectary disk annular; stamens inserted on corolla throat, exserted; anthers dorsifixed; ovary 2-celled or incompletely 4-celled, ovules 1 per cell, attached below middle or near base; style dimorphic, 2-branched. Fruit a drupe, those of the whole inflorescence connate to form a fleshy or hard syncarp, containing

cartilaginous, 1-seeded pyrenes. Seed 1, obovoid or reniform. (Abbott and Shimazu 1985) <sup>[1]</sup>. Apart from its wide range of uses, noni is becoming increasingly important because of the growth in the export as a source of natural dye obtained from the dried seeds of noni. Fatty acids, amino acids (serine, arginine and methionine) and powerful antioxidants, such as anthocyanins, beta-carotene, catechins, coenzyme Q10, flavonoids, lipoic acid, lutein, lycopene, selenium anthraquinones, organic acids, xeronine, caproic and caprylic acids. etc. (Moorthy and Reddy 1970) <sup>[6]</sup> are extracted from the noni fruits. Noni plant tolerates a warm, humid tropical climate and is susceptible to frost.

Noni products are sold all over the world, but they're most popular in North America, Mexico, Asia and Australia. Mainly Noni Juice and Noni powder is most usable product in the community.



Fig 3: Noni juice and powder

### Analgesic

Noni has the nicknames of “The Tree for Headaches” or “The Painkiller Tree”. Studies have shown that noni reduced pain

comparable to the drugs *tramadol* and *hydrocortisone*, making it effective for arthritic and other joint pains.

### 1. Immune system booster

It activates macrophages and strengthens the immune system, which then produces more lymphocytes. It also contains antibacterial agents that fight infectious bacteria, including *Staphylococcus aureus* and *Escherichia coli*.

### 2. Antidepressant/Sedative

It stimulates *serotonin* and *melatonin*, two very important hormones. *Serotonin* affects mood, emotions, and sleep; imbalance in levels of serotonin may contribute to depression. *Melatonin* regulates the Circadian rhythm, which helps you sleep; keeping this regular will help you get a good night's rest, also improving your mood.

### 3. Skincare/hair

It's properties are useful on skin and scalp conditions, such as eczema and ringworm; also rubbed on scalp for lustrous hair; and will keep your skin young. Just rub some juice on affected skin/scalp, leave on for 15 minutes, rinse off. Ingestion of juice may help your nails to grow stronger.

### 4. Anti-tumor/Anti-cancer

It stimulates the production of nitric oxide. *Nitric oxide* is an extremely useful substance, one that is at the base of many of it's benefits. In this case, it reduces tumor growth and helps your body fight against the cancerous replication of cells. It also contains an immunomodulatory polysaccharide rich substance known as *noni-ppt* that further fights cancer (Issell, 2001) [3]. One more thing that's important is the amount of phytochemicals in noni that fight cancer. Phytochemicals are found in vegetables and herbs, if eaten regularly will build up preventive amounts. In the case of cancer already being present, noni and other plants with high amounts will slow, stop, or totally reverse the cancer process.

### 5. Hypertension

Noni is high in phytonutrients, selenium, and vitamin C, which fights free radical damage on blood vessel walls; *scopoletin*, a compound that may lower blood pressure; it is alkaline, which keeps bodily fluids from becoming too acidic, therefore hurting free radicals. It also has *proxeronine*, which is needed for the body to produce xeronine. *Xeronine* helps coordinate the cells to work harmonious, lowering stress and in turn, blood pressure. Also has the amino acid, *tryptophan*. When tryptophan enters the blood stream and goes to cells, it helps produce other substances that are important, such as even more *serotonin*, which is great for lowering blood pressure by way of its relaxing effect.

### 6. Cholesterol

It prevents the absorption of LDL cholesterol, thus reducing plaque in arteries, keeping you healthy and alive longer.

### 7. Memory healthier and booster

Noni prevents absorption of cholesterol by way of its large amount of phytosterols. This directly helps your brain stay healthier, and plaque does not build up in arteries feeding the brain, keeping it properly oxygenated.

### 8. Irritable Bowel Syndrome/Constipation

It is high in soluble fiber, which helps ease the strain on your intestines and softens stool. It also has necessary vitamins and minerals to keep your intestines healthy.

### 9. Antibacterial/Antifungal/Antiviral

It has properties to fight infections comparable to that of prescription drugs. It contains *anthraquinones*, *scopoletin*, and *terpenes*, among others all work together to fight diseases.

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