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## Ayurvedic Tambula Sevana- A Healthy Traditional Practice

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#### Abstract

Tambula (betel leaves/Paan) is very closely linked with Indian civilization and traditions. Ayurvedic classics mentioned chewing betel leaves in the context of Dinacharya (daily regimen) for the maintenance of perfect oral hygiene, for good taste and as a prevention of diseases of the oral cavity and throat. It too acts as post meal digestive stimulant, aphrodisiac and improves physical and mental stamina. All the problems related with Paan (betel leaves) chewing are mainly due to its use along with tobacco and its products. Ayurvedic method of Tambula Sevana (betel leaves chewing) is very much safe and good for health. In reality the betel leaves do not have any match as a cheap, natural and easily available appetizer, digestive stimulant, aphrodisiac and refreshing mastication. The present review highlights the traditional method of betel leaves chewing along with its scientific validation.

**Keywords:** Tambula, betel leaves, Paan, Ayurveda

#### 1. Introduction

Betel leaf has an esteemed place in human society right from the dawn of civilization, particularly in India and its neighbour countries [1]. Tambula (Paan/ betel leaves) is closely related with Indian culture especially among Hindus. Betel leaves and areca nut are used in many traditional ceremonies like while performing, Homa (ritual in which making offerings into a sacred fire), Puja (worship), in marriage and during offering to the priest, and so forth. Ancient Ayurveda scriptures recommended Tambula Sevana (Paan/ betel leaves chewing) for normal wellbeing. According to Ayurveda, Tambula Sevana is a post meal digestive stimulant, oral deodorant, natural antiseptic, astringent, diuretic, mood elevator, aphrodisiac, and nerve tonic [2]. It relaxes the mind, creates a feeling of wellbeing and improves the vocal chords [2, 3]. The antioxidant activity of its ingredients provides enormous scope in correcting the imbalances between free radicals and anti-free radicals, which is the major cause of several diseases [2]. Betel leaf is useful for the treatment of various diseases like bad breath, boils and abscesses, conjunctivitis, constipation, headache, hysteria, itch, mastitis, leucorrhoea, ringworm, swelling of gum, rheumatism, abrasion, cuts and injuries etc. as folk medicine while the root is known for its female contraceptive effects [4, 5].

#### 2. The Ingredients added with Betel Leaves

The details of ingredients mentioned in Ayurveda classics which are added with Tambula (Paan/betel leaves) are shown in Table No.1 [6-10].

Many other aromatic herbs which cleanse the mouth, removes bad odour can also be added along with betel leaves.

**Table 1:** Showing the list of ingredients mentioned in classical texts of Ayurveda which are added with Tambula (Paan/betel leaves)

S. No.	Substances	Ch.	Su.	A.S.	B.P.	Kai. Ni.
1.	Choorna/Sudha	-	+	+	+	+
2.	Jatiphala	+	+	+	+	+
3.	Kankola	+	+	+	-	+
4.	Karpoora Niriyasa	+	+	+	+	+
5.	Kasturi	-	-	-	+	-
6.	Katuka (Latakasturi)	+	+	+	-	+
7.	Khadira	-	-	+	+	+
8.	Lavanga	+	+	+	+	+
9.	Pugaphala	+	+	+	+	+
10.	Sukshma Ela	+	-	-	-	-

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### 3. Properties and Action of Betel Leaf and its Ingredients

Shown in Table No.2

Old betel leaves are slightly pungent, thin and pale and considered as best for chewing. Fresh betel leaves are sweet in primary and astringent in secondary tastes, Guru (hard to digest) and produces Kapha. Betel leaves growing in Vanga Desha (Bengal) is very pungent, laxative, digestive, produces

Pitta, hot (in Potency) and mitigates Kapha Dosha [9]. Areca nut which has its hard middle portion steam cooked mitigates all the three Doshas; that which is with its juice and uncooked is Guru (hard for digestion), Abhishyandi (produce secretions and block the bodily channels), and causes severe destruction of Agni (digestive fire) [9].

**Table 2:** Showing the properties and action of betel leaves and its ingredients

Name	Rasa (Taste)	Guna (Properties)	Virya (Potency)	Vipaka (Taste after digestion)	Karma (Action)
Choorma/ Sudha [11] (Slaked lime)					Mitigates Kapha and Vata Dosha, kill the germs, relieves the pain
Jatiphala [12] <i>Myristica fragrans</i> (HOUTT.)	Katu (pungent), Tikta (bitter), Kashaya (astringent)	Laghu (light), Snigdha (unctuous), Tikshna (sharp)	Ushna (hot)	Katu (pungent)	Mitigate Kapha and Vata Dosha, Grahi (water absorbent), improves taste perception and enhances digestive power, causes downward movement of Vata Dosha, produces cleanliness and wards off the bad odour from the mouth, cures the hoarseness of voice, kill the germs, useful in skin diseases
Kankola [13] <i>Piper cubeba</i> (LINN.)	Katu (pungent), Tikta (bitter)	Laghu (light), Ruksha (dry), Tikshna (sharp)	Ushna (hot)	Katu (pungent)	Mitigate Kapha and Vata Dosha, increases perception of taste, enhances digestive power and help in digestion, causes downward movement of Vata Dosha, aphrodisiac, removes bad odour from the mouth, helps in healing of the wound, cures diseases of the throat, teeth and mouth, helpful in cough and dyspnoea.
Karpura Niriyasa [14- 15] <i>Cinnamomum</i> <i>camphora</i> (T. NEES and EBERM.)	Madhura (sweet), Tikta (bitter)	Laghu (light)	Shita (cold)	Katu (pungent)	Mitigate Kapha and Pitta Dosha, anti-poisonous, wards off the bad odour from the mouth, anti-emetic
Kasturi [16] (Musk)	Katu (pungent), Tikta (bitter)	Guru (heavy)	Ushna (hot)		Mitigate Kapha and Vata Dosha, anti-poisonous, anti-emetic, wards off cold sensation, removes bad odour from the mouth
Katuka (Latakasturi) [17] <i>Hibiscus</i> <i>Abelmoschus</i> (LINN.)	Tikta (bitter), Madhura (sweet), Katu (bitter)	Laghu (light), Ruksha (dry), Tikshna (sharp)	Shita (cold)	Katu (pungent)	Mitigate Kapha and Pitta Dosha, cleanses and wards off the bad odour from the mouth, improves taste perception and enhances digestive power, Grahi (water absorbent), aphrodisiac, helpful in cough and dyspnoea
Khadira Sara [18] <i>Acacia catechu</i> (WILLD.)	Kashaya (astringent), Tikta (bitter)	Laghu (light), Ruksha (dry)	Shita (cold)	Katu (pungent)	Mitigate Kapha and Pitta, cures skin diseases, stops bleeding, helps in wound healing, relieves cough, kill the germs, helpful in diseases of teeth and mouth
Lavanga [19] <i>Syzygium</i> <i>aromaticum</i>	Tikta (bitter), Katu (pungent)	Laghu (light), Tikshna (sharp), Snigdha (unctuous)	Shita (cold)	Katu (pungent)	Mitigate Kapha and Vata Dosha, relieves thirst, aphrodisiac, increases perception of taste, enhances digestive power and help in digestion, removes bad odour from the mouth, anti-poisonous, helpful in cough, dyspnoea, and hiccough
Puga [11] <i>Areca catechu</i> (LINN.)	Kashaya (astringent)	Ruksha (dry), Guru (heavy)	Shita (cold)	Katu (pungent)	Mitigate Kapha and Pitta, produces intoxication, enhances digestive power and taste and wards off bad taste in the mouth.
Sukshma Ela [20] <i>Elettaria</i> <i>cardamomum</i> (MATON)	Katu (pungent), Madhura (sweet)	Laghu (light), Ruksha (dry)	Shita (cold)	Madhura (sweet)	Mitigate all the three Dosha, relieves burning sensation, cleanses mouth and wards off bad odour, increases perception of taste, enhances digestive power and help in digestion, allows downward movement of the Vata Dosha, anti-emetic, removes tastelessness of the mouth.
Tambula [9] <i>Piper betel</i> (LINN.)	Tikta (bitter), Kashaya (astringent)	Laghu (light), Tikshna (sharp)	Ushna (hot)	Katu (pungent)	Alleviates Kapha, improves taste, wards off bad smell of the mouth, provide good complexion and appearance, removes the waste/dirt of the lower jaw and teeth, cleanses the tongue mitigates excess of salivation and cures diseases of the throat.

In the study, "In-vitro anti-oxidant properties of Indian traditional Paan and its ingredients" done by Shrishailappa Badami, Sujay R Rai and Suresh B., the antioxidant activity of Indian traditional Paan and its ingredients was determined by using DPPH stable free radical scavenging assay. The study shows the presence of antioxidant activity in betel leaves along with most of its ingredients and supports its ethno medical use in India, which might be due to its anti-oxidant activity [2].

#### 4. Method of Preparation of Ayurvedic Tambula

Tambula or Paan chewing should be done daily and in the general preparation of it, two betel leaves are washed with water and smear with slaked lime and then with Khadira (catechu) paste, Puga (Areca nut) and other ingredients like Karpura, Kasturi, Jatiphala, or other fruits which produce cleansing of the mouth along with Sugandha Dravyas (aromatic substances) are added and, it is wrapped carefully with the same leaves [20]. While preparing one should discard the tip, root and the middle portion (rib) of the betel leaf. It is mentioned that life resides at the tip of the betel leaf, reputation at its root and wealth in its middle (rib). Mythologically it is believed that chewing the root gives rise to diseases, the tip to sin, the ribs take away life and the Shiras (veins of the leaf) destroys intelligence [10, 21].

As per the time in a day, quantities of ingredients differ like more of Puga (Areca nut) is added in the morning, more of Khadira (catechu) in the afternoon and more Choorna/ Sudha (slaked lime) at nights [9]. Kaiyadev Nighantu has a slightly different opinion and according to that during afternoon Choorna/ Sudha should be more and in the night betel leaves should be more than other ingredient [10].

#### 4.1 Time for the Chewing Betel Leaves

Tambula (Paan/ betel leaves) should be chewed in morning after the application of Anjana (eye-salve), Nasya Karma (nasal instillation), Gandusha (oil-pulling) and Dhumpna (medicated smoke inhalation) [22]. Other times are while indulging in sexual acts, soon after getting out of sleep, after meals, after vomiting, in the assembly of the wise and such other gathering [9, 23].

#### 4.2 Method of Chewing Betel Leaves

After adding all the necessary ingredients in the betel leaves one should start to chew it, while chewing the first juice (produced in the mouth by chewing) should be spit out if swallowed is similar to poison, the second is slightly purgative and hard for digestion (these two should be spit out); swallowing should be from the third onwards, which are similar to nectar and act as rejuvenator [10, 24].

#### 4.3 Medicinal and Nutritive Value of Betel Leaves

Betel leaf is traditionally known to be useful for the treatment of various systemic and oral diseases. It is very nutritive and contain a substantial amount of vitamins and minerals [25-26]. The details are given in –Table No.3

Due to its nutritive value six betel leaves with a little bit of slaked lime is said to be comparable to about 300 ml of cow's milk particularly for the vitamin and mineral nutrition. The leaves also contain the enzymes like diastase and catalase besides a significant amount of all the essential amino acids except lysine, histidine and arginine, which are found only in traces [25-26].

**Table 3:** Showing the nutritive value of betel leaf

S. No.	Constituents	Approximate composition
1	Water	85-90%
2	Protein	3-3.5%
3	Fat	0.4-1.0%
4	Minerals	2.3-3.3%
5	Fibre	2.3%
6	Chlorophyll	0.01-0.25%
7	Carbohydrate	0.5-6.10%
8	Nicotinic acid	0.63-0.89 mg/100g
9	Vitamin C	0.005-0.01%
10	Vitamin A	1.9-2.9 mg/100g
11	Thiamine	μ10-70 μg/100g
12	Riboflavin	1.9-30 μg/100g
13	Tannin	0.1-1.3%
14	Nitrogen	2.0-7.0%
15	Phosphorus	0.05-0.6%
16	Potassium	1.1-4.6%
17	Calcium	0.2-0.5%
18	Iron	0.005-0.007%
19	Iodine	3.4 μg/100g
20	Essential Oil	0.08 - 0.2%
21	Energy	44 kcal/100 g

#### 4.4 Controversy of Betel Leaves Chewing and Cancer

Traditional chewing of betel leaves along with the ingredients mentioned in Ayurvedic classics is very much safe and good for health. Excess use of betel leaves and adding other ingredients for taste or palatability is harmful. Particularly tobacco and other allied products which are used along with betel leaves cause dental caries, alveolaris, oral sepsis, palpitation, neurosis and even oral cancer [25]. Non-tobacco based betel leaves is not known for sure to cause any such calamity particularly as a non-addictive level of consumption. However, there is no denial of the fact that the leaves may contain a good amount (15 mg/g) of Safrole [27]. A carcinogen, but it is quickly metabolized in the human body into hydroxychavicol and eugenol, which are excreted along with urine [28], the betel leaves are also reported to possess antioxidant activity besides antimutagenic and anticarcinogenic properties, particularly against the tobacco carcinogens [29-32], due to the presence of ingredients like hydroxychavicol in it [33].

#### 4.5 Benefits of Chewing Betel Leaves

Ayurvedic classics mentioned that chewing betel leaves wards off increased Kapha, provide clarity, good taste and smell in the mouth, luster and charm on the face, it removes dirt of the jaw and teeth, gives pleasant voice, cleanses tongue, checks excessive salivation, is pleasing and alleviates diseases of throat [34-36]. Combination of betel leaves with slaked lime, areca nut and catechu mitigates all the three Dosha [36]. It is aphrodisiac, kills harmful microorganism, improves physical and mental stamina, improves quality of voice and brings good fortune [10]. In diseases like Alasa (abscess at the route of tongue), Upajiwika (ranula), Vidradhi (abscess), Talushosha (dryness of soft palate), Dantaroga (diseases of teeth), Arbuda (tumour), Galaganda (goitre), Apchi (enlargements of the glands of the neck), and other Kapha Dosha disorder betel leaves is beneficial.

Ayurvedic claims about the benefits of Betel leaves chewing are also proved by the researches. The bacteria primarily responsible for dental decay in man are *Streptococcus mutans* [37]. The stickiness of the plaque is caused by dextran, which is produced by the fermentation of dietary sucrose by *Streptococcus mutans*. The plaque bacteria, particularly

*Streptococcus mutans*, act on dietary fructose to produce lactic acid, which causes enamel decalcification (at below or above 5.5pH) [38]. The aqueous extract of betel leaves inhibits the different acid-producing oral pathogens which changes in the ultra-structure of the enamel and its properties like *Streptococci*, *Lactobacilli*, *Staphylococci*, *Corynebacteria*, *Porphyromonas gingivalis* and *Treponema denticola*. [39] So consuming betel leaves provide best oral hygiene.

In a study the ethanol extract of Betel leaf (*Piper betle L.*) was screened for its antibacterial activity against some food borne pathogens viz. *Vibrio cholerae ATCC 6395*, *E. coli ATCC 25922*, *E. coli O157:H7 NCTC 12049*, *Shigella dysenteriae-1 MJ-84* and *Staphylococcus aureus ATCC 25923*. Experimental findings revealed that the ethanol extract of betel leaves potentially inhibit the growth of these food borne pathogens and that can be useful to control food borne pathogen [40]. *Piper betel L.* showed hypotensive, cardio tonic, smooth and skeletal muscles relaxant actions [41-43]. The leaf extract also poses the bactericidal activity against the urinary tract pathogenic bacteria such as *Enterococcus faecalis*, *C. koseri*, *C. freundii*, *Klebsiella pneumoniae* etc [44-45]. The essential oil contained in the leaves possesses antibacterial, antiprotozoan and antifungal properties [25]. The fresh betel leaves possess antimicrobial, ringworm, antifungal, antiseptic and anthelmintic effects [46]. The betel leaves improves the vocal chords and are chewed by singers to improve their quality of voice [47].

#### 4.6 Contraindication of Betel Leaves Chewing

Betel leaves chewing is contraindicated in intrinsic hemorrhage, wasting due to injury in chest, thirst, fainting, dehydration, debility, and dryness of mouth [48]. It is also contraindicated in intoxication, inflammatory diseases of eye, poisoning and emaciation. After purgation, during hunger, Pramehi (Diabetes mellitus), dysuria and after consumption of milk one should avoid betel leaves chewing [10].

#### 4.7 Complication due to Excessive Betel Leaves Chewing

Even while consuming betel leaves in traditional way, care should be taken as excessive chewing of it may cause loss of strength of the body, eyes, ears, hairs, teeth, digestive power, skin tone and leads to vitiation of Pitta, Vata and Rakta [10, 49].

#### 5. Conclusion

Betel leaves are consumed by a large number of people from different walks of life. Ayurvedic method of preparation of Tambula and chewing it, is very much safe and beneficial for health. Unfortunately, now a days due to commercialization and marketing purpose, instead of traditional betel leaves and betel nut chewing, the use of Pan Masala, sweetened betel nut, etc. is becoming more popular among the people. These all are well known for their potential harmful effect on health. Excessive chewing of betel leaves and adding other ingredients, mainly tobacco and its products is mainly responsible for its addiction and other health problems including cancer. In reality, the betel leaves do not have any match as a cheap, natural and easily available appetizer, digestive stimulant, aphrodisiac and refreshing mastication.

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