



Chewing Betel in Bali: An Ancient Tradition Faces Modern Times

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ABSTRACT

The customary practice of betel leaf chewing, known as *Nginang*, within the Balinese community, is closely linked to social rituals and the expression of hospitality towards guests. This tradition involves offering betel leaves to ancestral spirits and employing them in both healing and life cycle ceremonies. The betel leaf, areca nut, and slaked lime, constituting the core elements of this tradition, become more than mere ingredients. They transform into symbols representing the divine powers of Trimurti—Brahma, Vishnu, and Shiva. The meticulous arrangement of these components mirrors a harmonious blend of religious devotion, health benefits, and social customs. In contemporary times, the practice faces challenges, with the younger generation showing diminishing interest. However, its persistence in traditional communities highlights the resilience of cultural practices in the face of modernization. The ecological abundance of betel leaf, areca nut, and lime in Bali ensures the continuation of this tradition, not just as a cultural relic but as a living heritage. In essence, betel leaf chewing in Bali is not just a historical artifact; it's a living tradition, a cultural legacy that continues to weave through the fabric of Balinese life. It invites us to appreciate the depth and resilience of cultural practices, urging us to preserve and celebrate the diverse expressions that make each community unique.

Keywords: *Nginang*, Betel Leaf, Tradition, Bali.

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INTRODUCTION

The customary practice of betel leaf chewing, known as *Nginang*, within the Balinese community, is closely linked to social rituals and the expression of hospitality towards guests.¹ This tradition involves offering betel leaves to ancestral spirits and employing them in both healing and life cycle ceremonies. While this habit of betel leaf chewing, often combined with areca nut and lime, extends beyond Bali and is common in Southeast Asia, it remains a prevalent custom among the older generation, irrespective of gender, in various regions.² The roots of betel and areca nut consumption can be traced back to the Neolithic era, approximately 3,000 years ago, forming an integral part of Southeast Asian societies. Zambroich in his work, claimed that betel nut chewing has a history of 13,000 years in Southeast Asia, yet the exact commencement remains a subject of debate. Meanwhile, Archaeological findings in Bacau, East Timor, propose an initiation period ranging from 13,000 to 4,000 years ago. Recent research suggests a timeline of

around 2,500 years, indicating a relatively recent origin.

There's speculation that this tradition might have originated in India, but another perspective posits its likely roots in the Nusantara archipelago. This stems from the assumption that betel nut and betel leaves are indigenous to the Indonesian archipelago. The significance of betel chewing in Indonesian culture surpasses that of other Asian regions, evident in its incorporation into nearly all rituals, spanning from birth and adolescence ceremonies to weddings, funerals, and various healing practices. The integral role of betel chewing in connecting life events, from birth to death, within the spiritual and cultural fabric of Indonesian society. In Bali, betel nuts are traditionally presented to guests on trays for *Sulinggih* and *Pemangku*. In a ceremonial context, it serves as a common offering to ancestors, symbolizing the power and divinity of *Trimurti*. The red betel nut represents Brahma, the black betel leaf symbolizes Vishnu, and the white-slaked lime embodies Shiva.³

In Dental health, the tradition was

viewed as a form of cultural dental modification, since betel chewing reflects societal habits unique to certain communities. Teeth and the mouth, being perceived as social organs, undergo modifications symbolizing social status, familial ties, beauty, and more. Chewing betel nuts, aside from providing a smoking-like sensation, is believed to fortify teeth and combat bad breath. The enduring popularity of "*Nginang*" is enhanced by the mild narcotics found in betel leaves. The chemical reaction when combining betel leaves, areca nut, and lime produces alkaloids that have a calming effect on the brain and central nervous system. The habit persists due to the ecological abundance of betel leaves, areca nuts, and lime in the natural environment of the Balinese people, ensuring its unimpeded ecological, technological, and economic continuation.⁴

Ingredients and Its Benefits

Generally, there are three primary components in betel leaf chewing—namely areca nut, betel leaf, and slaked lime, known as *injet* in Indonesian,



Figure 1.⁵ In Balinese ceremonies, these betel leaf chewing ingredients are amalgamated into a mixture or *pacanangan*.



Figure 2.⁹ In the past, *Nginang* or *nyirih* in Indonesia was not merely an individual preference but a societal ritual observed by every adult.

occasionally sourced from crushed seashells. In its application as an offering in Balinese ceremonies, these betel leaf chewing ingredients are amalgamated into a mixture or *pacanangan*. In Balinese Hindu culture, they consistently symbolize representations of the Tri Murti's power (God Brahma, Vishnu, and Shiva). Areca nut symbolizes Brahma, the creator, with a red color representation. In terms of benefits, areca nut is cited as beneficial for treating various conditions such as worm infections, bloated stomach, wounds, scabies, phlegmy cough, diarrhea, delayed menstruation, leucorrhea,

beriberi, malaria, diphtheria, loss of appetite, constipation, toothache, and mouth sores, acting as a kidney cleanser. Vishnu, the Preserver entity with a black color representation, is symbolized by betel leaves (base). It serves to treat a spectrum of conditions, including eye diseases, eczema, bad breath, itchy skin, canker sores, bleeding gums, nosebleeds, bronchitis, cough, wounds, leucorrhea, heartache, syphilis, allergies, diarrhea, toothache, and acts as a blood cleanser. Finally, Iswara, the Melter with a white color representation, is symbolized by slaked lime (*pamor*). It is attributed health

benefits for neutralizing stomach acid.⁶

These ingredients used in betel leaf chewing are believed to contribute to dental and oral health. This belief finds support in studies suggesting that most betel leaf chewers tend to have robust oral health, resilient teeth, infrequent cavities, and minimal tooth loss, even in old age, although their teeth might exhibit some yellowish or reddish discoloration. This correlation with dental and oral health is because some components, such as *gambir* and betel leaves, are recognized as antiseptics. The phytochemical compounds within them can hinder the growth of bacteria causing toothaches and bad breath. Additionally, betel leaf chewing incorporates slaked lime sediment as a mixture, which, when formed into a paste, contains calcium deemed beneficial for dental and bone health. On the other hand, tobacco can be utilized for wound healing due to its alkaloids, saponins, flavonoids, and polyphenols content.

Betel leaf (*Piper Betle* Linn) is a climbing plant that trails on other tree trunks, capable of reaching considerable lengths. With flat, heart-shaped leaves and slightly long stalks, the green and smooth leaf surface contrasts with the greenish-brown trunk, which is rough and wrinkled. In Bali, betel leaves (*Piper Betle* Linn) find usage in ceremonies like crafting *porosan*, *tubungan*, sacred matches, *nasi tulak/ biyakaon*, base stickers, mid-table offerings, among others. Betel leaves contain various compounds, including sesquiterpenes, kavikol, eugenol, and cineol. Notably, betel leaves contain kavikol, comprising about a third of the total essential oil content, offering a distinctive aroma. It possesses bactericidal potency five times greater than regular phenol. Therefore, betel leaves exhibit antimicrobial activity against mouth bacteria like *Streptococcus mutans*, prevalent in saliva and dental plaque.

Areca nut is green when young, transitioning to yellow and red when ripe. Characterized by a smaller habitus and diminutive fruit size, areca nut (*Areca catechu* Linn) is employed alongside slaked lime. The long-standing practice of chewing areca nut in various Indonesian regions attests to its recognition. Especially the seed of areca nut contains bioactive

compounds, including flavonoids such as tannins, renowned for strengthening teeth. Slaked lime isn't a combination of lime and betel, as some assume. It mirrors lime used in the past for betel consumption. Slaked lime is derived from burned coral rocks, forming white ash. This white ash, available in stores, is $\text{Ca}(\text{OH})_2$, produced from limestone or chalk sediment through a relatively straightforward process. Limestone soaks in water for about a week, transforming into mud, constituting slaked lime. With several hot-natured compounds—cadinene, karvakol, cineol, kavinal, and samak substances—slaked lime is believed to confer health and beauty benefits. However, caution is advised due to its hot nature, potentially causing a burning sensation, particularly for individuals with sensitive skin.⁷

Gambir extract encompasses several constituents—catechin, catechu acid, quercetin, red catechu, gambir fluoresin, ash, fat, and wax. Predominantly featuring flavonoids, catechins (up to 51%), tanning agents (22-50%), and various alkaloids and dihydro derivatives, gambir extract also harbors diverse chemical compounds—catechutanic acid (20-50%), pyrocatechol (20-30%), gambir fluorescence (1-3%), red catechu (3-5%), quercetin (2-4%), fixed oil (1-2%), and wax (1-2%). As a flavonoid, catechin is a secondary metabolite produced naturally by plants, falling into the flavonoid category. Renowned for anti-tumor and antioxidant activities, catechins can impede extracellular glucan formation that binds *Streptococcus mutans* to tooth surfaces, while catechol inhibits the glucosyl transferase enzyme activity owned by *Streptococcus mutans*, associated with dental plaque formation.⁸

Tobacco (*Nicotiana tabacum* L.) stands as a plantation crop, not a food plant, with leaves used in cigarette production. Recognized for containing essential compounds—nicotine alkaloids, flavonoids (phenols), and essential oils—tobacco exhibits antibacterial properties. Described as natural organic products with low molecular weight, antibacterials from tobacco are formed by microorganisms and plants, actively combatting other microorganisms at low concentrations. Although tobacco leaves are mainly used for making cigarettes and raise health

concerns, from a therapeutic perspective, tobacco holds promise as an alternative herbal medicine ingredient. Some studies have highlighted tobacco's potential as a natural pesticide and cavity preventer due to its flavonoid content, known for its antioxidant properties, inhibiting oxidation processes.¹⁰

Nginang : Why and How It Should Be Done

In the past, chewing betel leaf or *nyirih* in Indonesia was not merely an individual preference but a societal ritual observed by every adult. Failing to offer or declining betel leaf when offered was considered disrespectful. Betel leaf chewing has become a cultural expression in Indonesian society, akin to the contemporary habit of enjoying candy or snacks. The ingredients used are not as modern or flavorful as industrially produced candies and include betel leaves, gambier, tobacco, slaked lime, and areca nut, providing a red color. While betel leaf chewing was once a pastime for those who enjoy snacking, nowadays, it is predominantly practiced by older individuals. The duration of betel leaf chewing typically ranges from half an hour to an hour, and some individuals engage in it for extended periods, depending on the person preparing it and the desired spiciness. Fundamentally, betel leaf chewing was a traditional method to maintain oral hygiene in the absence of modern toothpaste and convenient toothbrushes. Due to the content of betel leaves, spices, and calcium from slaked lime, individuals in the past who embraced betel leaf chewing were noted for having durable and intact teeth throughout their lives.^{11,12}

Typically, the act of betel leaf chewing involves placing slaked lime (Calcium Hydroxide) and small fragments of areca nut (*Areca Catechu*) onto a betel leaf (*Piper Betle* Leaves). This leaf is sometimes combined with other substances like gambier (*Uncaria Gambier*). The betel leaf, along with the additional ingredients, is folded and inserted into the mouth between the teeth and cheek, where it is then chewed. During chewing, the tobacco lump is rubbed against the labial surface of the teeth and buccal mucosa. The resulting saliva, known as betel juice,

has a red color, and individuals may either spit it out or swallow it.¹³

In Javanese wedding traditions, betel leaves play a role in the *temu manten* ceremony, symbolizing the meeting of the betrothed individuals.¹⁴ Betel leaf chewing, as a tradition, embodies both observable and internal meanings, representing the integration of physical, emotional, and spiritual aspects of human life. In Bali, betel leaf chewing is typically associated with older individuals and is also presented to guests, *Sulinggih*, and *Pemangku*, referred to as *macanangan*. *Macanangan* (materials for offerings) often serves as a presentation for a *Sulinggih* and, beyond social interactions, is employed ceremonially as an offering to ancestors.

Betel Nut Chewing in the Contemporary Era

The tradition of nginang is gradually fading away, with the younger generation showing little interest in this practice. It has become a ritual mostly upheld by the elderly, emphasizing not only its positive impact on oral and dental health but also the deeper meanings embedded in this activity. The general method of betel nut chewing involves placing slaked lime (Calcium Hydroxide) and small betel nut pieces (*Areca Catechu*) on a betel leaf (*Piper Betle* Leaves). Occasionally, additional elements such as gambier (*Uncaria Gambier*) are included. In the bygone days, every Balinese household typically possessed a betel nut preparation area known as *Pabuan*, equipped with a crushing tool termed *Panyokcokan* or *Panglocokan*. This crushing tool was particularly vital for the elderly, especially those lacking teeth, making it easier to chew betel nut. Royal families would often use copper *Pabuan*. When a king traveled, a beautiful female attendant would carry the *Pabuan*. These tools, both practical and artistic, involving women as carriers, weren't solely about functionality; they were also linked to social status. Betel nut consumption was intricately tied to the sexual vitality of both men and women.

Historically, married couples in Bali would commence their intimate moments by partaking in betel nut, betel leaf, and slaked lime. This practice wasn't merely perceived as enhancing sexual vitality

but also as a means to freshen breath and soothe emotions, ultimately leading to the optimization of intimate relationships. Consequently, during marriage ceremonies *Pawiwahan* in Bali, betel nut chewing symbolized marriage, engagement, and an invitation to intimacy for both men and women. The combination of betel nut and betel leaf became a symbol of union, with the warmth of betel nut complemented by the coolness of the betel leaf.

While betel nut chewing has diminished in significance in contemporary society, it still endures in traditional communities less exposed to modernization or intense Westernization projects. This tradition provides insights into the process of continuity and discontinuity within a cultural practice from the past. Despite the diminishing prevalence of betel nut chewing, especially in contemporary urban spaces, for those who explore the more remote regions of the country—from Sumatra and Sulawesi to the eastern parts like East Nusa Tenggara and Papua—the continuation of this tradition is evident. Culture encompasses all the creations, emotions, and intellectual expressions of a society, making the practice of betel nut chewing a result of human creativity, emotions, and intellectual expression. This manifestation gives rise to a technological system and tangible cultural elements needed to navigate the environment. The decline in the practice of betel nut chewing reflects how contemporary society expresses itself within its spatial and temporal context.^{16,17}

CONCLUSION

The tradition of betel leaf chewing, deeply rooted in the cultural tapestry of Bali, stands as a testament to the rich heritage and intricate rituals of the Balinese community. Beyond being a practice associated with oral health and hospitality, it holds profound symbolic meanings embedded in religious ceremonies, social status, and even intimate relationships. As we delve into the historical origins, the debate on whether betel chewing originated in India or the Nusantara archipelago adds an intriguing layer to its cultural significance. Despite the debate, its prevalence and diverse applications in Balinese ceremonies underscore its

integral role in connecting spiritual beliefs with life events.

The betel leaf, areca nut, and slaked lime, constituting the core elements of this tradition, become more than mere ingredients. They transform into symbols representing the divine powers of Trimurti—Brahma, Vishnu, and Shiva. The meticulous arrangement of these components mirrors a harmonious blend of religious devotion, health benefits, and social customs. In contemporary times, the practice faces challenges, with the younger generation showing diminishing interest. However, its persistence in traditional communities highlights the resilience of cultural practices in the face of modernization. The ecological abundance of betel leaf, areca nut, and lime in Bali ensures the continuation of this tradition, not just as a cultural relic but as a living heritage.

The multifaceted benefits of betel leaf chewing, from dental health to its calming effects, contribute to its enduring popularity. Moreover, the intricate composition of the betel leaf chewing ingredients symbolizes a holistic approach to well-being, intertwining physical, emotional, and spiritual facets. As we reflect on the past and present of betel leaf chewing, it becomes clear that this practice is more than a cultural quirk; it's a living expression of the Balinese identity. Its decline in urban spaces mirrors the changing expressions of society, yet its vibrancy in remote regions underscores the importance of cultural preservation.

In essence, betel leaf chewing in Bali is not just a historical artifact; it's a living tradition, a cultural legacy that continues to weave through the fabric of Balinese life. It invites us to appreciate the depth and resilience of cultural practices, urging us to preserve and celebrate the diverse expressions that make each community unique.

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