



**ORIGINAL RESEARCH PAPER**

**Ayurveda**

**IMPORTANCE OF MORACEAE FAMILY IN AYURVEDA**

**KEY WORDS:** Moraceae, Vatadi varga, Amradi varga, Ficus species

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**ABSTRACT**

Moraceae is one of the latex producing family with cosmopolitan distribution. The members of the family is a part of indian tradition, food and medicine. Most of the species are trees and shrubs. The family includes well known plants such as fig, banyan, sacred fig or bodhi tree, jackfruit, mulberry, breadfruit etc. The key feature of this family is catkin inflorescence and drupe or sorosis type of fruit. In Ayurvedic classics the members of Moraceae like *Udumbar*, *Aswatha*, *Vata*, *Plaksha*, *Kakodumbarika* and *Nandi vruksha* are explained under *Vatadi varga* and plants like *Panasa*, *Lakucha* and *Tootha* are explained under *Amradi varga* by *Bavamisra*. *Panchavalka*, *Nyagrodadhi gana*, *Nalpamara* etc are commonly using formulations in daily Ayurveda practices, in which the Moraceae members are highlight of this medicinal groups.

**INTRODUCTION**

The Moraceae is often called the ' Mulberry family ' or ' fig family '. The family comprising about 37 to 43 genera and 1000 species. Most are widespread in tropical and subtropical region. The family includes mainly trees and shrubs. Banyan tree ( *Ficus bengelensis* ) which is recognized as national tree of India, the sacred tree *Aswatha* / *Bodhi tree* ( *Ficus religiosa* ) which is the most worshipped tree in india are members of this family. *Aswatha* is considered auspicious in Hinduism, Jainism and Buddhism.

Gautham Budha attained enlightenment under this deciduous tree. According to the Skanda purana, *Lord vishnu* was born and resided under the *Aswatha*. He likes himself as *Aswatha*, in Bagavad geetha says " *I am Aswatha among all trees*". This tree also represent the Trinity of *Bhrahma*, *Vishnu*, *Shiva*-the root being *Bhrahma*, the trunk *Vishnu*, the top portion *Shiva*. Most of these species of Moraceae is well known for their edible fruits and they are an integral part of common Indian diet like Jack fruit, bread fruit, fig etc.

They are freely available in Indian and adjoining continents. The family have economic importance also. Its medicinal importance has also been mentioned in Ayurveda. The plants are reported to possess anti bacterial, anti inflammatory, anti diabetic, antioxidant and immuno modulatory properties<sup>1</sup>. The medicinal plants of this family is explained under *Vatadi Varga* and *Amradi varga* by *Bavamisra* in *Bavaprakasha nighantu*.

**TAXONOMY**

**Kingdom :** Plantae Subkingdom : Viridaplantae  
**Infrakingdom :** Streptophyta  
**Division:** Tracheophyta Infradivision : Angiospermae Class : Magnoliophyta Super order : Rosanae Order : Rosales Family : Moraceae

**FAMILY CHARACTERS**

**Habit :** Mostly trees with latex. A few are shrubs or herbs  
**Leaves :** Simple, alternate and may be entire or lobed. Appear very different on the Same plant even. Stipules are large and caducous. Evergreen or deciduous  
**Inflorescence :** Catkin mainly and hypanthodium in ficus.  
**Flowers :** Small, regular, unisexual, may be monoecious or dioecious, hypogynous. Most Flowers have either petals or sepals but not both known as monochlamydeae.  
**Fruits :** Drupe, nut or achene. Sometimes sorosis or syconus  
**Seeds :** Endospermic or non endospermic Stem : Woody, gum exudes from the skin Root : Tap root

**ECONOMIC IMPORTANCE OF FAMILY**

1. **Artocarpus heterophyllus (Jack fruit)** is known for their large fruit and durable wood. The greenish unripe fruit is used as vegetable and brown fruit is eaten fresh which is nutritious and healthy. Canned or processed jack fruit has gained popularity as a meat substitute in some places.
2. **Artocarpus altilis (Bread fruit)** is a staple food of tropical areas. It contains considerable amount of starch. The wood is used for making canoes and furniture, glue and caulking material are obtained from the milky juices.
3. The fruit of **Ficus carica ( Common fig )** is can be eaten fresh or dried and used in jam making. It is cultivated commercially.
4. **Ficus elastica (Rubber fig)** yields White latex which is an important source of inferior natural rubber.
5. **Morus alba (Mulberry )** is an economically important plant being used for the domesticated silkworm, *Bombyx mori*.
6. **Ficus religiosa (Sacred fig), Ficus bengelensis (Banyan tree)** is grown as shade trees and yield good timbers.
7. The wood of **maclura pomifera (Osage Orange )** is strong and stable, that withstands rot. It is used to make good bows.
8. The inner bark of **Broussonetia papyrifera (Paper mulberry )** yields fiber that used for making papers.

**LITERATURE REVIEW**

Important medical plants of Moraceae family explained in Ayurvedic classics are:- *Vatadi Varga*

1. *Udumbara* ( *Ficus racemosa* Linn. )
2. *Vata* ( *Ficus bengalensis* Linn. )
3. *Aswatha* ( *Ficus religiosa* Linn. )
4. *Plaksha* ( *Ficus infectoria* Roxb. / *F. lacor* Buch-ham )
5. *Kakodumbarika* ( *Ficus hispida* Linn. )
6. *Nandi vruksha* ( *Ficus retusa* Linn. ) *Amradi Varga*
7. *Panasa* ( *Artocarpus integrifolia* Linn. )
8. *Lakucha* ( *Artocarpus lakoocha* Roxb. )
9. *Tootha* ( *Morus indica* Griff. )

Table 1 below shows the medicinal properties of these plants according to *Bavaprakasha nighantu*.

Medicinal plant	Rasam	Gunam	Veeryam	Vipakam	Dosha karmam
Udumbara m	Kashaya madhur am	Guru rooksham	Sheetam	Katu	Kapha pitha samanam
Vata	Kashaya m	Guru rooksham	Sheetam	Katu	Kapha pitha samanam

Aswatha	Kashayam	Guru rooksham	Sheetam	Katu	Kapha pitha samanam
Plaksha	Kashyam	Guru rooksham	Sheetam	Katu	Kapha pitha samanam
Kakodum barika	Kashaya tiktam	Laghu snigdham	Sheetam	Katu	Kapha pitha samanam
Nandi vruksham	Kashaya tikta madhuram	Laghu grahi	Ushnam	Katu	Kapha pitha samanam
Panasam	Apakwam-Kashaya	Guru			Apakwam-Vata

	madhuram Pakwam-Madhuram	Guru snigdham	Sheetam	Madhuram	vardhanam Pakwam-Pitha vata samanam
Lakucham	Madhura amlam	Guru	Ushnam	Madhuram	Apakwam-Tridosha vardanam Pakwam-Vatapitha samanam, kapha vardhanam
Tootha	Apakwam-Amlam Pakwam-Madhuram	Guru	Ushnam	Apakwam-Amlam  Pakwam-Madhuram	Apakwam-Pitha vardhanam Pakwam-Pitha vata samanam

### Importance in Ayurveda

Aswatha is most worshipped tree in India. It releases oxygen round the clock unlike other plants. So this sacred fig is a true 'Tree of life' even in the scientific sense. Vata is mentioned in many ancient Indian texts and scriptures representing the divine creation and symbolizing longevity. Aswatha, Vata, Amla, Vilwa and Asoka are collectively called Panchavati<sup>2</sup> (Grove of five trees). These tree species are believed to increase oxygen in the atmosphere.

Panchavalka<sup>3</sup> or twak panchaka is a combination of five bark of trees indicated in wide range of therapeutics in ayurveda. These are the bark of five trees that is Vata, Udumbara, Aswatha, Plaksha and Parishah. Among these first four trees belongs to Moraceae family (Vatadi kula). The combination is used as different kalpanas such as panchavalka kashayam, lepam, tailam, choornam etc. This group have the properties to cure Yoni vyapath (uterine disorders), Vranam (ulcers), Sthoulyam (obesity), Sotha (oedema), Asthibagna (fracture) and rakta vikaras (blood disorders). Nyagrodhadhi<sup>4</sup> gana explained in Susrutha samhitha having contents Vata, Udumbara, Aswatha, Plaksha, Nandi vruksha and others. This group proves beneficial in case of ulcers (vranam), cures all disorders of uterus and vagina (Yoni dosaharam), favours the adhesion of fractured bone (Bagna sadaka). It is also useful in bleeding disorders (Rakta pitha haram) and decreases fat (Medas) of body. Mutrasamgrahaniya<sup>5</sup> Mahakashaya explained in Caraka samhitha having the contents vata, Udumbara, Aswatha, Plaksha and others. These drugs having anti diuretics properties.

Lakucha is considered as most unwholesome fruit by Carakacharya as it causes Tridosha dushti and Rakta dushti. Panasam having Brumhana, Tarpana and Sukrala properties it is used in dourbalya and sukrakshaya rogas. Kakodumbarika is good medicine for Kamala and Pandu.

Table (2) below shows the therapeutic properties and important chemical constituents of these plants.

Medicinal plant	Useful part	Main action	Chemical constituent
Udumbara	Twak, Ksheeram, Moolam, Patram, Phalam	Varnyam, Vrana sodanam, Ropanam	Stem bark <sup>6</sup> -Tannin, Beta-sitosterol, lupeol, saponin, leucoanthocyanin
			Fruit -beta sitosterol, tiglic acid, friedelin, lupeol acetate
Vata	Twak, Ksheeram, Moolam (Ariel roots), Phalam, Patram, Anguram (tender shoots)	Varnyam, vranaharam, Visarpa dahaharam, Yonidosha haram	Stem bark <sup>7</sup> - lupeol, anthocyanidin derivatives Leaves- friedelin, Beta-sitosterol, catechin, quercetin, leucocyanidin
			Heart wood-Tiglic
Panasam	Phalam, Patram, Beejam, twak	Apakwam-Vishtambakaraka m Pakwam-Brumhanam, Balyam, Sukralam, Kshatavrunaharam	Bark <sup>12</sup> -Tannin, saponin, cycloartenone, cycloartenol, beta sitosterol, betulic acid
			Seed-jacalin
			Fruit- Vit. A, Vit. C, thiamin, riboflavin, calcium, potassium
Lakucham	Twak, Phalam	Apakwam- Sukra agni nashanam, Netra rogakruth, Rakta doshakruth	Fruit <sup>13</sup> - flavonoids, tannin, lignins, saponins and steroids
		Pakwam-Ruchyam, Vrushyam, Agnivardhanam	Seeds- Agglutinins Leave-Phenol, flavonoids, tannin, diethyl phthalate
Tootha	Twak, Phalam	Apakwam- Rakta pitha kruth	Leaves <sup>14</sup> - Brosimine B, morachalcone, isoquercitrin, moracin, astragaline

### CONCLUSION

Importance of Moraceae family has long been recognized and it has been grown for use as food, medicine and also for cultural activities. The genus Ficus is an important group of trees which has various chemical constituents of promise medicinal value. This is an exceptionally large pan tropical genus with over 700 species belongs to the family Moraceae. In Ayurveda important medicinal plants of this genus are classified under Vatadi Varga. The genus Artocarpus consists of tropical plants of the Moraceae family that are cultivated in Asian countries. Artocarpus includes almost 60 genera and more than 100 species. This genus is believed to produce a high yield along with an ample numbers of nutritional components. Its species are used as sources of food and also in traditional medicinal practices. This genus is classified under Amradi varga. Tannin is the chemical constituent common in Moraceae family which make it astringent. Moraceae family is inevitable part of Indian system of medicine.

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