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## A Review on *Narikela* (Coconut Palm)

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### ABSTRACT

Narikela or coconut palm is one among the trees which is seen almost all part of world. In olden Indian literatures it is adored as Kalpavruksha which means 'tree which gives everything'. It gives more products than any other trees in the world. It is observed that *Phala*, moola, pushpa, kshira of its phala, Fruit pulp of *Narikela* are used as an ingredient in 53 formulations, which are effective in more than 25 disease conditions. Indian mythology says even gods give respect to *Narikela* which points the importance of coconut among all members of plant kingdom.

Keywords: *Narikela*, Coconut.

### 1. Introduction

*Ayurveda* deals with dravya of sthava, janghama, dhatus and rasa origin, where maximum drugs are of sthava (herbal) origin<sup>1</sup> Information pertaining these dravyas are available in the classical texts of *Ayurveda*. *Narikela* is one of the classical drugs of herbal origin used in *Ayurveda* system. It is botanically identified as *Cocos Nucifera* Linn. It is a member of the palm tree family (Arecaceae) and the only living species of the genus *Cocos*.<sup>2</sup> It is one of the most useful trees in the world and is often referred to as the "tree of life". It provides food, fuel, cosmetics, medicine and several other uses. The coconut is an essential element in many Hindu rituals too. The main parts used in the of diseases are fruit, flowers, oil, water and root. coconut water and coconut kernel contain various micronutrients which are useful for disease prevention and maintaining good health.

#### Taxonomy<sup>3</sup>

Kingdom - Plantae  
Sub kingdom - Viridiplantae  
Infra kingdom - Streptophyta  
Division - Tracheophyta

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Sub division - Spermatophytina  
Infra division - Angiospermae  
Class - Magnoliopsida  
Super order- Lilianae  
Order - Arecales  
Family - Arecaceae  
Genus - Cocos  
Species - Cocosnucifera

#### Botanical description<sup>4</sup>

Narikela consists of dried endosperm of *Cocosnucifera* Linn. (Fam. Arecaceae), a tall palm, bearing a crown of large pinnate leaves, cultivated in coastal and deltaic regions of South India. Description: The lifespan of a coconut tree may be as long as 100 years. It has a single trunk that is straight, unbranched and can grow up to 20-30 m in height, its bark is cylindrical, annulated, grey and ridged, marked by ringed scars.

The stem bears a crown of large leaves varying from 4 to 6 m in length, are pinnate, leaflets equidistant, narrow, tapering, rigid and linear-lanceolate. The leaflets are bright green in colour.

The inflorescence arise at leaf axils and are enveloped by a carinate spathe and unbranched spadices. It is a hard oblong longitudinally splitting spathe enclosing many yellow or orange male flowers and few female flowers. Flower bears lanceolate petals, 6 stamens and an ovary consisting of 3 connate carpals. The flower of the coconut palm is polygamomonocious, with both male and female flowers in the same inflorescence. Flowering occurs continuously, with female flowers producing seeds. Coconut palms are believed to be largely cross-pollinated, although some dwarf varieties are self-pollinating.

Its fruit are as big as a man's head and 1-2 kg in weight. It is a drupe with a thin, smooth, grey-brownish or green or yellowish fibrous epicarp, 4-8 cm thick. The shape is trigonously obovoid or subglobose with a hard, woody endocarp and oily white endosperm and sweet milky or watery fluid in the large cavity.

Macroscopic description<sup>5</sup>- Drug available whole as well as in broken pieces of endosperm, whole drug 8-14 cm in size; ovoid, three angled, outer surface brown, somewhat rough due to shallow, reticulated striations; transversely broken; whole drug shows 0.8-1.2 cm thick, white endosperm and a large central cavity; fracture, short; odour, faint; taste, sweetish and oily.

Microscopic description- Endosperm shows testa, consisting of irregularly arranged, brown, compact, parenchymatous cells; beneath testa a very wide zone, consisting of outer 2-3 layers, thin-walled, smaller and angular parenchymatous cells, followed by radially elongated, larger and thin-walled parenchymatous cells, containing numerous aleurone grains, raphides, prismatic crystals of calcium oxalate and oil globules.

#### Distribution

*Cocosnucifera* is native to tropical eastern regions, today it is grown both over the Asian continent (India, Ceylon, Indonesia) and in central and South America (Mexico, Brazil); in Africa, the largest producing countries are Mozambique, Tanzania and Ghana. It is cultivated throughout the hot damp regions of Orissa, Bengal, Gujarat, Maharashtra, Karnataka, Kerala, Tamilnadu and Andrapradesh, possibly indigenous in the Cocos islands and N. Andamans.

#### Chemical Constituents<sup>6</sup>

Phydroxy benzoic acid in shell fibres are detected by TLC. In addition, tar from shells contained crotonaldehyde, furfural and acetic acid. Albumin, globulin and prolamine fractions of coconut were separated, hydrolyzed and amino acid is analysed. Albumin fraction composed of aspartic and glutamic acid, alanine, serine, threonine, valine, leucine, isoleucine, methionine, cysteine, proline, and hydroxyproline. Globuline fractions contained lysine and arginine. Prolamine fractions contained aspartic acid, glutamic acid, serine, threonine, alanine and valine coconut endosperm. Coconut milk contains histidine, arginine, lysine, tyrosine, tryptophan, proline, leucine and alanine. Coconut oil contains oil lauric, myristic, fatty acids, mixed glycerides, such as caprylic, lauric, myristic, dilauromyristin, laurodimyristin, dimyristopalmitin and dipalmitostearin, undecanoic and tridecanoic.

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## 2. Literary Review

References regarding Narikela are found in classical texts of Ayurveda like Charakasamhitha, Susruthasamhitha, Ashtangahrudaya, Kaiyadevanighantu, Bhavaprakasaniighantu, Rajaniighantu, Dhanwantharinighantu etc. In CharakaSamhitha it is mentioned in the treatment of Paithikachardi. In Chakradatta, Narikelais mentioned in Sula chikitsadhikaara. Bhavaprakasamentioned Narikela for the treatment of Amlapitha. Text book such as Dravyagunavijnanaby Prof. P.V Sharma, The API, AyurvedicMateriaMedicaand other books written by recent scholars also give a lot of information regarding its habitat, chemical composition, therapeutic uses etc. The various information available on Narikela including its paryayas, karma and different yogas consisting of narikelawith their indication in various Samhitas, Nighantus, Samgrahaand other text books are compiled, critically analyzed and are presented here.

**Table 1 Paryayas**

Paryaya	K.N	R.N	G.P	JLN	D.N	M.N.	H.N	S.N
Putodaka	+							
Thoyagarbha	+							
Rasaphala		+			+			
Suthunga	+	+			+			+
Lathavriksha	+							
Koorchasekhra	+	+	+		+		+	+
Drudaneeli		+						
Drudabeeja	+					+		
Mahaphala	+					+		
Neelatharu		+						
Tunga	+		+	+	+		+	
Mangaiya		+						
Neera					+			
Drudaneera	+							
Chocha	+				+		+	+
Sadaaphala	+		+				+	
Langali	+		+	+	+	+	+	
Uchatharu		+						
Tyaksha	+							+
Trunaraaja	+	+	+	+		+	+	
Skandhatharu	+	+	+	+			+	
Dakshinathyaya	+	+	+	+	+	+		
Duraaruha		+						
Vyambakaphala		+						
Drudaphala		+	+	+		+	+	+
Nagavruksha					+			

**Table 2 Paryayas with Meaning**

Sl.No	Synonyms	Meaning
1	Narikel	It is easily found near river -bank
2	Narikeli	Coconut tree or fermented liquor made from it
3	Tungadrumah	Its fruit contains kshira
4	Languli	Its leaves has pointed end
5	Tunga	It is a tall tree and grows straight
6	Jalaphalah	The nut of bispinosa
7	Latavriksha	It provides support to climbers
8	Skandhaphala	Fruits appear on trunk
9	Taalvruksha	It resemble to taal tree
10	Dradhaphala	The fruit is hard
11	Dradhabeeja	Having very hard seed
12	Dakshinatyaka	It grows mostly in south india
13	Sadaphala	Always bearing fruits
14	Nadikeli	It is easily found near river bank
15	Narikeri	It is easily found near river bank
16	Sadapushpa	Always bearing flower
17	Shiraphala	Fruits are on the top of the tree
18	Mruduphala	The inner pulp of the fruit is very soft
19	Putodaka	Having water in its hollow or interior
20	Neelataru	It's a tree with sky heights
21	Vishvamiitrapriya	The tree is dear to vishvamitra
22	Subhanga	Its dry fruit believed to be auspicious
23	Phalakeshar	Fruits having fibre
24	Toyagarbha	Containing water
25	Kurchashirshaka	Its upper part is hairy

**Table 3 Vernacular Names**

Sanskrit	Narikelavriksah, Narikelah
English	Coconut palm, Coconut
Hindi	Nariyalkavriksh, nariyal
Malayalam	Thengu ,Nalikeram
Kannada	Tengu, Kobbari, Thengu, Thenginamara
Gujarathi	Naliar, Shriphal, Koprun
Marathi	Naral
Tamil	Tenkai-maram, tennaimaram, tenkai
Telugu	Tenkaya
Assamese	Khopra
Punjabi	Narela, khopra
Oriya	Nariyal

**Classifications of narikela in various vargas and ganas<sup>7</sup>-**

- Amraphalaadvarga-bhavaprakasanighantu
- Oushadivarga - KaiyadevaNighantu
- Phalavargam - CharakaSamhitha
- Phalavargam - MadanaplaNighantu
- Vanoushadivargam – Amarakosam
- Phalavargam - HareethakyadiNighantu
- Amradipanchamovargam- DhanwanthariNighantu
- Hareethakyadvargam -PriyaNighantu
- Madhuradvayaskandham - SadrasaNighantu
- Amraadvargam - SodhalaNighantu

**Pharmacological properties<sup>8-13</sup>**

- Rasa-madhura
- Guna –guru, snigdha
- Virya-sheetha
- Vipaka-madhura
- Doshkarma-vatapitthahara
- Karma-Balya, Bruhaniya, Bastishodhan, Trushnanigrahan, Jvaraghna, Hridaya, Mutral, Deepan, Vrushya, Rak-tapittanashak, Shramhara, Vaatroganashak, Raktashodhan, Vishtambhi, Keshya, Kandughna, Pramehaghna, Shulahara, Vajikaran
- Rogagnata -Daah, Vaat-pitta, Rak-tapitta, Mutraroga, Shukradosh, Trushna, Shram, Hridayaroga, Vaatropa, Raktavikar , Kshayaroga, Prameha, Daurbalya, Jvara, Khal-itya-Palita, Kandu, Shula, Amlapitta

**Formulations**

- Himasagarataila
- Narikelakhanda
- Narikelakshara
- Narikelalavana
- Narikelasava
- Naracharasa
- Loharasayanam
- Laxmivilastailam

**3. Conclusion**

Narikela is found throughout Asian country and its description are often derived since Samhita period. In Ayurveda, Narikela is attributed with pharmacological properties of Madhura rasa; Madhuravipaka and Sheetavirya. Its prayogamarga is both iebahya as well as abhyantara in different forms. In classics many formulations are mentioned for treating numerous vyadhis. More analysis is to be inspired considering its various properties and therapeutic uses.

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