



AGRI MAGAZINE

(International E-Magazine for Agricultural Articles)

Volume: 03, Issue: 10 (October, 2026)

Available online at <http://www.agrimagazine.in>

©Agri Magazine, ISSN: 3048-8656

PHALAP – The Bitter the Better: Exploring the Traditional Smoked Tea of Northeast India

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Phalap, also known as Falap, Phanap or Phalap-khah, is a distinctive traditional smoked tea associated with the Singpho community of Assam and the Tangsa community of Arunachal Pradesh. Prepared from young leafy twigs of the Assam type of tea plant, *Camellia sinensis* var. *assamica*, it is processed through heating, drying, smoking, packing into bamboo and roasting. The finished product is compact, strongly aromatic and characteristically bitter. Phalap is valued as a beverage and as an expression of indigenous knowledge, local materials and cultural identity. Scientific studies have begun to investigate its phytochemical composition and laboratory antioxidant and antimicrobial activities. These findings are promising areas for further research, but they do not establish that drinking Phalap prevents or treats disease. Documenting its preparation and supporting community-led conservation may help preserve this distinctive tea tradition while encouraging responsible research and potential livelihood opportunities.

Introduction

Tea is more than a beverage in Northeast India; it is an integral part of the region's cultural identity, traditional knowledge and everyday life. Among the diverse tea traditions of the region, Phalap, also known as Falap, Phanap or Phalap-khah, holds a special place. This distinctive traditional tea is associated particularly with the Singpho community of Assam and the Tangsa community of Arunachal Pradesh. Unlike conventional tea, Phalap is prepared by processing young tea shoots through heating, drying, smoking and compacting them inside bamboo containers. For these communities, Phalap represents more than a refreshing drink. Its preparation reflects generations of accumulated knowledge about tea plants, bamboo, fire, preservation and flavour development. The Tangsa community of Changlang district, Arunachal Pradesh, has maintained this tradition for generations, and Phalap is also associated with local folklore. The beverage is valued for its characteristic smoky aroma, earthy flavour and pronounced bitterness (Lungphi et al., 2019; Deka & Devi, 2021). Phalap is therefore an important example of indigenous tea processing that deserves greater recognition in discussions of agricultural biodiversity, traditional food systems and the cultural heritage of Northeast India.

The Raw Material: Young Shoots of the Assam Tea Plant

Phalap is traditionally prepared from young leafy twigs of *Camellia sinensis* var. *assamica*, the Assam type of tea plant. Unlike commercial tea cultivation, which generally involves organised plantations and specialised processing systems, traditional Phalap production is associated with small household tea gardens. Tea plants are commonly maintained at a manageable height through regular trimming, encouraging the development of new branches and tender shoots. According to the traditional practices described in the literature, these gardens are generally managed differently from large commercial tea plantations, with limited reliance on external agricultural inputs.

The young shoots, often bearing up to four soft leaves, are harvested together with their tender stems. Unlike conventional tea manufacture, in which the harvested material is processed according to specific product requirements, Phalap production retains the leafy twigs as its basic raw material. This traditional approach demonstrates how locally adapted tea plants and household-level cultivation practices support a distinctive indigenous food product (Lungphi et al., 2019).

Traditional Preparation: From Fresh Shoots to Smoked Tea

The preparation of Phalap involves several carefully performed steps. Each contributes to the final product's compact structure, smoky aroma, bitterness and keeping quality.

1. Collection of young tea shoots

Fresh, tender shoots are collected from locally maintained tea plants. The young leaves and attached stems are retained for processing. Careful selection of the raw material provides the foundation for the traditional product.

2. Initial heating

The freshly collected twigs are transferred to a vessel known locally as a *Mokhang* or *Dekchi*. The material is heated over a fire and stirred continuously until the shoots soften and become discoloured. This initial heat treatment changes the appearance and texture of the leaves and prepares them for subsequent drying.

3. Drying over the fireplace

The softened shoots are spread evenly over a bamboo mat known as a *Phey*. The mat is suspended approximately 120 cm above the fireplace, allowing the material to dry gradually in the warm, smoky environment. The process may take about 24 hours, depending on the conditions and the method employed. Although sun-drying may also be practised, smoked Phalap is particularly valued for the characteristic aroma developed during traditional processing.

4. Breaking the dried material

Once sufficiently dried, the twigs are transferred to a closely woven bamboo surface called a *Daam*. They are gently crushed by hand to break the brittle material into smaller fragments. Incompletely dried portions are returned for further drying. This step prepares the tea material for compact packing inside bamboo.

5. Filling the bamboo container

A freshly cut green bamboo section is prepared with one node and a complete internode. The bamboo provides a natural container for the tea material and forms an essential part of the traditional processing method. The dried fragments are packed tightly into the bamboo section using a slender piece of wood. The closed end is placed near the fire for roasting, after which the material settles and additional space becomes available. More tea fragments are added, and the process is repeated until the container is filled. Leaves of *Macaranga denticulata* are traditionally used as a temporary cover during this stage. Once the bamboo is completely filled, its opening is sealed with thin, broad bamboo strips before the final roasting.

6. Final roasting and preparation for storage

Roasting consolidates the tea material into a firm mass inside the bamboo. After roasting, the outer bamboo wall is carefully scraped away, leaving a thinner layer that can be broken and removed more easily when the tea is required for consumption. The finished Phalap becomes a dense, hard product that may need to be cut or broken into smaller pieces using a traditional blade, such as a *daao* or *jang*. The combination of heating, drying, smoking, roasting and compact storage distinguishes Phalap from many other forms of tea.

Ageing and Storage: A Distinctive Feature

One of the most interesting features of Phalap is its traditional ageing process. The prepared bamboo containers are stored in dry, warm places, often in a loft known as a *Kharang*, situated above the fireplace.

According to the practices described in the source literature, Phalap may be stored for approximately eight to ten years, with the fourth and fifth years traditionally regarded as particularly favourable for the product's quality. Storage in a smoky environment contributes to its characteristic sensory identity. However, the precise chemical changes occurring during prolonged ageing, and their effects on aroma, flavour and safety, require further systematic investigation. This method of preservation illustrates the ingenuity of traditional food-processing practices developed in response to local materials, environmental conditions and household needs.

Brewing Phalap: The Pleasure of Bitter Tea

The preparation of Phalap for drinking differs from that of conventional tea. For a traditional preparation, approximately 50–70 g of the solid tea is cut into small pieces and added to around 1.5 litres of boiling water. The mixture is boiled for approximately 15–30 minutes, depending on the desired strength. The resulting liquor is characteristically brown and smoky, with an intense bitter taste. Unlike many commonly consumed tea preparations, traditional Phalap-khah is generally enjoyed without milk, sugar, salt or butter. Its bitterness is considered an important part of its appeal. The colour and intensity of the beverage vary with the quantity of tea used and the duration of boiling. Phalap can also be prepared by steeping it in previously boiled water rather than boiling it for an extended period. This produces a lighter, often golden-orange liquor with a less pronounced bitterness while retaining its smoky character. Traditional serving practices further enrich the experience. Bamboo cups are used in some households, while gourds may be used to carry the brewed beverage. These practices demonstrate the close relationship between the tea, locally available plant materials and everyday cultural life.

Scientific Interest: Phytochemicals and Antioxidant Activity

Beyond its cultural importance, Phalap has attracted scientific attention because of its chemical composition and potential biological activities. Tea plants are known to contain several classes of phytochemicals, including polyphenols, flavonoids, alkaloids and other compounds that contribute to their chemical and sensory properties. The processing conditions used for Phalap may influence the composition and extractability of these substances, making this traditional product an interesting subject for food chemistry and tea science. Lungphi et al. (2022), in a study published in the *Journal of the Botanical Society of Bengal*, investigated the phytochemical composition and selected biological activities of Phalap-khah. Their work reported compounds identified through gas chromatography–mass spectrometry (GC–MS), as well as measurable phenolic and flavonoid contents. The researchers also assessed antioxidant activity using laboratory assays, including DPPH radical-scavenging and ferric-reducing antioxidant power tests. These experiments indicated antioxidant activity in the tested extract under the experimental conditions. Such findings provide an initial scientific basis for further research into Phalap's chemical properties. Nevertheless, laboratory antioxidant activity does not necessarily translate directly into health benefits in humans. The results may also depend on the sample, extraction procedure, processing conditions and analytical method.

Traditional Health Beliefs and the Need for Further Research

Among communities that consume Phalap, the beverage is traditionally associated with perceived health benefits. The Tangsa community has reported beliefs that it may aid digestion and help protect against certain diseases. Some accounts also describe beliefs concerning diabetes and cancer (Lungphi et al., 2022). These beliefs form part of the traditional knowledge surrounding the beverage and deserve respectful documentation. At the same time, they must be distinguished from established medical evidence. Laboratory studies reporting antioxidant or antimicrobial activity do not demonstrate that drinking Phalap prevents or treats cancer, diabetes or other diseases. Antimicrobial findings obtained using extracts in laboratory experiments cannot be assumed to establish effectiveness in the human

body. Similarly, computer-based molecular docking predictions identify possible interactions that require further experimental confirmation. More research is needed to characterise the chemical composition of Phalap under different processing and ageing conditions, evaluate its nutritional properties, assess its safety and determine whether any of its reported biological activities have meaningful effects in humans. A scientifically balanced understanding of Phalap can recognise the value of traditional experience while avoiding unsupported medical claims.

Economic Potential and Conservation of Traditional Knowledge

Phalap has potential significance beyond household consumption. Its distinctive production method, sensory characteristics and cultural associations may offer opportunities for small-scale enterprise, heritage-based tourism and the promotion of indigenous food products. The traditional process is labour-intensive and depends on skills passed between generations. Documenting these practices can help preserve knowledge of local tea cultivation, bamboo selection, smoking, storage and preparation. The original account describes local marketing within Singpho- and Tangsa-inhabited areas, suggesting that Phalap has historically been more closely associated with community-level consumption than with large commercial tea markets. Any effort to promote Phalap more widely should involve the communities responsible for maintaining this tradition. Their participation is essential to ensuring that cultural knowledge is represented accurately and that potential economic benefits support the knowledge holders and local producers. Further work on product standardisation, hygienic processing, storage stability, quality evaluation and consumer acceptance could help explore its wider market potential without losing its traditional identity.

Conclusion

Phalap, the traditional smoked tea of the Singpho and Tangsa communities of Northeast India, is a remarkable example of indigenous knowledge applied to the cultivation, processing and preservation of tea. Prepared from young shoots of *Camellia sinensis* var. *assamica*, it undergoes a distinctive sequence of heating, drying, smoking, bamboo packing, roasting and ageing. Its smoky aroma, pronounced bitterness and traditional method of preparation distinguish it from conventional tea products. Preliminary scientific investigations into its phytochemical composition and laboratory antioxidant activity have also opened avenues for further research. However, claims about disease prevention or treatment remain unproven and should not be inferred from laboratory findings alone. Ultimately, Phalap deserves recognition not only as a unique tea beverage but also as a living expression of the cultural heritage, agricultural knowledge and ingenuity of Northeast India's indigenous communities. Preserving this tradition while investigating its scientific properties responsibly could create opportunities for cultural conservation, research and sustainable rural enterprise.

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PHALAP (SOURCE: GOOGLE)



PHALAP PRODUCTS AVAILABLE IN THE MARKET (SOURCE: GOOGLE)